THE UNIVERSITY OF ZAMBIA

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THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
MASTER OF SCIENCE IN CORPORATE COMMUNICATION

SEPTEMBER, 2019 EXAM

COM 5125: INTERCULTURAL COMMUNICATION

DATE: 9th SEPTEMBER, 2019
TIME: 14:00 – 17:00 HOURS
DURATION: THREE (3) HOURS
ANSWER ALL QUESTIONS (20 MARKS EACH)

1. Discuss the definitions of culture. Different cultures communicate through various levels of context. Outline these contexts and evaluate how Zambia fits into the different contexts.

2. Novinger (2001) has observed that, "The successful intercultural communication process best begins with goodwill on both sides. However, an individual's negative reactions and evaluations of a foreign culture may create intercultural communication barriers" (p. 23). In view of this statement, discuss the intercultural communication challenges you think are faced by the Asian employers in Zambia.

3. With relevant examples of Zambian ethnic groupings, show how perception and stereotyping can cause intercultural communication barriers.

END OF EXAM

THE UNIVERSITY OF ZAMBIA
Graduate School of Business

FINAL EXAMINATION

COM 5135 - COMMUNICATION NETWORKS AND MANAGING INFORMATION

Date: 17th December 2020
Time: 14:00hrs – 17:00hrs
Duration: 3 Hours
Venue: Sport Hall

Instructions

1. There are **Five (5) Questions** in this paper
2. Each question carries **25 Marks**
3. The paper has **Two (2) Sections**
4. *You are required to answer a total of* ***Four (4) Questions***
5. *Answer* ***ALL*** *the questions in* ***Section A*** and Choose ONE *(1) Question from* ***Section B***

SECTION A

This Section has THREE Questions. Answer **ALL** the questions

QUESTION ONE

a) Nonverbal communication, known as "body language" sends strong positive and negative signals. This is how much it influences any message:

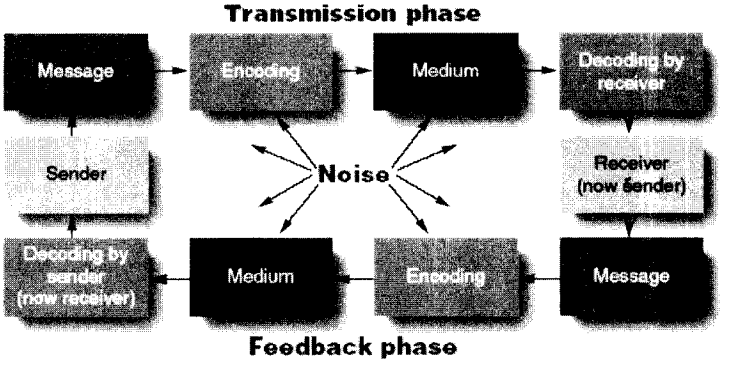
Words	**8%**
Tone of voice	**34%**
Non-verbal cues	**58%**
Message	**100%**

Discuss each of the following aspects of Body language communication [10 Marks]

i. Face
ii. Figure
iii. Focus
iv. Tone
v. Time

b) In the year 2020, most communication channels were affected due to COVID-19. One of these communication channels that was affected was your postgraduate classes. Most classes were conducted online with very minimum face to face meetings. Communication was largely via chat platforms and social media. For the course **Communication Networks and Managing Information**, this created some challenges in communication between the lecturer and the students. The challenges were in sharing of information between the lecturer and the students to reach a common understanding. The diagram below shows the main phases of the communication process that can be used to address the communication challenges as a result of Covid-19. Using the communication process and challenges in this course **Communication Networks and Managing Information** [15 Marks];

i. Describe each of the phases and steps shown in the diagram below in the transmission and feedback phase
ii. What were the major sources of the noise in the communication between the lecturer and the students for the course? Give examples of the types and intensity of the noise that affected effective communication in this course
iii. Using the figure below, explain how you would help to improve the communication process between the class members and the course lecturer



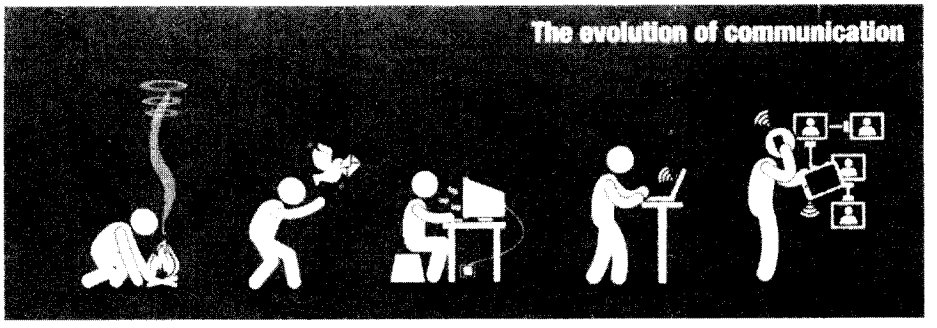
QUESTION TWO

a) The diagram below shows the major stages in constructive communication. Discuss the major factors that can help with meaningful exchange of idea and hence lead to understanding [5 Marks]

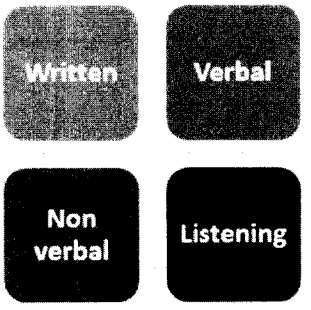


b) The new technologies and social media sites are constantly changing, evolving and developing. This means the face of personal communication is also changing. These changes often mean people are having less and less face-to-face interaction. Social media sites and other web 2.0 technologies such as WhatsApp, Email, texting, YouTube, Facebook and Twitter are examples of mediums that have diminished verbal communication. **Discuss** each of the following **6 Trends in Communication** [12 Marks]

i. Compression of space and time
ii. Commodification
iii. Deregulation and Concentration and Conglomeration
iv. Globalization
v. Digitization and Convergence
vi. Personalization



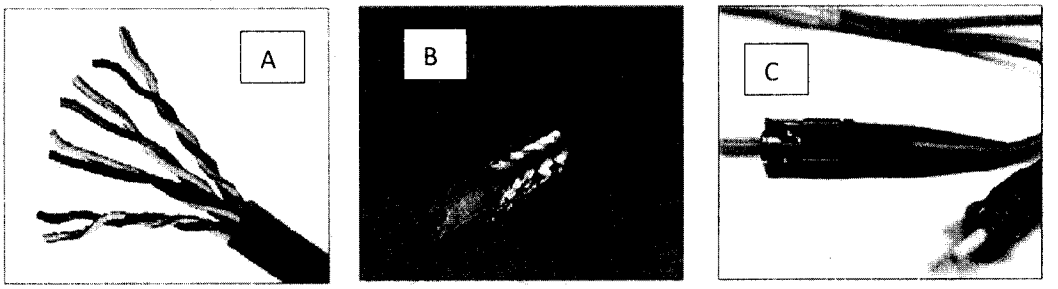
c) The diagram below shows the four types of communication skills. Briefly discuss each of the communication skills below with examples [8 Marks]



QUESTION THREE

a) A channel is a path between two communication devices. The channel consists of one or more transmission media. The transmission media can be classified as Physical or Wireless. The diagram below shows three examples of the physical communication media technologies [11 Marks]

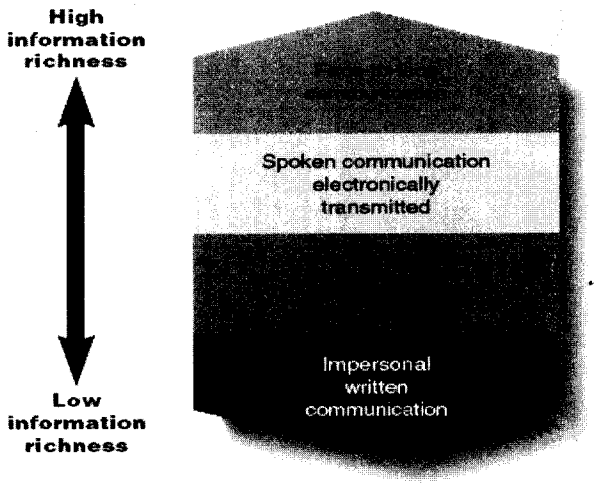
i. Identify and name each of the three transmission communication media (A, B, and C)
ii. Give the typical example where each of the transmission communication media technologies (A, B and C) is used today
iii. What is the typical data transmission spend of each physical transmission media below?
iv. Give any ***three examples of wireless transmission communication media technologies***



b) In order to explain the social process of communication, scholars have developed several models. The three most well-known models for communication are Linear, Interactional, and Transactional. Each model sheds light on the development of communication, but emphasizes different parts of the communication process. The models provide pictures, or visual representations, of complex interactions. They are useful because they simplify the basic structure of communication and can help us to understand that structure not just verbally, but also visually. **Draw a well labelled diagram and discuss** the details of the **Shannon and Weaver** communication model [6 Marks]

c) The diagram below shows Information Richness of the different types of Communication Media [8 Marks].

i. What is information richness
ii. Describe each of the four media shown below with real life examples in reference to the richness of information



SECTION B

This Section has **Two** (2) Questions. Choose **One** (1) question Only

QUESTION ONE

a) Effective Communication is defined as the ability to convey information to another effectively and efficiently. It is crucial to communicate effectively in order to ensure you achieve your goals. Effective communication can help to foster a good working relationship which can in turn improve morale and efficiency. However, there are several factors that have the potential to influence effective communication. List and discuss any five (5) factors that have the potential to influence effective communication [5 Marks]

b) Communication Networks can be described as the pathways along which information flows in groups and teams and throughout the organization. Usually, the type of communication network depends on the nature of the group's tasks and also the extent to which group members need to communicate with each other to achieve group goals. The communication networks can be grouped into four main groups as follows [8 Marks];

- Wheel Network
- Chan Network
- Circle Network
- All-Channel Network

i. Briefly discuss each group
ii. Draw a well labelled diagram of each group illustrating the nature of the network

c) Web 2.0 is a series of concepts and ideas that redefine the web as a platform where the individual users control their own data [12 Marks].

i. Give the key major characteristics of web 2.0 in network communication
ii. Briefly describe each of the following web 2.0 key social platform technologies shown in the figure below by giving examples in each case



QUESTION TWO

a) The application of electricity to communications led to the inventions the telephone and telegraph. More recent advances such as satellites and the Internet have extended communications worldwide and made global news and information easily accessible by people could send information instantly over long distances. Communications technology has continued to improve with each passing year by bringing more information choices at lower costs [5 Marks].

i. What is Groupware? Give at least two examples of the Groupware software
ii. Give any three points on how one can be successful using Groupware software

b) Strategic Communications is an important aspect for a leader [8 Marks]

i. Describe the major benefit of planning as a strategy in communication
ii. Describe the 6 easy steps to use when building your strategic communications planning into your planning cycle

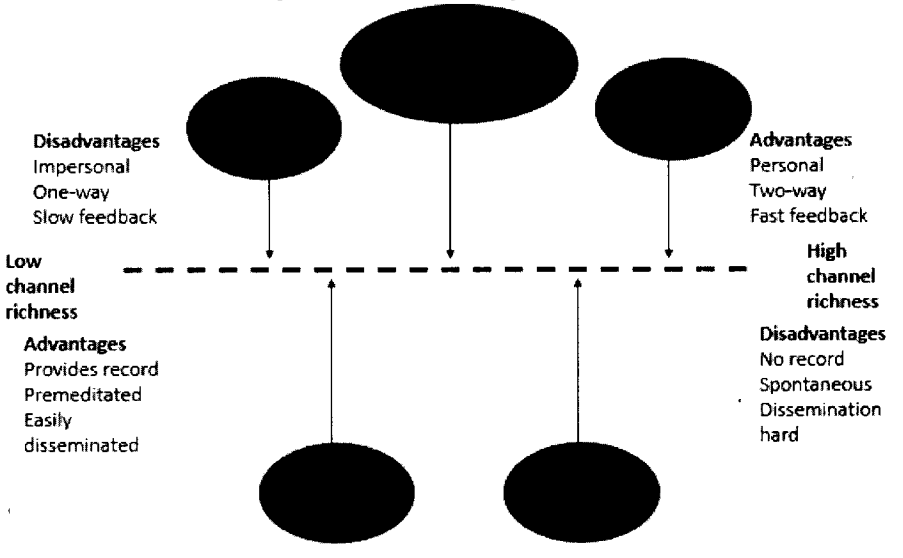
c) You have just been promoted to the level of the communication director in one of the government ministries. You have resolved based on your expertise to be a communication champion as a leader. In order to become the communication champion, you will need to [4 Marks];

- Establish credibility
- Build goals on common ground
- Make your position compelling to others
- Connect emotionally

Discuss how you would go about to attain and implement each of the four points above in order to become a communication champion as a leader in government

d) Using the diagram below [8 Marks],

i. Describe each of the communication channels shown.
ii. Discuss how you would use each of the channels shown to become a communication champion as a leader in government



End of Examination Paper

THE UNIVERSITY OF ZAMBIA
Graduate School of Business

FINAL EXAMINATION

COM 5135 - COMMUNICATION NETWORKS AND MANAGING INFORMATION

Date: 16th September 2021
Time: 09:00hrs – 12:00hrs
Duration: 3 Hours
Venue: Sports Hall

Instructions

1. There are **Five (5) Questions** in this paper
2. Each question carries **25 Marks,**
3. The paper has **Two (2) Sections**
4. *You are required to answer a total of* ***Four (4) Questions***
5. *Answer* ***ALL the questions in Section A*** and Choose ***Any TWO (2) Questions from Section B***

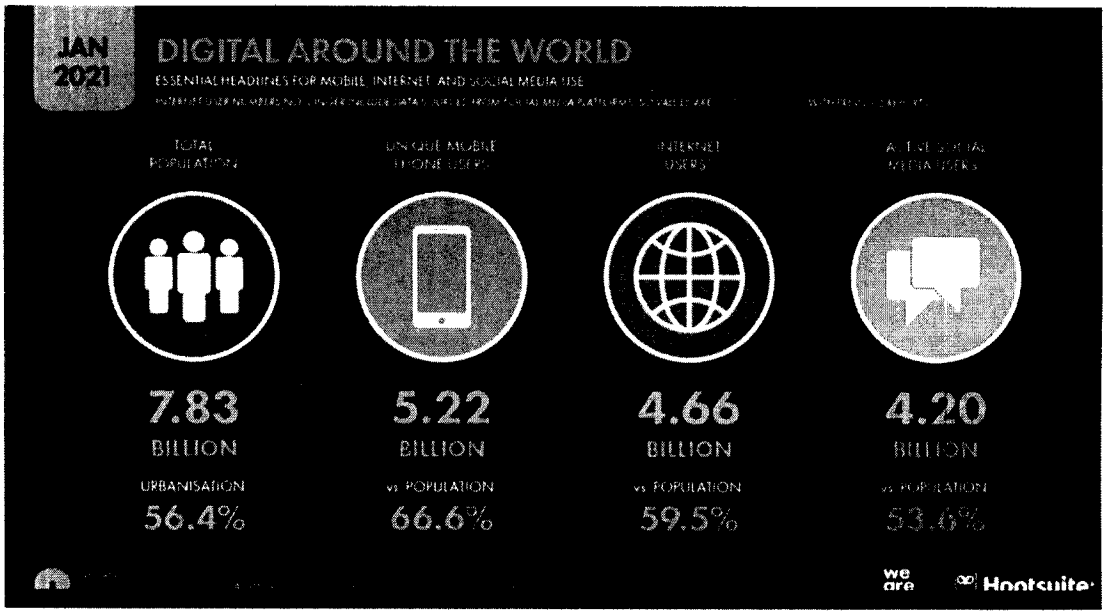
SECTION A

This Section has TWO Questions. Answer **ALL** the questions

QUESTION ONE

a) Briefly describe each of the following [3 Marks]
   i. Communication Networks
   ii. Information Management

b) The diagram below shows that that by January 2021, there were 7.8 billion people on Planet Earth. About 5.2 billion were using mobile phones and about 4.7 billion were using the Internet. This also means that there have been rapid changes in he way people communicate by adapting online communications means.



Discuss by citing examples in Zambia how each of the following communication media have changed in order to take advantages of the growing number of internet users in Zambia [12 Marks]

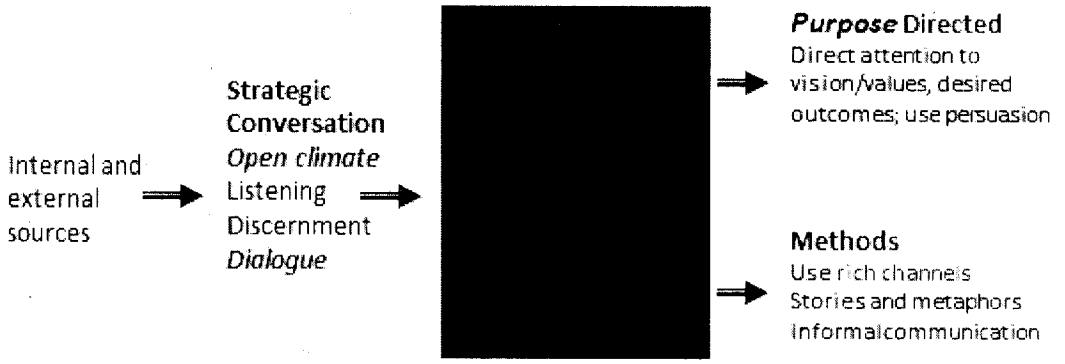
i. Print
   1. Newspapers
   2. Magazines
   3. Books

ii. Audio
   1. Radio
   2. Music/Sound Recording

iii. Visual
   1. Film
   2. TV
   3. Videogames

c) The diagram below shows how a leader can be a communication champion. Imagine you have just been promoted as a leader to a new position at your work place. Using the diagram below, explain how you can be a good and effective communication leader by [10 Marks]:

i. Establish credibility
ii. Build goals on common ground
iii. Make your position compelling to others
iv. Connect emotionally

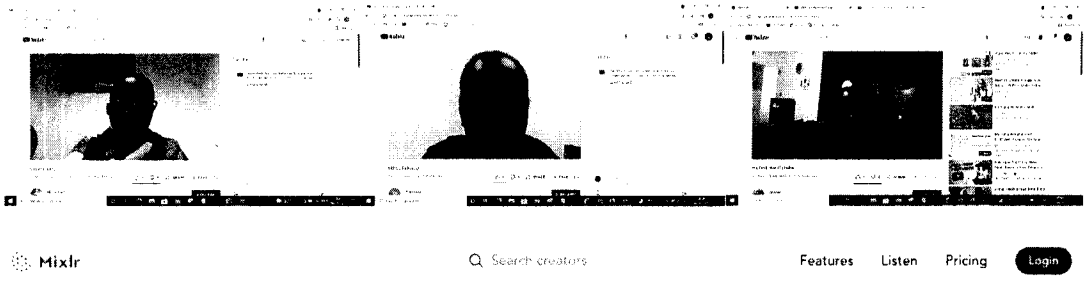


QUESTION TWO

Ruth, Musonda, Velonica, Inutu and **Amos** have decided to team up and form a digital communication network company called **Z-STREAMER**. The company offers a wide range of products to the Zambian community and the world at large. The company is targeted at Internet users which stand at 4 billion around the world. ONLINE RADIO will be used to stream live audio to the listeners via social media platforms. The second channel is Live Video streaming platform. The two channels will be used to discuss a wide range of topic that includes politics, social, cultural and religion. They have also decided to register and open video streamlining channel with YouTube. Both the audio streaming and video streaming Channels are live 7 days a week and 365 days a year. The diagram below shows the Z-STREAMER live video streaming and Audio streaming services [25 Marks].

a) Z-STREAMER **Audio** streaming Channel
   i. Discuss the major steps that you used to setup the AUDIO streaming Channel using ***Mixlr audio streaming platform***.
   ii. Give the steps that you used to start a live online radio broadcast using Mixlr platform?
   iii. How can you share your recorded and live audio broadcast with your audience on Facebook and Twitter?

b) Z-STREAMER **Video** streaming Channel
   i. Discuss the major steps that you used to setup the VIDEO streaming Channel using ***YOUTUBE Video streaming platform.***
   ii. Outline the steps on how to start a live online video broadcast using YouTube?
   iii. How can you share your recorded and live video broadcast with your audience on Facebook and Twitter?



SECTION B

This Section has **Three** (3) Questions. Choose any **Two** (2) questions

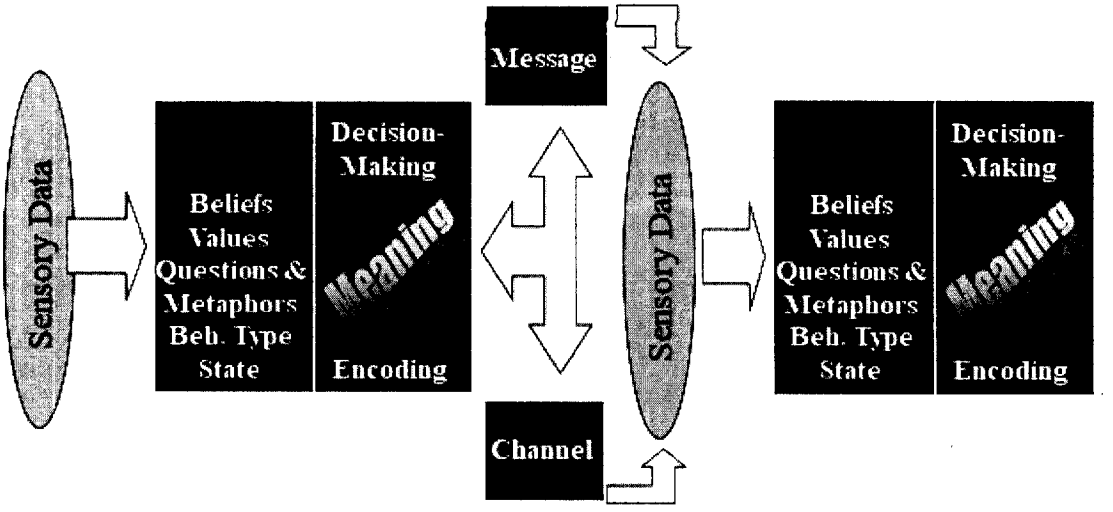
QUESTION ONE

a) Mass communication is the communication of information from a person, small group of people, or an organization to a large group of heterogeneous and anonymous people [15 Marks]

i. Name and discuss the common communication channels used in mass communication
ii. List the six major characteristics of Mass Communication
iii. Name and discuss the five m's of mass communication components

b) The diagram below shows the Bowman Communication Model. With the help of the diagram below [10 marks]

i. Describe the four facets of communication
ii. Why we communicate
iii. How we communicate
iv. Choosing your medium
v. Barriers to communication

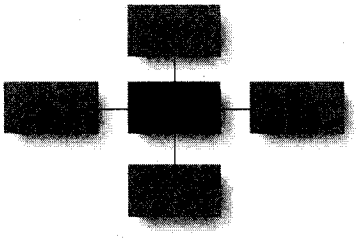


The Bowman Communication Model, 1992-2003

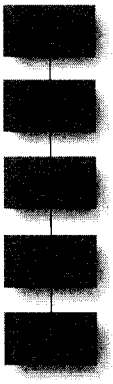
QUESTION TWO

a) Briefly discuss each of the following technological advances in communication [7 Marks]
   i. Groupware
   ii. Give five ways how one can be successful using Groupware

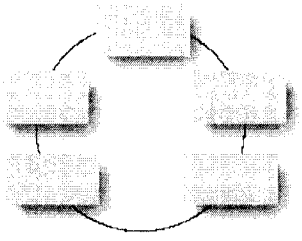
b) The diagram below shows Communication Networks in Groups and Teams. Give a brief description for each group given below [8 Marks]



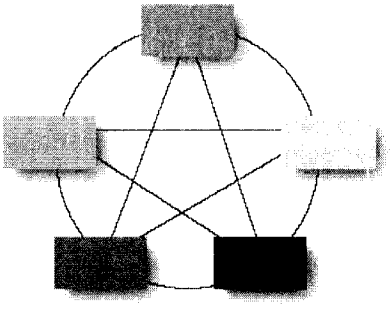
Wheel network



Chain network



Circle network



All-channel network

c) Nonverbal communication, known as "body language" sends strong positive and negative signals. This is how much it influences any message:

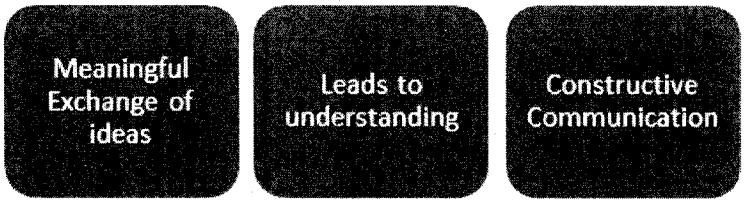
Words	**8%**
Tone of voice	**34%**
Non-verbal cues	**58%**
Message	**100%**

Discuss each of the following aspects of Body language communication [10 Marks]
   i. Face
   ii. Figure
   iii. Focus
   iv. Tone
   v. Time

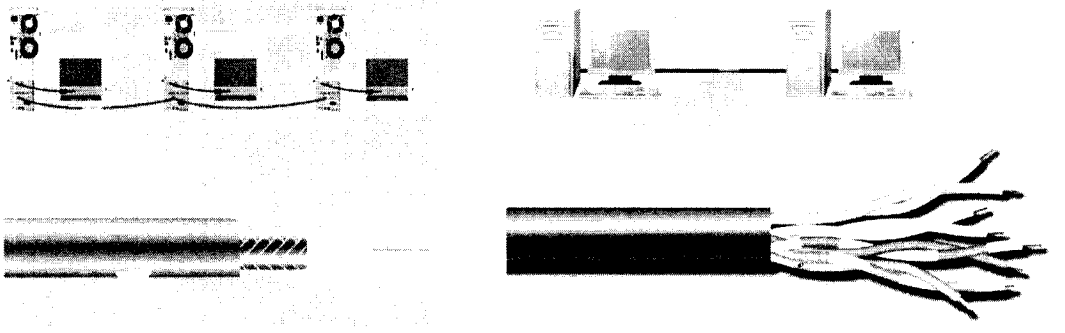
QUESTION THREE

a) Discuss each of the following 7 Trends in Communication [14 Marks]
   i. Compression of space and time
   ii. Commodification
   iii. Deregulation and Concentration and Conglomeration
   iv. Globalization :
   v. Digitization and Convergence
   vi. Specialization (part of "demassification")
   vii. Personalization

b) The diagram below shows the major stages in constructive communication. Discuss the major factors that can help with meaningful exchange of idea and hence lead to understanding [5 Marks]



c) A channel is a path between two communication devices. The channel consists of one or more transmission media. The transmission media can be classified as Physical (wire cable, fibre) or Wireless (Air). The diagrams below show examples of wire cables used as physical media. Name and discuss three examples of physical media and three examples of wires media categories [6 Marks]



UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

FINAL EXAMINATION

COM 5215 - ALTERNATIVE DISPUTE RESOLUTION

INSTRUCTIONS FOR CANDIDATES

Time allowed: 3 Hours

1. Answer **one question in section A** and any other three questions in section B
2. Question **one carries 40 marks** and all other questions carry 20 marks each
3. Questions can be answered in any order
4. Credit will be awarded for appropriate use of examples

SECTION A

QUESTION ONE

Read the following case and answer the questions that follow:

Men walking in the Gacaca court's archives in the Rwandan capital Kigali in 2014 where hundreds of stacked boxes hold the trial case documents of almost 2 million people that have been tried before the traditional Gacaca courts between 2001 and 2012.

Often lauded by international observers, Rwanda's *gacaca* courts have long been held up by their proponents as a model for successful, post-conflict reconciliation efforts. Confronted with the nearly impossible challenge of rebuilding a country after genocide, Rwanda needed a mechanism to hold those who committed genocide accountable in an efficient and effective manner. The solution was *gacaca*: a system of 12,000 community-based courts that sought to try genocide criminals while promoting forgiveness by victims, ownership of guilt by criminals, and reconciliation in communities as a way to move forward. While the organizers and leaders of the genocide were mostly sent for trial at the International Criminal Tribunal for Rwanda in Arusha, Tanzania, *gacaca* courts tried more than 1 million ordinary people who served as the foot soldiers of the genocide.

Relying on dozens of interviews, quantitative analysis of data on genocide crime prisoners, and firsthand observations of *gacaca* court proceedings in four regions of Rwanda, Anuradha Chakravarty's new book suggests that the reality of *gacaca* is much more complicated. In "Investing in Authoritarian Rule: Punishment and Patronage in Rwanda's Gacaca Courts for Genocide Crimes," Chakravarty offers a detailed and nuanced look at the ways that Rwanda's ruling party used the courts to build its own legitimacy, as well as the ways that participants in the courts viewed their role in punishing the guilty through the *gacaca* process.

Her findings are unsettling and suggest that the *gacaca* process was far more political and much less conciliatory than the casual observer might want to believe. Chakravarty's central argument is that Rwanda's ruling party, the Tutsi-dominated Rwandan Patriotic Front (RPF), used *gacaca* courts as a tool of patronage to build the new, post-genocide government's legitimacy, which in turn allowed the RPF to entrench its rule into the virtually unchallenged authoritarian system in Rwanda today.

Chakravarty convincingly demonstrates that the RPF's post-genocide consolidation of power in Rwanda evolved based on the cooperation of individual Hutus, who constitute the vast majority of Rwanda's population and many of whom had committed genocide crimes. While the early RPF consolidation of power "depended on the use of blatant force through killings and arbitrary arrests," as time passed a system of mutual benefit developed between the RPF and the majority Hutu population it sought to rule. Writes Chakravarty:

In denouncing others, submitting self-incriminating confessions, and judging their friends and co-ethnics, thousands upon thousands of individual Hutu acted upon and enforced RPF rules, reinforcing the regime with their cooperation in exchange for reduced sentences, security guarantees, the possibility of private gains in the form of personal vengeance or economic windfalls, and opportunities to access public power and social prestige. The RPF unleashed a stream of individualized benefits and sanctions that made "opportunistic investors" of ordinary Hutu who backed RPF rule in their own interests.

Thus it was that through the strengthening of a form of patronage that provided Hutus with protection from problems and access to opportunities, it was Hutus themselves who built and reinforced the RPF's authoritarian rule, particularly through participation in and performance at the *gacaca* courts.

This incentive-based relationship, though, was not without risks. Because the RPF was the only option for any Hutu seeking to gain better status or avoid worse punishment for crimes, those Hutus had no choice but to work within the RPF's system of patronage, but this did not mean that most Hutus accepted "that the RPF were legitimate rulers with the requisite clean hands."

Importantly, Chakravarty does not argue that the RPF intended this outcome from the *gacaca* process; rather, the social processes of clientelism and increasing authoritarian control evolved over time in response to the incentives that *gacaca* and other post-conflict rebuilding processes set in place. She grounds her findings in a deep understanding of the role patronage relationships have played in Rwandan history and argues that clientelism has always driven relationships between powerful and ordinary actors in Rwanda. Thus, the decision to go along with the *gacaca* proceedings was a case in which "vulnerable individuals implicitly understood that they needed to solicit the protection and good will of this unrivaled patron."

Unfortunately, these incentives led to negative outcomes for many Rwandans, particularly those who were falsely accused of participation in genocide. Chakravarty shows how Rwandans, faced with competing loyalties to different family and clan members alongside the need to demonstrate commitment to the *gacaca* courts, made decisions about whom to denounce and at what times to do so. Fortunately, she finds that "*gacaca* courts had secured some local peace," preventing further violence and limiting the space for disputes to escalate into more dangerous situations. That limited space is a double-edged sword, however, as authoritarian control is essential to maintaining it.

Chakravarty's findings suggest the need for much more scholarly work on the "tacit bargains" that govern relations between elites and mass publics in the aftermath of atrocity crimes; as she notes, the bargain expressed in and built through the *gacaca* process is not an inter-elite legislative or ruling party bargain, but rather "an informal elite-mass social contract that consolidated the new order by tying the new elites to their social constituents, and demonstrating to them ('clients') the benefits of cooperating with and advancing within the system." Of particular interest is a question Chakravarty raises in the context of comparison with Nazi Germany's postwar accountability and justice processes: the ways that individual citizens having a choice of patrons rather than being forced to rely on a sole patron (as in Rwandan) influences outcomes in modern transitional justice processes.

Chakravarty's work is an indispensable read for anyone interested in transitional justice, post-conflict reconciliation or Africa's Great Lakes region. Comments from her subjects on topics ranging from how Hutus and Tutsis perceive the RPF's dominance to whether the *gacaca* courts actually provided justice offer invaluable insight into how ordinary Rwandans think about their relationship to their government and whether reconciliation has really happened since the genocide ended. Chakravarty does not evaluate whether *gacaca* was a success, nor does she claim that *gacaca* was Rwanda's only potential path to authoritarian rule, but her findings should compel more scholars to explore comparative cases in which vulnerable populations might respond to incentives that lead to the consolidation of authoritarian rule in the wake of mass atrocities. **Source:** https://www.washingtonpost.com/news/monkey-/ **Rwanda's gacaca courts are hailed as a post-genocide success. The reality is more complicated** (June 2, 2017)

a) Examine five major advantages of this form of ADR that were professionally handled. [20 marks]

b) What criticisms could be levelled against Rwandan Government over its conduct in Gacaca?

[20 marks]

SECTION B

QUESTION TWO

"In promoting access to justice, the modern civil justice should offer a variety of approaches and options to dispute resolution, citizens should be empowered to find a satisfactory solution to their problem which includes the option of court based litigation but as part of wide menu". Convention and Protection of Human Rights and Fundamental Freedoms. How far do you support this assertion?

QUESTION THREE

Discuss why Alternative Dispute Resolution is not easily implementable in Africa. [20 marks]

QUESTION FOUR

'The African Union (AU) and most of the regional organizations on the continent have a mandate to engage in mediation and other forms of conflict resolution but have dismally failed. 'Critically evaluate this statement. [20 marks]

QUESTION FIVE

ADR represents a fundamentally different approach to conflicts than the traditional justice system model and is also consistent with the kind of paradigm shift from the well- known approaches of traditional justice. (Brynt and Lane 2013) Discuss. [20 marks]

QUESTION SIX

"If I had six hours to chop a tree, I would spend the first four hours sharpening the axe and the remaining two hours chopping the tree." (Abraham Lincoln). Comment this is relation to the process of negotiation. [20 marks]

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THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

2020 ACADEMIC YEAR

FINAL EXAMINATION

MASTER OF SCIENCE & MASTER OF BUSINESS ADMINISTRATION

BLENDED AND EVENING MAY 2020 COHORTS

GSB 5011: CRITICAL THINKING AND SCIENTIFIC WRITING COURSE

TIME: THREE (3) HOURS

DATE: 08 SEPTEMBER 2020

INSTRUCTIONS:

1. THIS EXAMINATION PAPER CONTAINS SEVEN QUESTIONS. QUESTION ONE IS COMPULSORY THEN YOU CAN ANSWER ANY OTHER FOUR QUESTIONS IN WHICH EVER ORDER.
2. EACH QUESTION CONTAINS 20 MARKS.
3. MAKE SURE THE STUDENT NUMBER IS CLEARLY INDICATED ON ALL BOOKLETS TOGETHER WITH THE QUESTIONS ATTEMPTED.
4. THE ANSWER FOR EACH QUESTION SHOULD BEGIN ON A NEW SHEET.
5. WHERE SPECIFIC INFORMATION IS NOT GIVEN, MAKE AND STATE YOUR ASSUMPTIONS.
6. MARKS WILL BE LOST FOR ILLEGIBLE, UNTIDY AND UNORGANISED PRESENTATION.
7. THE EXAMINATION IS STRICTLY CLOSED BOOK.
8. TOTAL MARKS FOR THIS EXAMINATION IS **100** BUT ***CONTRIBUTES 60% TOWARD THE FINAL ASSESSMENT FOR THIS COURSE.[FOR EVENING GROUP]*** AND **100% FOR BLENDED GROUP**

QUESTION ONE [COMPULSORY QUESTION]

Extract from:

M. Mambwe, et al, Construction Subcontracting Policy Framework for Developing Local Contractors Capacities in Zambia, Journal of Construction Business and Management (2020) 4(1). 60-70 63.

While there are ethical issues to be considered in the construction industry, the Transparency International (2005) notes that the industry is classified as the most fraudulent industry worldwide. Studies carried out in various countries such as United States of America (USA) (FMI/CMAA, 2004; Jackson, 2013), Australia (Vee & Skitmore, 2003), South Africa (Pearl, et al., 2005), and Hong Kong (Fan & Fox, 2005) provide evidence that the construction industry is plagued with ethical issues due to its substantial capital investments (Adnan, et al., 2012). Additionally, Adman et al. (2012) stated that unethical practices can take place at every phase of a construction project, during planning and design, pre-qualification and tender, project execution and operation and maintenance. Such practices have been seen to result in projects which when completed, are considered unnecessary, unsuitable, overlay complex components, overpriced or delayed as postulated by Hamzah et al. (2010) Akintan and Morledge (2013) and Dainty et al. (2001). Within the Zambian construction industry, unethical issues arise from SME's tendency of selling their subcontracted portions back to main contractors (Muya & Mukumbwa, 2013).

1.1 Using the critical thinking principles of Intellectual Skills Essential to Close Reading, identify the first 10 main outcomes of close reading skills. (10 marks)

1.2 Read closely the paragraph extracted from the journal. Using the principles of Critical Thinking Intellectual Skills Essential to Close Reading, extract the gist of the paragraph in two sentences, each of which should not exceed 10 words. (10 marks)

[20 Marks]

QUESTION TWO

Journal

International Journal of Public Sector Management

Corporate governance and accountability of state-owned enterprises: Relevance for science and society and interdisciplinary research perspectives

Giuseppe Grossi, Ulf Papenfu , Marie-Soleil Tremblay

ISSN: 0951-3558

Publication date: 11 May 2015

Book

Balanced Scorecard: for State-owned Enterprises: Driving Performance and Corporate Governance
Johnson, Christian C.; Beiman, Irv;
Thompson, John December 2007

Policy Paper

The Corporate Governance of Banks: A Concise Discussion of Concepts and Evidence
Policy Research working Paper
September 2004
https://doi.org/10.1596/1813-9450-3404

Article from conference proceedings

Comparison of the Clients, Consultant and Contractors Perspectives of Pre-Tender Unit Cost Factors in Zambia
Chipulu Chipulu, Erastus Mishengu Mwanaumo, Balimu Mwiya
27-30 September 2018
Protea Hotel, Livingstone, Zambia
Conference theme: *Creating an enabling infrastructure investment environment in Africa*
Conference: The Development and Investment in Infrastructure (DII) Conference Series
Editors: Mwanaumo E, Muleya F, Musonda I and Chiom Okoro

Using the four articles provided above, Show how you can record each of them in-text and in the references using Harvard referencing style. (4x5 mark)

[20 Marks]

QUESTION THREE

4.1 Identify atleast 10 Questions you can ask to discipline your thinking. (10 Marks)

4.2 Argue on what constitutes a Textual Analysis. (5 marks)

4.3 What would you say are the components of an effective argument? (5 marks)

[20 Marks]

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

2020 ACADEMIC YEAR

FINAL EXAMINATION

MASTER OF SCIENCE & MASTER OF BUSINESS ADMINISTRATION

BLENDED AND EVENING NOVEMBER 2020 COHORTS

GSB 5011: CRITICAL THINKING AND SCIENTIFIC WRITING COURSE

TIME: THREE (3) HOURS

DATE: 24 MARCH 2021

INSTRUCTIONS:

1. THIS EXAMINATION PAPER CONTAINS SEVEN QUESTIONS. QUESTION ONE IS COMPULSORY THEN YOU CAN ANSWER ANY OTHER FOUR QUESTIONS IN WHICH EVER ORDER.
2. EACH QUESTION CONTAINS 20 MARKS.
3. MAKE SURE THE STUDENT NUMBER IS CLEARLY INDICATED ON ALL BOOKLETS TOGETHER WITH THE QUESTIONS ATTEMPTED.
4. THE ANSWER FOR EACH QUESTION SHOULD BEGIN ON A NEW SHEET.
5. WHERE SPECIFIC INFORMATION IS NOT GIVEN, MAKE AND STATE YOUR ASSUMPTIONS.
6. MARKS WILL BE LOST FOR ILLEGIBLE, UNTIDY AND UNORGANISED PRESENTATION.
7. THE EXAMINATION IS STRICTLY CLOSED BOOK.
8. TOTAL MARKS FOR THIS EXAMINATION IS 100.

Question One (Compulsory)

Climate Resilience for Hydro Power Projects at Project Development Stage

Michael Kalumbu Nsefu[1], Erastus Mishengu Mwanaumo[2] and Stephen Gumboh[3]

Abstract

One predominant sector which has been cited in the Seventh National Development Plan launched in 2017 by the Zambian government, is the energy sector. This is also in line with the Sustainable Development Goal No.7 regarding infrastructure expansion and the provision of clean energy. Hydropower projects despite being a renewable energy source, it is site-specific which require huge investment and have long gestation periods. These characteristics expose hydropower projects to various uncertainties and risks such as economic, environmental, social, geological, regulatory, political, technological, financial, natural, and safety. The environmental risk is so predominant in this energy sector if not appropriately managed, there is the potential of project failures. One of the risk factors of the environment is climate change. Sustainability has also become a critical and unavoidable issue in hydropower development due to climate change risks. Sustainable development is related to techno-economic development along with preserving the environment. To mitigate this climate change risk, there is a need for a comprehensive and well-designed Risk Management Framework/Model (RMF/RMM) to effectively manage the climate change risks and many others at the project development stage. This is a critical stage as when risk mitigation measures are well managed during feasibility, planning, and procurement, it enables minimization or elimination of these risks impacts on hydropower projects on other project life cycle. Hydropower projects risk planning with the integration of climate-resilient perspective it enhances the designing of infrastructure that has capabilities to resist climate change.

Keywords: *Climate Change, Framework, Hydropower, Impact, Model, Risks*

1.1 Read closely the paragraph extracted from the journal. Using the principles of Critical Thinking Intellectual Skills Essential to Close Reading, abstract a three-sentence paragraph with each sentence not exceed 10 words. (10 marks)

1.2 Provide a summarised **postgraduate research proposal format** approved by the University of Zambia. (10 Marks).

[20 Marks]

Question Two

2.1 Compare and contrast Intellectual Discipline to Intellectual Self Command. (12 Marks)

2.2 Identify the eight steps that one carries out in critical thinking. (8 Marks).

[20 Marks]

Question Three

All ethical systems are designed to ensure trust, and with trust, the cooperation and collaboration necessary to ensure prosperity and survival. **Identify** and **discuss (using illustrations and examples)** the four values that are required in ensuring trust in the community. (4 x 5 Marks)

[20 Marks]

Question Four

Explain by providing examples on how you would apply the Cognitive Domain:

4.1 In improving Communication skills; (6 Marks).

4.2 In Finance and Investment; (6 Marks).

4.3 When applying it to Total Quality Management. (8 Marks).

[20 Marks]

Question Five

Using the critical thinking principles of Intellectual Skills Essential to Close Reading, identify the first 20 main outcomes of close reading and substantive writing skills.

[20 Marks]

Question Six.

6.1 Identify four components of the kind of thinking that highly paid workers will increasingly need to master according to Robert Reich. (4 Marks).

6.2 Identify the Critical Thinking philosophical opinions provided by:

6.2.1 Plato;

6.2.2 Belardo;

6.2.3 Aristotle;

6.2.4 Socrates.

(4 Marks).

6.3 Provide the order of the preliminary pages and formatting style expected in the university Post Graduate research report. (12 Marks).

[20 Marks]

Question Seven.

7.1 Differentiate the variables of weak sense to those of strong sense in Critical thinking.

(8 Marks).

7.2 What are the substantial contents of critical thinking? (6 Marks)

7.3 What is the relationship between content and thinking? Explain (6 Marks)

[20 Marks]

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

2021 ACADEMIC YEAR

FINAL EXAMINATION

MASTER OF SCIENCE & MASTER OF BUSSINESS ADMINISTRATION

BLENDED AND EVENING MAY 2021 COHORTS

GSB 5011: CRITICAL THINKING AND SCIENTIFIC WRITING COURSE

DATE: 28TH SEPTEMBER 2021

TIME: THREE (3) HOURS

INSTRUCTIONS:

1. THIS EXAMINATION PAPER CONTAINS SEVEN QUESTIONS.
2. ALL CONQUESTIONS CARRY EQUAL MARKS **[20 MARKS].**
3. CANDIDATES ARE TO SELECT FIVE (5) QUESTIONS IN WHICHEVER ORDER.
4. THE ANSWER FOR EACH QUESTION SHOULD BEGIN ON A NEW SHEET.
5. MAKE SURE THE STUDENT NUMBER IS CLEARLY INDICATED ON ALL BOOKLETS TOGETHER WITH THE QUESTIONS ATTEMPTED.
6. WHERE SPECIFIC INFORMATION IS NOT GIVEN, STATE YOUR ASSUMPTIONS.
7. MARKS WILL BE LOST FOR ILLEGIBLE, UNTIDY AND UNORGANISED PRESENTATION.
8. THE EXAMINATION IS STRICTLY CLOSED BOOK.
9. TOTAL MARKS FOR THIS EXAMINATION IS **100** BUT **CONTRIBUTES 60% TOWARD THE FINAL ASSESSMENT.**

QUESTION ONE

How would your understanding of the following terminology help your personality?

1.1 Critical position (2 Marks)

1.2 Critical thinking (3 Marks)

1.3 Thinking Map (7 Marks)

1.4 Remembering information (2 Marks)

1.5 Understanding information (2 Marks)

1.6 Applying information (2 Marks)

1.7 Analysing information (2 Marks)

[20 Marks]

QUESTION TWO

2.1 Highlight the key Elements of the typical introduction / Background section of the dissertation that would assist the research build a case for the research study. (10 Marks)

2.2 Provide 10 points overview of the importance of Materials and Methods Chapter in the Dissertation/Thesis (also known as the methodology chapter). (10 Marks)

[20 Marks]

QUESTION THREE

A dissertation/thesis shall be satisfactory as regards format and literary presentation. It shall consist of preliminaries, text and end matter. Indicate the Preliminaries, Text, Margins, and Illustrations' requirements according to the University of Zambia Post Graduate Student Guidelines.

[20 Marks]

QUESTION FOUR

Highlight the key Elements of the typical discussion section when compiling your research report.

[20 Marks]

QUESTION FIVE

5.1 Itemize Some things you can do, to foster your critical thinking skills (5 Marks)

5.2 How can the following principles help you improve your critical thinking skills?

5.2.1 Argument Maps (3 marks)

5.2.2 Concept Maps (3 marks)

5.2.3 Mind Maps (3 marks)

5.2.4 Brain Storming (3 marks)

5.2.5 Language Assessment (3 marks)

[20 Marks]

QUESTION SIX

There are 30 Subheadings that make up the Summarised Postgraduate Research Proposal Format for the University of Zambia. The provisions are the Minimum requirements. Indicate the detailed framework of the Proposal format.

[20 Marks]

QUESTION SEVEN

Highlight 10 Strategies that could be adopted to Becoming More Reasonable.

[20 Marks]

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

END OF SEMESTER EXAMINATION

COURSE: GSB5012 ECONOMICS GLOBAL AND FIRM PERSPECTIVES

DATE: MONDAY SEPTEMBER 20, 2021

VENUE: DRGS LECTURE ROOM II

TIME: 09:00 – 12:00 HOURS

INSTRUCTIONS:

1. This paper comprises two sections, A and B.
2. Section A: This section has three questions; you are **REQUIRED** to **ONLY ANSWER ONE QUESTION.** The one question to be answered carries **40 marks.** This means, Section A carries **40 marks.**
3. Sections B: Answer **THREE** questions from this section. Each question answered carries **20 marks.** Therefore, Section be carries **60 marks in total.**
4. This examination paper carries a total of **100 marks**.
5. Exam marks shall be awarded for orderly presentation of work.
6. Candidates must **not turn this page** until the invigilator tells them to do so.
7. This question paper has **three pages including the front page**
8. **You are required to religiously adhere to ALL the University of Zambia Examination Regulations and Guidelines during this examination.**

SECTION A – 40 MARKS: ANSWER ONLY ONE (1) QUESTION

1. You have been invited as a Keynote Speaker at a Capacity Building Workshop for newly appointed Cabinet Ministers and Serving Permanent Secretaries. You are required to prepare a presentation titled:

   "Nature and Scope of Managerial Economics and Why the Knowledge of Managerial Economics is Important in the Formulation and Execution of Government Policies."

   [40 Marks]

2. Having completed a course, GSB5012 Economics Global and Firm Perspectives, you are invited to present a lecture to the newly elected Members of Parliament, a capacity building lecture, in Managerial Economics on the topic:
   "Understanding the Detailed Account of the Tools and Techniques of Decision Making"

   Please prepare your presentation

   [40 Marks]

3. You are invited by the newly appointed Economic Advisor to the President to make a presentation titled:

   The Nexus Between Zambia's Current Macroeconomic Fundamentals and the Realisation of the Vision 2030 – To be a Prosperous Middle Income Country by the Year 2030.

   You are required to prepare the said presentation.

   [40 Marks]

SECTION B – 60 MARKS: ANSWER ANY THREE (3) QUESTIONS

4. Discuss the significate of having a sound knowledge and understanding of the law of demand demand function, and determinants of demand by the Board of Directors of the Industrial Development Company (IDC) and Top Management running various IDC corporations/companies. **[20 Marks]**

5. With the aid of respective graphs, discuss the five (5) major types of Price Elasticity of Demand **[20 Marks]**

6. With the aid of respective graphs, discuss the five (5) major types of Income Elasticity of Demand. **[20 Marks]**

7. As a Graduate of the leading Graduate School of Business in Zambia, prepare an abstract of the paper to be presented at the 2021 National Economic Summit to be held by the Economics Association of Zambia focusing on assessing the various debt management options of Zambia's External Debt (Bilateral Debt, Multilateral Debt, and Eurobonds). The Presentation should also include the key benefits of attaining debt sustainability levels prescribed by the World Bank and the International Monetary Fund (IMF). **[20 Marks]**

8. Zambia has been attempting to get to get the International Monetary Fund (IMF) bailout package to assist it in Restoring Growth and Safeguarding Livelihoods through Macroeconomic Stability, Economic Diversification and Debt Sustainability. What advice would you give the newly-elected Government on this matter? **[20 Marks]**

9. The African Continental Free Trade Area (AfCFTA) is a free trade area founded in 2018 by the 54 of 55 Member States of the African Union, and was operationalized in January 2021. Critically provide an assessment of the benefits and challenges for Zambia as a member of AfCFTA. **[20 Marks]**

10. Prepare a policy paper on the need for Members of Parliament to understand the Impossible Trinity in Economics. **[20 Marks]**

11. With the aid of a diagram/graph, demonstrate your understanding of the Break-Even-Point. Further discuss why managers should have a clear knowledge of the significance and limitations of break point in their decision making. **[20 Marks]**

END OF EXAM

BEST WISHES

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

POSTGRADUATE SESSIONAL EXAMINATIONS

RESEARCH METHODS – GSB 5021

MAY 2019 COHORT (BLENDED AND EVENING MODES)

DATE: 08 JULY 2020 **DURATION: 3 HOURS**

INSTRUCTIONS

- Answer **ALL** the questions in **SECTION A**
- Choose **THREE** questions from **SECTION B**
- Use clearly labelled diagrams to illustrate your examples

SECTION A: COMPULSORY QUESTION

Read the following case study and answer **ALL** questions below.

University of Zambia, based in the Lusaka Province of Zambia, has gained an excellent reputation for its postgraduate courses. As a result, in recent years the University has attracted a large number of international postgraduate students. The fees paid by these students make an important contribution to the University's annual budgeted income. To support the recruitment of international students, the University has established a small department to promote its courses abroad and to liaise with education institutions in key countries.

However, this year there has been a noticeable reduction in the number of applications from international students. The University authorities are unsure if this is because of the global economic downturn attributed by the COVID pandemic, or if there are other factors causing this reduction. They have decided to conduct research to investigate how studying at the University of Zambia is now perceived by potential students and by key groups of opinion formers, such as education bodies and major employers. It has commissioned quantitative research to be carried out in the 3 countries which have, until now, represented the largest international markets for the University (Zimbabwe, Malawi, Tanzania and Angola).

Your research agency, which has offices in each of the target countries, has won the contract for the project. The agency proposes to carry out a phase of desk research in order to inform the development of a questionnaire. It will then conduct a telephone survey using CATI (computer-assisted telephone interviewing), with each office taking responsibility for carrying out the fieldwork in its own country. The results will then be fed back to the agency's central office in Lusaka for analysis. The University has given a deadline of 3 months for the completion and reporting of the research.

QUESTION 1

a) Discuss 5 types of secondary data that could be useful to inform the development of the questionnaire. **[10 marks]**

b) Expound on the advantages of conducting fieldwork separately in each of the countries concerned compared to the advantages of conducing all the telephone interviews centrally from Zambia. **[10 marks]**

c) Illustrate with an example, the appropriate sampling technique for recruiting respondents from each of populations for this project. **[10 marks]**

d) Describe the factors that should be taken into consideration during sampling. **[5 Marks]**

e) What type of research strategy would be appropriate for this project? **[5 marks]**

[Total Marks= 40]

SECTION B (Answer Any 3 questions from this Section)

QUESTION 2

Your organisation has been asked to carry out a programme of qualitative research for a company that produces battery-powered scooters for transport around city centres. The company wants to know if and how the public's perceptions of its brand have been affected by environmental concerns and increases in fuel prices.

a) Propose 3 approaches of primary data collection by which the information the company requires could be gathered. **[6 marks]**

b) Outline the 3 strengths and 3 limitations of each approach you proposed. **[6 marks]**

c) Select one of the approaches you have proposed and describe in detail the steps you would take from the research design stage onwards to ensure that it produces the type of information that the company requires. **[8 marks]**

[Total Marks = 20 marks]

QUESTION 3

You are an Insight Manager for a leading confectionery manufacturer. A new member of the production team has prepared a research brief. You feel that the research topic and objectives within the brief are unclear, and you have been asked to provide some feedback for the team member before he amends the brief and sends it to the research agency.

a) Demonstrate to your team member by discussing 4 criteria for a good scientific research. **[8 marks]**

b) Using examples, discuss the steps that you would expect the team member to take in order to ensure that the research objectives set out in the brief fully address the research needs. **[12 marks]**

[Total Marks = 20 marks]

QUESTION 4

Five years ago, a Government organisation responsible for health promotion conducted a major research study to investigate attitudes to healthy eating among young people aged 18-24 years. The study involved both quantitative and qualitative primary studies among students at five universities across Zambia. The quantitative research took the form of a self-completion pen and paper questionnaire. The qualitative research comprised a series of traditional, face-to-face

group discussions. The organisation now wishes to carry out a review on research conducted on the same topic in other countries.

a) Discuss the appropriate method that the organization should take when reviewing studies from other countries. **[5 marks]**

b) With the aid of a diagram, describe four analysis tasks that the organization should consider when conducting a literature review. **[8 marks]**

c) Outline five common approaches that the organization should take into consideration when organising the body of the paper (reviewing other studies). **[5 marks]**

d) Propose two factors that should be considered at the planning stage of literature reviewing. **[2 marks]**

[Total Marks = 20 marks]

QUESTION 5

You have recently been employed as Head of Research at Zambia National Building Society. The organization is conducting studies on land distribution among Zambians for the purpose of understanding preferences. As a Head of Research, your Chief Executive Officer (CEO) has tasked you to develop a conceptual framework in order to understand the variables for consideration in the study.

a) Propose the stages for developing the conceptual framework for this study. **[5 marks]**

b) Describe five points you should consider when developing the theoretical framework for this study. **[5 marks]**

c) Having considered the questions above, design the conceptual framework for this study. **[10 marks]**

[Total Marks = 20 marks]

QUESTION 6

The Graduate School of Business has proposed dates for proposal presentations and you are one of the presenters. The presentation duration is scheduled for 10 minutes. Using a topic of your choice, illustrate precisely the ingredients of your research proposal. **[20 marks]**

[Total Marks = 20 marks]

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

POSTGRADUATE SESSIONAL EXAMINATIONS

RESEARCH METHODS – GSB 5021

MAY 2020 COHORT (BLENDED AND EVENING MODES)

DATE: 10 SEPTEMBER 2020 **DURATION: 3 HOURS**

INSTRUCTIONS

- Answer **ALL** the questions in **SECTION A**
- Choose **THREE** questions from **SECTION B**
- Use clearly labelled diagrams to illustrate your examples

SECTION A: COMPULSORY QUESTION

Read the following case study and answer **ALL** the questions below.

Your friend is doing his Master's dissertation. Because many companies have recently started to engage in sustainability activities, she is interested in knowing how consumers award sustainability with a more favourable attitude and/or behaviour. She has seen a recent study from the US conducted by Hartmann et al. (2013) and would like to know if the consumers in Zambia are similar. Hartmann et al. conducted an experiment with two groups to test the effect of companies' sustainability activities on consumers' attitude and behaviour. After the "treatment" the two groups of respondents filled out a questionnaire with a number of questions about their attitude and their behaviour and some control variables. Hartmann's study was based on a representative sample (in terms of age, gender and employment situation) of 1000 US inhabitants.

Your friend wants to replicate this study in the Zambian context and is thinking about the sample size. She is doing some part-time work at Greenpeace. So she approached her line manager about using employees as a sample since they are all consumers at the same time and they should be experts when it comes to sustainability activities, but her manager was reluctant to give permission. Nevertheless, she e-mailed the experimental treatment and the questionnaire to some colleagues (using the work e-mail) and has succeeded in getting thirty questionnaires completed through this method. Since these answers only represented the first group of the experiment, she felt that this did not give her a large enough sample, so she tried approaching people sitting in coffee bars at lunch time and made a face-to-face interview with them to fill up the second group. She succeeded in getting a further thirty-five questionnaires completed this way. Finally, she posted her questionnaire on Facebook and encouraged her friends to fill it in trying to add more respondents for experimental group one and some for experimental group two. She had forty completed questionnaires through this source. So overall she has 105 usable questionnaires 51 in group one and 54 in group two. She has input the data from all of these on to an Excel spread sheet to later transfer it to SPSS.

Here are some of the answers she got. And by the way your friend thought the initial questions from Hartmann et al. were too academic, so she adapted them to make them shorter and easier to answer for the respondents. The number of responses are received to each answer are in brackets (N=105).

1. Do you think sustainability is important?

Group 1:	Yes (51)	No (0)
Group 2:	Yes (49)	No (5)

2. Would you be willing to pay more for products that have sustainable attributes?

Group 1:	Yes (38)	No (3)	Blank (10)
Group 2:	Yes (35)	No (15)	Blank (2)

3. For those respondents, who answered yes to question 2: How much would you be willing to pay more?

Group 1:	**Group 2:**
1% more (28)	1% more (27)
2% more (3)	2% more (3)
3% more (2)	3% more (1)
5% more (0)	5% more (2)
10% more (2)	10% more (0)
Blank (3)	Blank (2)

Your friend was pleased to have completed her data collection. However, when she had a talk with her supervisor she was told that her data collection was inadequate. Certainly if she wanted to compare her data to those in the US survey by Hartmann et al she would need to re-do her survey. Also she found that the answer she got, does not really give her a clear picture, everybody thinks that sustainability is important, so companies should definitely do something about it, but she was also surprised that so many did not answer some of the questions. Showing her results to a colleague at Greenpeace, the colleague said that she is not surprised about the results.

a) Why do you think your friend's supervisor thought her data collection was inadequate? **[5]**

b) What errors do you feel she made in identifying and accessing her sample? **[5]**

c) Why do you think her supervisor said that she could not compare her data with those in the Hartmann et al. survey? **[5]**

d) Explain the procedure your friend should use in conducting this experiment. **[10]**

e) What statistical procedure can be used to analyse data of this experiment? **[5]**

f) What kind of scale was used? **[5]**

g) Why do you think some respondents have left out to answer some questions? **[5]**

[Total Marks= 40]

SECTION B (Answer Any 3 questions from this Section)

QUESTION 2

The development and implementation of policies by the Governments is guided by research. As a result, research has taken a key role in many governance and management practices and activities. Uto Research Academy (URA) is engaged in a number of research projects with public and private institutions. The role of URA is to train research assistants and conduct research for these institutions.

Using a schematic diagram, present to the public and private institutions the research process. **[20]**

[Total Marks = 20]

QUESTION 3

The process of data analysis is an important stage in research methodology. This stage should be considered during the process of designing a literature review matrix. As a qualitative research analyst;

a) Demonstrate with the aid of a diagram, the process of data analysis in qualitative research. **[10]**
b) Outline five types of themes in exploratory analysis method. **[5]**
c) Describe the role of constant comparative method **[5]**

[Total Marks = 20]

QUESTION 4

Neo Research Centre (NRC) is conducting a study on the factors that influence youths to participate in Sustainable Development Programmes. The research study will be conducted using the qualitative research approach in which different research strategies will be used. For this project, you have been appointed as the Lead Research Associate.

a) Outline four research strategies applicable for this research approach. **[4]**
b) Using examples, briefly explain each outlined research strategy to your research assistants. **[16]**

[Total Marks = 20]

QUESTION 5

An educational researcher is interested in the relationship between students' participation in two after school programs and academic achievement. She states the following hypothesis in the description of her study:

H.1: Children who participate in an after school program that emphasizes critical thinking skills will score higher on measures of academic achievement and self-esteem than students who participate in a program that emphasizes rote memorization.

a) Outline the variables in this study [4]

b) Propose good names for these variables [6]

c) Identify the independent variable(s) and dependent variable(s). [4]

d) Describe how each variable varies (i.e., whether the variable is categorical or continuous). [3]

e) Provide justification for why each variable varies the way you describe? [3]

[Total Marks = 20]

QUESTION 6

The Graduate School of Business has proposed dates for proposal presentations and you are one of the presenters. The presentation duration is scheduled for 10 minutes. Using a topic of your choice, illustrate precisely the ingredients of your research proposal. **[20]**

[Total Marks = 20]

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

POSTGRADUATE SESSIONAL EXAMINATIONS

RESEARCH METHODS – GSB 5021

NOV 2020 COHORT (BLENDED AND EVENING MODES)

DATE: 24TH MARCH 2021 **DURATION: 3 HOURS**

INSTRUCTIONS

- Answer **ALL** the questions in **SECTION A**
- Choose **THREE** questions from **SECTION B**
- Use clearly labelled diagrams to illustrate your examples

SECTION A: COMPULSORY QUESTION

It seems that when we make a conscious effort not to think about something specific, we can't help but think of it! Researchers investigated this using a self-report. Participants were instructed, "Do not think of a white bear". Each participant was studied for a period of five minutes during which time they had to say aloud what they were thinking.

Following this, a short interview was conducted with each participant to ask them some questions about how they felt about the task. The findings are presented in Table 1.

Table 1: Findings from Short Interview

Participants	**Number of times, thoughts about a white bear were reported during the a five minute period**
1	8
2	14
3	2
4	15
5	16
6	12
7	21
8	11
9	7
10	10

a) Outline four findings from the data in this table. [8]

b) Describe how an appropriate descriptive statistic could be used with the data in this table. [6]

c) Give two strengths and two weaknesses of the descriptive statistic you mentioned in the above question. [8]

d) Outline two strengths and two weaknesses of having qualitative data in this study. [8]

e) Discuss the validity of using open questions in this study. [6]

f) How might social desirability be an issue in this study? [4]

[Total Marks= 40]

SECTION B (Answer Any 3 questions from this Section)

QUESTION 2

The theoretical and conceptual framework is an important chapter in the Research Thesis or Dissertation. In order to enforce this chapter to students, the coordinate of the Programme has tasked you to demonstrate using a schematic diagram, the significance of the conceptual framework to the design of a research proposal.

[20]

[Total Marks = 20]

QUESTION 3

a) Describe the similarities and differences between grounded theory and ethnographic research designs. **[10]**

b) Discuss the relevance of a pilot study **[5]**

c) Explain the role of the constant comparative method. **[5]**

[Total Marks = 20]

QUESTION 4

Zivo Research Centre (ZRC) is conducting a study on the factors that influence youths to participate in Sustainable Development Programmes. The research study will be conducted using the qualitative research approach in which different research strategies will be used. For this project, you have been appointed as the Lead Research Associate.

a) Describe three types of sampling techniques that you will use in this study. **[9]**

b) Discuss any two appropriate data collection methods for the study. **[6]**

c) How will the study ensure the validity of the collected data? **[5]**

[Total Marks = 20]

QUESTION 5

Research approaches are divided into qualitative, quantitative, and mixed methods.

a) Expound on Mixed Methods Approach **[8]**

b) Describe the purpose of conducting a quantitative research. **[4]**

c) Using an example of your choice, propose a topic and aim for a research that can take a quantitative approach. **[4]**

d) For this particular topic, describe the scope of the research. [4]

[Total Marks = 20]

QUESTION 6

Graduate School of Business has proposed dates for proposal presentations and you are one of the presenters. The presentation duration is scheduled for 10 minutes. Using a topic of your choice, illustrate precisely the ingredients of your research proposal. **[20]**

[Total Marks = 20]

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

POSTGRADUATE SESSIONAL EXAMINATIONS

RESEARCH METHODS – GSB 5021

MAY 2019 COHORT (BLENDED AND EVENING MODES)

DATE: 08 JULY 2020 **DURATION: 3 HOURS**

INSTRUCTIONS

- Answer **ALL** the questions in **SECTION A**
- Choose **THREE** questions from **SECTION B**
- Use clearly labelled diagrams to illustrate your examples

SECTION A: COMPULSORY QUESTION

Read the following case study and answer **ALL** questions below.

University of Zambia, based in the Lusaka Province of Zambia, has gained an excellent reputation for its postgraduate courses. As a result, in recent years the University has attracted a large number of international postgraduate students. The fees paid by these students make an important contribution to the University's annual budgeted income. To support the recruitment of international students, the University has established a small department to promote its courses abroad and to liaise with education institutions in key countries.

However, this year there has been a noticeable reduction in the number of applications from international students. The University authorities are unsure if this is because of the global economic downturn attributed by the COVID pandemic, or if there are other factors causing this reduction. They have decided to conduct research to investigate how studying at the University of Zambia is now perceived by potential students and by key groups of opinion formers, such as education bodies and major employers. It has commissioned quantitative research to be carried out in the 3 countries which have, until now, represented the largest international markets for the University (Zimbabwe, Malawi, Tanzania and Angola).

Your research agency, which has offices in each of the target countries, has won the contract for the project. The agency proposes to carry out a phase of desk research in order to inform the development of a questionnaire. It will then conduct a telephone survey using CATI (computer-assisted telephone interviewing), with each office taking responsibility for carrying out the fieldwork in its own country. The results will then be fed back to the agency's central office in Lusaka for analysis. The University has given a deadline of 3 months for the completion and reporting of the research.

QUESTION 1

a) Discuss 5 types of secondary data that could be useful to inform the development of the questionnaire. **[10 marks]**

b) Expound on the advantages of conducting fieldwork separately in each of the countries concerned compared to the advantages of conducing all the telephone interviews centrally from Zambia. **[10 marks]**

c) Illustrate with an example, the appropriate sampling technique for recruiting respondents from each of populations for this project. **[10 marks]**

d) Describe the factors that should be taken into consideration during sampling. **[5 Marks]**

e) What type of research strategy would be appropriate for this project? **[5 marks]**

[Total Marks= 40]

SECTION B (Answer Any 3 questions from this Section)

QUESTION 2

Your organisation has been asked to carry out a programme of qualitative research for a company that produces battery-powered scooters for transport around city centres. The company wants to know if and how the public's perceptions of its brand have been affected by environmental concerns and increases in fuel prices.

a) Propose 3 approaches of primary data collection by which the information the company requires could be gathered. **[6 marks]**

b) Outline the 3 strengths and 3 limitations of each approach you proposed. **[6 marks]**

c) Select one of the approaches you have proposed and describe in detail the steps you would take from the research design stage onwards to ensure that it produces the type of information that the company requires. **[8 marks]**

[Total Marks = 20 marks]

QUESTION 3

You are an Insight Manager for a leading confectionery manufacturer. A new member of the production team has prepared a research brief. You feel that the research topic and objectives within the brief are unclear, and you have been asked to provide some feedback for the team member before he amends the brief and sends it to the research agency.

a) Demonstrate to your team member by discussing 4 criteria for a good scientific research. **[8 marks]**

b) Using examples, discuss the steps that you would expect the team member to take in order to ensure that the research objectives set out in the brief fully address the research needs. **[12 marks]**

[Total Marks = 20 marks]

QUESTION 4

Five years ago, a Government organisation responsible for health promotion conducted a major research study to investigate attitudes to healthy eating among young people aged 18-24 years. The study involved both quantitative and qualitative primary studies among students at five universities across Zambia. The quantitative research took the form of a self-completion pen and paper questionnaire. The qualitative research comprised a series of traditional, face-to-face

group discussions. The organisation now wishes to carry out a review on research conducted on the same topic in other countries.

a) Discuss the appropriate method that the organization should take when reviewing studies from other countries. **[5 marks]**

b) With the aid of a diagram, describe four analysis tasks that the organization should consider when conducting a literature review. **[8 marks]**

c) Outline five common approaches that the organization should take into consideration when organising the body of the paper (reviewing other studies). **[5 marks]**

d) Propose two factors that should be considered at the planning stage of literature reviewing. **[2 marks]**

[Total Marks = 20 marks]

QUESTION 5

You have recently been employed as Head of Research at Zambia National Building Society. The organization is conducting studies on land distribution among Zambians for the purpose of understanding preferences. As a Head of Research, your Chief Executive Officer (CEO) has tasked you to develop a conceptual framework in order to understand the variables for consideration in the study.

a) Propose the stages for developing the conceptual framework for this study. **[5 marks]**

b) Describe five points you should consider when developing the theoretical framework for this study. **[5 marks]**

c) Having considered the questions above, design the conceptual framework for this study. **[10 marks]**

[Total Marks = 20 marks]

QUESTION 6

The Graduate School of Business has proposed dates for proposal presentations and you are one of the presenters. The presentation duration is scheduled for 10 minutes. Using a topic of your choice, illustrate precisely the ingredients of your research proposal. **[20 marks]**

[Total Marks = 20 marks]

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Masters Final Examination

Thursday 9th July, 2020

GSB 5031: FINANCE FOR MANAGERS

Instructions

Time Allowed: **3 hours**

There are two sections in this paper, A and B. Section A is compulsory.

Section B consist of four questions and you are required to attempt any two questions.

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

SECTION A: COMPULSORY (ANSWER BOTH QUESTIONS)

QUESTION ONE

WIELD plc is considering procuring a new machine in order to produce a new product called 'VuVe'. The machine will cost K2.5million and is expected to last for 4 years at which time it will have an estimated scrap value of K400,000. They expect to produce 119,000 units per year of 'VuVe' which will be sold for K25 per unit in the first year. Production costs per unit (at current prices) are as follows:

Materials K9
Labour K8

Materials are expected to increase by 7% per year and labour will increase by 5% per year. Annual fixed overheads of the company are estimated to amount to K1million after the investment. The management accountant has determined that 10% of these are directly attributed to the investment in the new machine. WIELD Plc expects the selling price of the product to increase by 9% annually. An additional K250, 000 of working capital will be required at the start of the project. The minimum expected rate of return by investors from the project is 10%. The corporate tax is 30% per year.

Required

a) Calculate the NPV of the project and advise as to whether or not it should be accepted. (12marks)
b) Calculate the internal rate of return of the project and advise as to whether or not it should be accepted. (7marks)
c) Explain the concept of time value of money in the context of finance. (6marks)

[Total: 25 marks]

QUESTION TWO

The following extract financial information relates to COV Inc. over the two years:

Year	2019	2018
Current ratio	2.2: 1	1.3: 1
Quick ratio	1.68: 1	1.08: 1
Inventory turnover	5 times	8 times
Receivables period	91 days	55 days
Payables period	64 days	118 days

The shareholders of the company are worried about its working capital management. As a Managing Director, one of the institutional shareholder has called you to make a quick comment on the situation.

Required:

a) Based on the financial information provided above for COV Inc., comment on the working capital management of the company. *(9 marks)*
b) The following financial ratios are used to assess the performance and financial position of a company:
   i) ROCE
   ii) Inventory turnover
   iii) Net Profit Margin
   iv) Earnings Per Share

v) Dividend Cover

Explain the meaning of each ratio stated above. *(10 marks)*

c) Explain the difference between accounting profit and cash. *(6 marks)*

[Total: 25 marks]

SECTION B: CHOOSE ANY TWO QUESTIONS

QUESTION THREE

a) Discuss any three (3) factors that may affect the dividend policy of a listed company. *(6marks)*

b) Discuss whether you agree or not that cash accounting is more informative than accruals accounting. *(5marks)*

c) Identify the different users of financial information and explain their respective interests. *(6marks)*

d) Explain any four (4) fundamental assumptions underlying the preparation of financial statements and their implication. *(8marks)*

[Total: 25 marks]

QUESTION FOUR

a) Explain the meaning of breakeven point for an activity and discuss the usefulness of knowing the breakeven point by managers. *(12 marks)*

b) NKB Ltd makes chairs. The fixed costs of operating the workshop for a month total K150, 000. Each chair requires materials that cost K125. Each basket takes one hour to make, and the business pays the workers K135 an hour. The workers are all on contracts such that if they do not work for any reason, they are not paid. The chairs are sold to a wholesaler for K500 each.

i) If budgeted sales and production are 1,100 chairs per month, what is the budgeted profit (or loss) for the year? You should use marginal costing approach.

ii) What is the annual breakeven point (in units)?

iii) What is the breakeven revenue?

iv) How many units need to be sold to achieve a target profit of K2million per year?

v) What is the margin of safety in percentage (%)? Comment on the results.

(13 marks)

[Total: 25 marks]

QUESTION FIVE

The Chief Financial Officer and Marketing Director of NK International are discussing three approaches to pricing their products, namely cost based, customer based and competition based. The company budgets to make 25,000 units per year which has a variable cost of production of K55 per unit. Fixed production costs are K600, 000 per annum.The Chief financial Officer has recommended the cost based approach and stated that if the selling price is to be 35% higher than full cost the company will maximize its profit.

Required

a) Determine the selling price of the product using the full cost-plus method and discuss which of the pricing approaches discussed is most likely to maximize profits for NK international. *(11 marks)*

b) With the aid of diagrams, explain the difference between fixed costs, semi-variable costs, stepped fixed cost and variable cost. *(8 marks)*

c) Explain the usefulness of a budget to a Manager in an organisation. *(6 marks)*

[Total: 25 marks]

QUESTION SIX

a) MMN Ltd manufactures three products, PL, RJ and BK. The present net annual income from these is as follows:

	PL	*RJ*	*BK*	*Total*
	K	*K*	*K*	*K*
Sales	50,000	40,000	60,000	150,000
Less variable costs	30,000	25,000	35,000	90,000
Contribution	20,000	15,000	25,000	60,000
Less fixed costs	17,000	18,000	20,000	55,000
Profit/ (loss)	3,000	(3,000)	5,000	5,000

The company is considering whether or not to cease selling RJ. It is felt that selling prices cannot be raised or lowered without adversely affecting net income. K5,000 of the fixed costs of RJ are direct fixed costs which would be saved if production ceased. All other fixed costs would remain the same. MMN Ltd exports some of its products to the neighbouring countries and is worried about the foreign currency risk.

b) Suppose, however, that it were possible to use the resources released by stopping production of RJ to produce a new item, MIM, which would sell for K51, 000 and incur variable costs of K30, 000 and extra direct fixed costs of K6, 000.

Required

i) Consider whether the company should cease production and sale of RJ under each of the scenarios in (a) and (b) above. (12 marks)

ii) Discuss factors that should be considered before the decision of whether to cease the production of RJ is made. (8 marks)

iii) State any five (5) ways in which MMN Ltd may protect itself against foreign currency risk. (5 marks)

[Total: 25 marks]

END OF PAPER

Formula

$$IRR = L\% + \frac{NPV_L}{NPV_L - NPV_H} (H\% - L\%)$$

Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where r = discount rate
n = number of periods until payment

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	0·980	0·961	0·943	0·925	0·907	0·890	0·873	0·857	0·842	0·826	2
3	0·971	0·942	0·915	0·889	0·864	0·840	0·816	0·794	0·772	0·751	3
4	0·961	0·924	0·888	0·855	0·823	0·792	0·763	0·735	0·708	0·683	4
5	0·951	0·906	0·863	0·822	0·784	0·747	0·713	0·681	0·650	0·621	5
6	0·942	0·888	0·837	0·790	0·746	0·705	0·666	0·630	0·596	0·564	6
7	0·933	0·871	0·813	0·760	0·711	0·665	0·623	0·583	0·547	0·513	7
8	0·923	0·853	0·789	0·731	0·677	0·627	0·582	0·540	0·502	0·467	8
9	0·914	0·837	0·766	0·703	0·645	0·592	0·544	0·500	0·460	0·424	9
10	0·905	0·820	0·744	0·676	0·614	0·558	0·508	0·463	0·422	0·386	10
11	0·896	0·804	0·722	0·650	0·585	0·527	0·475	0·429	0·388	0·350	11
12	0·887	0·788	0·701	0·625	0·557	0·497	0·444	0·397	0·356	0·319	12
13	0·879	0·773	0·681	0·601	0·530	0·469	0·415	0·368	0·326	0·290	13
14	0·870	0·758	0·661	0·577	0·505	0·442	0·388	0·340	0·299	0·263	14
15	0·861	0·743	0·642	0·555	0·481	0·417	0·362	0·315	0·275	0·239	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	0·812	0·797	0·783	0·769	0·756	0·743	0·731	0·718	0·706	0·694	2
3	0·731	0·712	0·693	0·675	0·658	0·641	0·624	0·609	0·593	0·579	3
4	0·659	0·636	0·613	0·592	0·572	0·552	0·534	0·516	0·499	0·482	4
5	0·593	0·567	0·543	0·519	0·497	0·476	0·456	0·437	0·419	0·402	5
6	0·535	0·507	0·480	0·456	0·432	0·410	0·390	0·370	0·352	0·335	6
7	0·482	0·452	0·425	0·400	0·376	0·354	0·333	0·314	0·296	0·279	7
8	0·434	0·404	0·376	0·351	0·327	0·305	0·285	0·266	0·249	0·233	8
9	0·391	0·361	0·333	0·308	0·284	0·263	0·243	0·225	0·209	0·194	9
10	0·352	0·322	0·295	0·270	0·247	0·227	0·208	0·191	0·176	0·162	10
11	0·317	0·287	0·261	0·237	0·215	0·195	0·178	0·162	0·148	0·135	11
12	0·286	0·257	0·231	0·208	0·187	0·168	0·152	0·137	0·124	0·112	12
13	0·258	0·229	0·204	0·182	0·163	0·145	0·130	0·116	0·104	0·093	13
14	0·232	0·205	0·181	0·160	0·141	0·125	0·111	0·099	0·088	0·078	14
15	0·209	0·183	0·160	0·140	0·123	0·108	0·095	0·084	0·074	0·065	15

Annuity Table

Present value of an annuity of 1 i.e. $\frac{1-(1+r)^{-n}}{r}$

Where r = discount rate
n = number of periods

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	1·970	1·942	1·913	1·886	1·859	1·833	1·808	1·783	1·759	1·736	2
3	2·941	2·884	2·829	2·775	2·723	2·673	2·624	2·577	2·531	2·487	3
4	3·902	3·808	3·717	3·630	3·546	3·465	3·387	3·312	3·240	3·170	4
5	4·853	4·713	4·580	4·452	4·329	4·212	4·100	3·993	3·890	3·791	5
6	5·795	5·601	5·417	5·242	5·076	4·917	4·767	4·623	4·486	4·355	6
7	6·728	6·472	6·230	6·002	5·786	5·582	5·389	5·206	5·033	4·868	7
8	7·652	7·325	7·020	6·733	6·463	6·210	5·971	5·747	5·535	5·335	8
9	8·566	8·162	7·786	7·435	7·108	6·802	6·515	6·247	5·995	5·759	9
10	9·471	8·983	8·530	8·111	7·722	7·360	7·024	6·710	6·418	6·145	10
11	10·37	9·787	9·253	8·760	8·306	7·887	7·499	7·139	6·805	6·495	11
12	11·26	10·58	9·954	9·385	8·863	8·384	7·943	7·536	7·161	6·814	12
13	12·13	11·35	10·63	9·986	9·394	8·853	8·358	7·904	7·487	7·103	13
14	13·00	12·11	11·30	10·56	9·899	9·295	8·745	8·244	7·786	7·367	14
15	13·87	12·85	11·94	11·12	10·38	9·712	9·108	8·559	8·061	7·606	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	1·713	1·690	1·668	1·647	1·626	1·605	1·585	1·566	1·547	1·528	2
3	2·444	2·402	2·361	2·322	2·283	2·246	2·210	2·174	2·140	2·106	3
4	3·102	3·037	2·974	2·914	2·855	2·798	2·743	2·690	2·639	2·589	4
5	3·696	3·605	3·517	3·433	3·352	3·274	3·199	3·127	3·058	2·991	5
6	4·231	4·111	3·998	3·889	3·784	3·685	3·589	3·498	3·410	3·326	6
7	4·712	4·564	4·423	4·288	4·160	4·039	3·922	3·812	3·706	3·605	7
8	5·146	4·968	4·799	4·639	4·487	4·344	4·207	4·078	3·954	3·837	8
9	5·537	5·328	5·132	4·946	4·772	4·607	4·451	4·303	4·163	4·031	9
10	5·889	5·650	5·426	5·216	5·019	4·833	4·659	4·494	4·339	4·192	10
11	6·207	5·938	5·687	5·453	5·234	5·029	4·836	4·656	4·486	4·327	11
12	6·492	6·194	5·918	5·660	5·421	5·197	4·988	4·793	4·611	4·439	12
13	6·750	6·424	6·122	5·842	5·583	5·342	5·118	4·910	4·715	4·533	13
14	6·982	6·628	6·302	6·002	5·724	5·468	5·229	5·008	4·802	4·611	14
15	7·191	6·811	6·462	6·142	5·847	5·575	5·324	5·092	4·876	4·675	15

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Masters Final Examination

Friday, 11th September, 2020

GSB 5031: FINANCE FOR MANAGERS

Instructions

Time Allowed: **3 hours**

There are two sections in this paper, A and B. Section A is compulsory.

Section B consist of four questions and you are required to attempt any two questions.

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

SECTION A: COMPULSORY (ANSWER BOTH QUESTIONS)

QUESTION ONE

A Zambian manufacturing company is considering investing in a machinery worth K6.5million to produce a soft drink called 'KiKO' with a market life of four years. The production variable costs are K6 per unit and other overhead variable costs are K2 per unit. The annual incremental fixed costs are K1.65milion. The scrap value of the machinery is estimated to be K3million after tax at end of year four. The company expects to produce and sell 300,000 units per year. The estimated selling price for 'KiKO' is K25 per unit. The selling price and variable expenses are expected to increase annually by 8% and 6% respectively starting from the second year. The project minimum expected rate of return by investor is 12% whereas the average industrial cost of capital is 10%. Corporate tax is 30% per year.

Required

a) Calculate the NPV of the project and advise whether the investment is financially acceptable. *(12 marks)*

b) Calculate the Internal Rate of Return (IRR) of the project and advise whether the investment is financially acceptable. *(7 marks)*

c) State two (3) disadvantages of Payback Period and two (3) advantages of Accounting Rate of Return. *(6 marks)*

[Total: 25 marks]

QUESTION TWO

COV Ltd and T19 Ltd are both engaged in retailing, but they seem to take a different approach. One of them prides itself on personal service and the other on competitive prices. The following financial information relates to the two companies:

Ratio	*COV Ltd*	*T19 Ltd*
Average settlement period for receivables	65 days	24 days
Average settlement period for payables	55 days	49 days
Gross profit margin	45%	20%
Net profit margin	15%	15%
Return on capital employed (ROCE)	30%	24%
Return on equity (ROE)	40%	30%
Inventories turnover period	58 days	29 days

Required:

a) Using the information above, analyse the performance of the two companies and indicate which one prides on personal service and the one which prides on competitive prices. *(13 marks)*

b) Explain any seven (6) fundamental assumptions underlying the preparation of financial statements and their implication. *(12 marks)*

[Total: 25 marks]

SECTION B: CHOOSE ANY TWO QUESTIONS

QUESTION THREE

a) DMJ Industries Ltd makes baskets. The fixed costs of operating the workshop for a month total K8,000. Each basket requires materials that cost K75. Each basket takes one hour to make, and the business pays the basket makers K120 an hour. The basket makers are all on contracts such that if they do not work for any reason, they are not paid. The baskets are sold to a wholesaler for K300 each.

i) Calculate the breakeven point for the business in units and revenue. *(4 marks)*

ii) Calculate the margin of safety (%) and comment. *(4 marks)*

iii) Discuss the usefulness to a manager of knowing the breakeven point. *(7 marks)*

b) Assuming DMJ Industries has spare capacity in that its basket makers have some spare time. An overseas retail chain has offered the business an order for 500,000 baskets at a price of K210 each.

i) Without considering any wider issues, should the business accept the order? (Assume that the business does not rent the machine). *(3 marks)*

ii) Discuss other factors that should be taken into account before the offer from the overseas is accepted. *(7 marks)*

[Total: 25 marks]

QUESTION FOUR

SUN Plc is considering a project requiring investment of K250, 000 in an equipment with a life of five years and a residual value of K40, 000. Annual net cash flows will be K105, 000, K98, 000, K65,000, K51, 000 and K20, 000 for the five years respectively. According to the company policy, a project with the payback period of 2.5 years or less is acceptable. The company has a target accounting rate of return (ARR) of 10%.

Required

i) Calculate the ARR based on average investment and advise whether the investment is financially acceptable. (12 marks)

ii) Calculate the payback period and advise whether the investment is financially acceptable. (7 marks)

iii) Explain the concept of time value of money. (6 marks)

[Total: 25 marks]

QUESTION FIVE

DoDG holding Plc sales three (3) products in three (3) different market sectors in Zambia. In a recent meeting, the Chief Financial Officer and Chief Marketing Officer discussed the pricing aspect of these products.

Product A: The market for this product is highly competitive and the product is ordinary. The major competitors add a profit margin of 15% on the production costs to determine the selling price. The average production costs are K250 per unit which is considered to be very high.

Product B: DoDG Plc controls over 98% of the market share for this product and its competitors are very small. The production costs are K350 per unit and the Chief Financial Officer has advised that a make-up of 30% on full cost should be added.

Product C: The market research recently conducted for this product indicated that most customers are interested in the quality and taste of the product. The average production costs are K250 per unit. Some customers are will to be charged 35% margin of the production costs and others 40% make-up on full cost.

Required

a) Recommend with reasons the appropriate pricing approach that DoDG Plc can adopt for pricing each of the three (3) products. (12 marks)
b) Determine the selling price of each of the three (3) products. (6 marks)
c) Discuss whether management accounting information is more important to an organisation compared with financial accounting information. (7 marks)

[Total: 25marks]

QUESTION SIX

a) Explain the bird in the hand theory and signalling theory in relation to the dividend policy. (6 marks)

b) Explain four types of dividend policies that a listed company can adopt. (8 marks)

c) Explain any two (2) ways in which a company may protect itself against foreign currency risk. *(4 marks)*

d) Explain the benefits of budgeting to you as a manager of an organisation. (7 marks)

[Total: 25 marks]

END OF PAPER

$$IRR = L\% + \frac{NPVL}{NPVL-NPVH}(H\% - L\%)$$

Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where r = discount rate
n = number of periods until payment

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	0·980	0·961	0·943	0·925	0·907	0·890	0·873	0·857	0·842	0·826	2
3	0·971	0·942	0·915	0·889	0·864	0·840	0·816	0·794	0·772	0·751	3
4	0·961	0·924	0·888	0·855	0·823	0·792	0·763	0·735	0·708	0·683	4
5	0·951	0·906	0·863	0·822	0·784	0·747	0·713	0·681	0·650	0·621	5
6	0·942	0·888	0·837	0·790	0·746	0·705	0·666	0·630	0·596	0·564	6
7	0·933	0·871	0·813	0·760	0·711	0·665	0·623	0·583	0·547	0·513	7
8	0·923	0·853	0·789	0·731	0·677	0·627	0·582	0·540	0·502	0·467	8
9	0·914	0·837	0·766	0·703	0·645	0·592	0·544	0·500	0·460	0·424	9
10	0·905	0·820	0·744	0·676	0·614	0·558	0·508	0·463	0·422	0·386	10
11	0·896	0·804	0·722	0·650	0·585	0·527	0·475	0·429	0·388	0·350	11
12	0·887	0·788	0·701	0·625	0·557	0·497	0·444	0·397	0·356	0·319	12
13	0·879	0·773	0·681	0·601	0·530	0·469	0·415	0·368	0·326	0·290	13
14	0·870	0·758	0·661	0·577	0·505	0·442	0·388	0·340	0·299	0·263	14
15	0·861	0·743	0·642	0·555	0·481	0·417	0·362	0·315	0·275	0·239	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	0·812	0·797	0·783	0·769	0·756	0·743	0·731	0·718	0·706	0·694	2
3	0·731	0·712	0·693	0·675	0·658	0·641	0·624	0·609	0·593	0·579	3
4	0·659	0·636	0·613	0·592	0·572	0·552	0·534	0·516	0·499	0·482	4
5	0·593	0·567	0·543	0·519	0·497	0·476	0·456	0·437	0·419	0·402	5
6	0·535	0·507	0·480	0·456	0·432	0·410	0·390	0·370	0·352	0·335	6
7	0·482	0·452	0·425	0·400	0·376	0·354	0·333	0·314	0·296	0·279	7
8	0·434	0·404	0·376	0·351	0·327	0·305	0·285	0·266	0·249	0·233	8
9	0·391	0·361	0·333	0·308	0·284	0·263	0·243	0·225	0·209	0·194	9
10	0·352	0·322	0·295	0·270	0·247	0·227	0·208	0·191	0·176	0·162	10
11	0·317	0·287	0·261	0·237	0·215	0·195	0·178	0·162	0·148	0·135	11
12	0·286	0·257	0·231	0·208	0·187	0·168	0·152	0·137	0·124	0·112	12
13	0·258	0·229	0·204	0·182	0·163	0·145	0·130	0·116	0·104	0·093	13
14	0·232	0·205	0·181	0·160	0·141	0·125	0·111	0·099	0·088	0·078	14
15	0·209	0·183	0·160	0·140	0·123	0·108	0·095	0·084	0·074	0·065	15

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Masters Final Examination

Monday 22nd March, 2021

GSB 5031: FINANCE FOR MANAGERS

Instructions

Time Allowed: **3 hours**

There are two sections in this paper, A and B. Section A is compulsory.

Section B consist of three questions and you are required to attempt any two questions.

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

ECTION A: COMPULSORY (ANSWER BOTH QUESTIONS)

QUESTION ONE

Natalia Ltd is considering a K5.3million investment in the production of COVID vaccine called 'SINVID' with a life pan of four years. The scrap value of the equipment used in the production of SINVID is estimated to be K2million after tax at end of year four. The company has made the following projections:

Variable costs per unit	K9
Annual fixed costs	K1.4million
Selling price per unit	K22
Annual production and sales	250,000 units

The selling price and variable expenses are expected to increase by 8% and 6% respectively from the second year. The project cost of capital is 10%. Corporate tax is 30% per year.

Required

i) Calculate the NPV of the project and advise whether the investment is financially acceptable. (12 marks)

ii) Calculate the Internal Rate of Return (IRR) of the project and advise whether the investment is financia acceptable. (5 marks)

iii) Discuss the merits and demerits of net present value (NPV) compared to payback period and accounting rate of return (ARR). (8marks)

[Total: 25 marks]

QUESTION TWO

The following extract financial information relates to JOVIC Inc. over the two years:

	2019	*2020*
	%	%
Dividend cover	10	1.2
Current Asset ratio	3:1	1:1
Quick ratio	1:1	0.5:1
Gearing ratio	26.5	49.0
Interest cover ratio	14.5 times	1.2 times

The shareholders of the company are worried about its financial performance and position. One of the institutional shareholder who is concerned about receiving the dividend and company solvency has called you to make a quick comment on the situation.

Required:

a) Based on the financial information provided above for JOVIC Inc., comment on the performance an financial position of the company. *(11marks)*

b) Explain any five (5) fundamental assumptions underlying the preparation of financial statements an their implication. *(10marks)*

c) State the purpose of statement of profit or loss, statement of financial position and statement of cash flows. *(4marks)*

[Total: 25 marks]

SECTION B: CHOOSE ANY TWO QUESTIONS

QUESTION THREE

LUV holding Plc sales three (3) products in three (3) different market sectors in Zambia. In a recent meeting, the Chief Financial Officer and Chief Marketing Officer discussed the pricing aspect of these products.

Product A: The market for this product is highly competitive and the product is ordinary. The major competitors add a profit margin of 15% on the production costs to determine the selling price. The average production costs is K250 per unit which is considered to be very high.

Product B: Allover holdings Plc controls over 98.1% of the market share for this product and its competitors are very small. The production costs is K350 per unit and the Chief Financial Officer has advised that a make-up of 35% on full cost should be added.

Product C: The market research recently conducted for this product indicated that most customers are interested in the quality and taste of the product. The average production costs is K200 per unit. Some customer are will to be charged 37% margin of the production costs and others 42% make-up on full cost.

Required

a) Recommend with reasons the appropriate pricing approach that LUV holdings Plc can adopt for pricing each of the three (3) products. (9 marks)

b) Determine the selling price of each of the three (3) products. (5 marks)

c) With aid of diagrams and examples, explain the difference between variables costs, fixed costs and semi-variable costs. (6 marks)

d) State five (5) differences between financial accounting and management accounting. (5 marks)

[Total: 25 marks]

QUESTION FOUR

Darling Plc manufactures baskets for the local market. Assuming Darling Plc has spare capacity in that its basket maker have some spare time. An overseas retail chain has offered the business an order for 4000 baskets at a price of K1,65 each. The fixed costs of operating the workshop for a month total K60,000. Each basket requires materials that co K600. Each basket takes one hour to make, and the business pays the basket makers K1,000 an hour. The basket make are all on contracts such that if they do not work for any reason, they are not paid. The normal price per basket is K2,50

Required

a) Without considering any wider issues, should the business accept the order? (Assume that the business does n rent the machine). (5 marks)

b) Discuss other factors that Darling Plc should consider before accepting or rejecting the offer from the overse customer. (10 marks)

c) In the context of finance, explain the interaction between financing, investment and dividend decisions. (5 marks)

d) Explain the difference between cash and accounting profit. *(5 marks)*

[Total: 25 marks]

QUESTION FIVE

a) Dumbwiza Industries Ltd is specialised in making chairs. The fixed costs of operating the workshop for a mon total K130, 000. Each chair requires materials that cost K135. A chair takes one hour to make, and the compa pays the workers K140 an hour. The workers are all on contracts such that if they do not work for any reas they are not paid. The chairs are sold to the public for K556 per chair. The budgeted sales and production a 1,350 chairs per month.

   i) Explain the meaning of breakeven point analysis. (3 marks)
   ii) Using the marginal approach, calculate the budgeted profit (or loss) for the year. *(4 marks)*
   iii) Calculate the annual breakeven point (in units). *(2 marks)*
   iv) Calculate the breakeven revenue. *(2 marks)*
   v) Calculate the number of units needed to be sold to achieve a target profit of K1million per year. *(2mar*
   vi) Calculate the margin of safety in percentage (%). *(2 marks)*

b) Discuss the usefulness or importance of knowing the breakeven point by managers. *(8 marks)*

c) State any two (2) ways in which Dumbwiza Ltd may protect itself against foreign currency risk. *(2 marks)*

[Total: 25 marks]

END OF PAPER

$$IRR = L\% + \frac{NPV_L}{NPV_L - NPV_H} (H\% - L\%)$$

Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where r = discount rate
n = number of periods until payment

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	0·980	0·961	0·943	0·925	0·907	0·890	0·873	0·857	0·842	0·826	2
3	0·971	0·942	0·915	0·889	0·864	0·840	0·816	0·794	0·772	0·751	3
4	0·961	0·924	0·888	0·855	0·823	0·792	0·763	0·735	0·708	0·683	4
5	0·951	0·906	0·863	0·822	0·784	0·747	0·713	0·681	0·650	0·621	5
6	0·942	0·888	0·837	0·790	0·746	0·705	0·666	0·630	0·596	0·564	6
7	0·933	0·871	0·813	0·760	0·711	0·665	0·623	0·583	0·547	0·513	7
8	0·923	0·853	0·789	0·731	0·677	0·627	0·582	0·540	0·502	0·467	8
9	0·914	0·837	0·766	0·703	0·645	0·592	0·544	0·500	0·460	0·424	9
10	0·905	0·820	0·744	0·676	0·614	0·558	0·508	0·463	0·422	0·386	10
11	0·896	0·804	0·722	0·650	0·585	0·527	0·475	0·429	0·388	0·350	11
12	0·887	0·788	0·701	0·625	0·557	0·497	0·444	0·397	0·356	0·319	12
13	0·879	0·773	0·681	0·601	0·530	0·469	0·415	0·368	0·326	0·290	13
14	0·870	0·758	0·661	0·577	0·505	0·442	0·388	0·340	0·299	0·263	14
15	0·861	0·743	0·642	0·555	0·481	0·417	0·362	0·315	0·275	0·239	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	0·812	0·797	0·783	0·769	0·756	0·743	0·731	0·718	0·706	0·694	2
3	0·731	0·712	0·693	0·675	0·658	0·641	0·624	0·609	0·593	0·579	3
4	0·659	0·636	0·613	0·592	0·572	0·552	0·534	0·516	0·499	0·482	4
5	0·593	0·567	0·543	0·519	0·497	0·476	0·456	0·437	0·419	0·402	5
6	0·535	0·507	0·480	0·456	0·432	0·410	0·390	0·370	0·352	0·335	6
7	0·482	0·452	0·425	0·400	0·376	0·354	0·333	0·314	0·296	0·279	7
8	0·434	0·404	0·376	0·351	0·327	0·305	0·285	0·266	0·249	0·233	8
9	0·391	0·361	0·333	0·308	0·284	0·263	0·243	0·225	0·209	0·194	9
10	0·352	0·322	0·295	0·270	0·247	0·227	0·208	0·191	0·176	0·162	10
11	0·317	0·287	0·261	0·237	0·215	0·195	0·178	0·162	0·148	0·135	11
12	0·286	0·257	0·231	0·208	0·187	0·168	0·152	0·137	0·124	0·112	12
13	0·258	0·229	0·204	0·182	0·163	0·145	0·130	0·116	0·104	0·093	13
14	0·232	0·205	0·181	0·160	0·141	0·125	0·111	0·099	0·088	0·078	14
15	0·209	0·183	0·160	0·140	0·123	0·108	0·095	0·084	0·074	0·065	15

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

Masters Final Examination

Thursday, 30th September, 2021

GSB 5031: FINANCE FOR MANAGERS

INSTRUCTIONS TO CANDIDATES

Time allowed: **3 hours**

There are two sections in this paper, A and B. Section A is compulsory.

Section B consists of four questions and you are required to attempt any two questions.

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

QUESTION ONE (COMPULSORY)

Western Star Landscape Ltd. Is evaluating the purchase of a new machine that would enhance its existing operation. The details of its cashflows are are given in the table below.

	New Machine
Purchase price	K100,000
Maintenance expense	K2000 p.a.
Life remaining	5 years
Revenue	K60,000 p.a.
Operating costs	K20,000 p.a.
Depreciation	K30,000 p.a.
Salvage value in year 5	K10,000
Investment allowance	5%

If the tax rate is 40% and the after-tax required rate of return is 12%, should the firm buy the new machine today? **(15 Marks)**

(B) Discuss and critically evaluate the following capital budgeting techniques.

(i) Net present value. **(4 Marks**

(ii) Payback period. **(3 Marks)**

(iii) Profitability index. **(3 Marks)**

QUESTION TWO (COMPULSORY)

(a)

Set out below are the condensed balance sheets for Washala Ltd for 2019 and 2020, and an income statement for the year ended 31 December 2020.

BALANCE SHEETS

	2019	**2020**
	K000	K000
Ordinary share capital (K1 shares)	740	940
Revenue reserves	531	864
Share premium account	-	100
Loans	320	150
Trade creditors	152	141
Proposed dividends	140	170
Current taxation	470	602
Bank overdraft	-	766
	2,353	3,733
Plant and machinery		
Cost	2,700	3,831
Accumulated depreciation	748	1,125
	1,952	2,706
Inventory	203	843
Debtors	147	184
Cash at bank	51	-
	2,353	3,733

INCOME STATEMENT for the year ended 31 December 2020

	K,000	K,000

Income before tax		1,195
Corporation tax		602
Income after tax		593
Ordinary dividends		
Paid	90	
Proposed	170	
		260

Notes:

(1) The only new loan raised during the year was a five-year bank loan amounting to K65,000.
(2) Depreciation charged during the year amounted to K401,000
(3) During the year, plant which originally cost K69,000 was disposed of for proceeds of K41,000.
(4) During the year, the company offered 200,000 shares by way of rights to existing shareholders.

REQUIRED:

Prepare a statement of cash flows for 2020 in accordance with FSB 1 Statement of cash flows.

(16 Marks)

(b)

John has just purchased a 5-year commonwealth bond that has a coupon rate of 8% p.a. paid monthly. If the face value of the bond is K50,000,

(i) Calculate the price of the bond if yield to maturity is 6% p.a. Would you recommend buying the bond? **(3 Marks)**

(ii) If you buy the bond and hold it for two years, what price can you sell the bond for if the yield to maturity falls to 4%? **(3 Marks)**

(iii) If you buy the bond at the price calculated in (i) and sell it in two years" time for the price calculated in (ii), what would the effective per annum return on your investment be? **(3 Marks)**

SECTION B. Attempt any two questions.

QUESTION THREE

QUESTION THREE

Bwikalo Foloshi motel is owned by the Bwembya Fisonga. Fisonga, a professional footballer, could earn K24,000 per annum as a full-time player, but prefers to play on a part-time basis (for K12,000) and run the motel.

The motel has 60 available rooms which are charged out at K30 per day. The variable costs of operation of the motel amount to K8 per room rental per day. This includes cleaning, laundry, coffee, tea etc.

The fixed costs costs per annum are:

Reception/office staff	**K65,000**
Repairs/maintenance	**K39,000**
Depreciation	**K75,000**
Miscellaneous	**K23,600**

Further complaints that business is not as good from October to March as it is from April to September, as illustrated below:

	April-September	October-March
Potential rentals (60 x 26 x 7)	**10,920**	**10,920**
Rooms rented	**8,736**	**6,552**

REQUIRED:

(a) (i) **Prepare Net income for each six- month period. (4 Marks)**
(ii) Explain the term "Margin of Safety and state the amount. (3 Marks)

(b) Calculate the number of rooms per period which must be rented in order to break-even. **(6 Marks)**

(c) Calculate the number of rooms which would have to be rented to break even if the room charges were reduced from K30 to K25 from October to March. **(6 Marks)**

(d) Assuming that it is impossible to cover the fixed costs during November and February, regardless of the price per room, should the motel be closed during these months? What would be the financial and non financial effects of the closure? What are the limitations of using break-even analysis by reference to the Bwikalo Foloshi motel? **(6 Marks)**

QUESTION FOUR

(a)

Shimulopwe and Sons Ltd are considering expanding their operations. Several alternatives strategies are being discussed for financing this expansion. The latest balance sheet of the company as at 31 December 2020 is as follows:

Shimulopwe and Sons Ltd

Balance sheet at 31 December 2020

	K	K
Non- Current assets		
Land and buildings		40,000
Plant and Equipment		90,000
		130,000
Current Assets		
Inventory	50,000	
Debtors	40,000	
Cash	5,000	
	95,000	
Creditors: amounts falling due within one year:	25,000	
Net current assets		70,000
Total assets less current liabilities		200,000
Creditors: amounts falling due within one year:		
12% loan repayable 2026		90,000
		110,000
Share capital and reserves		K
8% cumulative preference shares of K1 each		30,000
Ordinary shares of K1 each		50,000

Income statement	30,000
	110,000

The board of directors has identified the following possible alternative ways of obtaining the additional K50,000 required during the following year:

(i) Issue additional ordinary shares (4 Marks)
(ii) Issue additional 8 per cent preference shares (4 Marks)
(iii) Raise an additional long-term loan at 12 per cent. (5 Marks)

Discuss the company's existing capital structure in terms of its gearing, and examine the advantages of each alternative method of financing the expansion plan.

(b) Automotive technology Ltd is listed on the stock exchange. The company recently paid a dividend of 30 ngwee per share. The recent annual report indicated that shareholders could expect dividend growth of 8% per annum for the next three years followed by growth of 5% per annum forever. Assuming your required rate of return is 10% per annum, what price would you be prepared to pay for the company's shares? (5Marks)

© Automotive technology Ltd needs to raise additional capital for new research & development projects. Their current funding is:

AMOUNT	SOURCE	COST
K15,000,000	Ordinary Shares	18%
K1,000,000	Bank Loan	!0%
K10,000,000	Debentures	13%

The company pays tax at 30%. Based on these figures, what discount rate should Automotive use in evaluating the new project? (7 Marks)

QUESTION FIVE

The Davidputa Co Ltd is a single-product manufacturing company, which uses a marginal costing system for internal management purposes. The year- end external reports are converted to absorption costs. Variances are charged to the cost of goods sold. The following data relates to the years ended 31 December 2020 and 2021.

	2020	2021

	K	K
Sale price per unit	80	90
Standard marginal costs per unit:		
Direct materials	21	23
Direct Labour	19	22
Marginal factory overheads	8	10
Marginal selling and administrative expenses	2	3
Fixed factory overheads	170,000	180,000
	Units	Units
Opening inventory	1,500	2,000
Closing inventory	2,000	1,500
Sales	20,000	25,000

The normal volume used for the purpose of absorption costing is 28,000 units in both years.

REQUIRED:

(a) Prepare profit and loss accounts for the year ended 31 December 2021 on a marginal costing and on an absorption costing basis. **(15 Marks)**

(b) Discuss any differences which you may find between these two profit and loss accounts. **(5 Marks)**

(c) State what advantages and disavantages attach to the marginal costing approach for internal management purposes **(5 Marks)**

QUESTION SIX

(a) Explain what is meant by the term 'Corporate Gorvernance and The Agency Principle. Examples and illustrations will attract marks. **(5 Marks)**

(b) What is the relationship between the following:

(i) Yield and Bond prices. **(4 Marks)**

(ii) Coupon rates and Yields. **(4 Marks)**

© Explain briefly at least five (5) factors affecting Dividend Policy. **(5 Marks)**

(c) Distinguish between the following:

(I) Direct Costs and Indirect costs **(4) Marks**

(II) Fixed Costs and Variable Costs. **(3) Marks**

END OF PAPER

$$IRR = L\% + \frac{NPVL}{NPVL - NPVH}(H\% - L\%)$$

Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where r = discount rate
n = number of periods until payment

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	0·980	0·961	0·943	0·925	0·907	0·890	0·873	0·857	0·842	0·826	2
3	0·971	0·942	0·915	0·889	0·864	0·840	0·816	0·794	0·772	0·751	3
4	0·961	0·924	0·888	0·855	0·823	0·792	0·763	0·735	0·708	0·683	4
5	0·951	0·906	0·863	0·822	0·784	0·747	0·713	0·681	0·650	0·621	5
6	0·942	0·888	0·837	0·790	0·746	0·705	0·666	0·630	0·596	0·564	6
7	0·933	0·871	0·813	0·760	0·711	0·665	0·623	0·583	0·547	0·513	7
8	0·923	0·853	0·789	0·731	0·677	0·627	0·582	0·540	0·502	0·467	8
9	0·914	0·837	0·766	0·703	0·645	0·592	0·544	0·500	0·460	0·424	9
10	0·905	0·820	0·744	0·676	0·614	0·558	0·508	0·463	0·422	0·386	10
11	0·896	0·804	0·722	0·650	0·585	0·527	0·475	0·429	0·388	0·350	11
12	0·887	0·788	0·701	0·625	0·557	0·497	0·444	0·397	0·356	0·319	12
13	0·879	0·773	0·681	0·601	0·530	0·469	0·415	0·368	0·326	0·290	13
14	0·870	0·758	0·661	0·577	0·505	0·442	0·388	0·340	0·299	0·263	14
15	0·861	0·743	0·642	0·555	0·481	0·417	0·362	0·315	0·275	0·239	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	0·812	0·797	0·783	0·769	0·755	0·743	0·731	0·718	0·706	0·694	2
3	0·731	0·712	0·693	0·675	0·658	0·641	0·624	0·609	0·593	0·579	3
4	0·659	0·636	0·613	0·592	0·572	0·552	0·534	0·516	0·499	0·482	4
5	0·593	0·567	0·543	0·519	0·497	0·476	0·456	0·437	0·419	0·402	5
6	0·535	0·507	0·480	0·456	0·432	0·410	0·390	0·370	0·352	0·335	6
7	0·482	0·452	0·425	0·400	0·376	0·354	0·333	0·314	0·296	0·279	7
8	0·434	0·404	0·376	0·351	0·327	0·305	0·285	0·266	0·249	0·233	8
9	0·391	0·361	0·333	0·308	0·284	0·263	0·243	0·225	0·209	0·194	9
10	0·352	0·322	0·295	0·270	0·247	0·227	0·208	0·191	0·176	0·162	10
11	0·317	0·287	0·261	0·237	0·215	0·195	0·178	0·162	0·148	0·135	11
12	0·286	0·257	0·231	0·208	0·187	0·168	0·152	0·137	0·124	0·112	12
13	0·258	0·229	0·204	0·182	0·163	0·145	0·130	0·116	0·104	0·093	13
14	0·232	0·205	0·181	0·160	0·141	0·125	0·111	0·099	0·088	0·078	14
15	0·209	0·183	0·160	0·140	0·123	0·108	0·095	0·084	0·074	0·065	15

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

Masters Deferred Examination

Friday, 3rd December, 2021

GSB 5031: FINANCE FOR MANAGERS

INSTRUCTIONS TO CANDIDATES

Time allowed: 3 hours

There are two sections in this paper, A and B. Section A is compulsory.

Section B consists of four questions and you are required to attempt any two questions.

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

QUESTION ONE (COMPULSORY)

A local manufacturer of drilling equipment is in the process of upgrading his cutting machine, which he had used the last 10 years. The new machine will cost K200,000 and will have an operating life of 4 years. At the end of the four years the machine can be sold at K12,000 to another smaller firm. The. machine is expected to generate revenue of K150,000 per annum and will cost K90,000 per annum to operate. The machine will be depreciated at K50,000 per annum.

The existing machine has a book value today of K20,000 and is being depreciated straight line at K5,000 per annum. This machine can be used for 4 years after which it can be scrapped for K0. It generates revenue of K50,000 per annum and costs K30,000 per annum to operate. The existing machine can be sold today for K30,000.

If the company tax rate is 30% and the after-tax required rate of return is 10% per annum, should the manufacture replace the existing machine with the new one?

(14 marks)

(b) Chungu would like to accumulate K40,000 in 4 years to pay for his wedding. He has decided to deposit a certain amount every month into a saving account paying 8% per annum compounded monthly. How much will his monthly deposit be? (3 marks)

© Tolani has borrowed K40,000 to buy a car. He has to make 60 monthly payments of K630 to discharge this debt. What is the per annum nominal interest on this loan? (3 marks)

(d) Discuss the relative merits of the following methods of business valuation.

(i) Asset based valuation

(ii) Price earnings ratio valuation

(5 marks)

(Total: 25 Marks)

QUESTION TWO (COMPULSORY)

Shimizu Co. Ltd is a single product- manufacturing company, which uses a marginal costing system for internal management purposes. The Year-end external reports are converted to absorption costs. Variances are charged to the cost of goods sold. The following data refers to the years ended 31 December 2020 and 2021:

	2020	2021
	K	K
Sales price per unit	80	90
Standard marginal costs per unit:	21	23
Direct labour	19	22
Marginal factory overheads	8	10
Marginal selling and administrative expenses	2	3

Fixed Factory overheads	170.000	180,000
	Units	Units
Opening inventory	1,500	2,000
Closing inventory	2, 000	1,500
Sales	20,000	25,000

The normal volume used for the purpose of absorption costing is 28,000 units in both years.

Required:

(a) Prepare profit and loss accounts for the year ended 31 December 2021 on a marginal costing and on an absorption costing basis. (7 Marks)

(b) Discuss any differences which you may find between these two profit and loss accounts. (7 Marks)

© State what advantages and disadvantages attach to marginal costing approach for internal Management purposes. (7 Marks)

(d) How should under- and over-absorbed overheads be disposed of? (4 Marks)

SECTION B (Answer any TWO questions)

QUESTION THREE

(a) A firm wishes to raise finance from issuing K2,000,000 of preference shares K5,000,000 shares of debentures and 3,000,000 of ordinary shares. Another K5,000,000 will be raised through a bank loan. Existing preference and ordinary shareholders are earning 8% p.a. and 20% p.a. respectively. It is estimated that the debenture holders will be expecting a return of 15%. The bank loan is expected to cost 12% p.a. If the company tax rate is 40%, calculate the after-tax weighted average cost of capital for this firm. (9 Marks

(b) In calculating NPV, there are certain types of cash flows which should not be considered. Give examples of the types of cashflows that should be omitted in an NPV calculation.

(4 Marks)

© Jason Mweshi Ltd's ordinary shares paid a dividend last year of K3.70. You believe that long-term growth in the dividends of the firm will be 8% per year.

(i) If your required rate of return is 14% per annum, how much are you willing to pay per share? (4 Marks)

(ii) If you are told that the growth rate of 8% per year will only last for two years followed by a long term growth rate of 5% per annum forever, how much are you willing to pay for the shares if your required return is 14 % per annum (4 Marks)

(iii) Financing any project using venture capital has got its merits and demerits. Explain two merits and two demerits of this method of financing> (4 Marks)

QUESTION FOUR

(a) What is sensitivity analysis? Explain the advantages and disadvantages of conducting such an anlysis. (4 marks)

(b) Due to the changing market conditions, Namukolo Ltd, has predicted the following cash flows for the production of its new line of product, a remote control for microwave ovens.

Year 0	Year 1	Year2	Year 3	Probability
-K100,000	10,000	20,000	30,000	0.20
	20,000	30,000	40,000	0.30
	30,000	40,000	50,000	0.30
	40,000	50,000	60,000	0.20

If the after-tax discount rate is 10% p.a., calculate the expected net present value and the standard deviation of the net present value. (10 Marks)

© A mining company, has been in operation in the northern part of Western Zambia. Due to the nature of its operations and cash flows, it is highly levered with 70% of its capital structure being debt.

Explain the business and financial risks that this company is exposed to? (5 Marks)

(c) An investment of K10,000 promises the following return

Year 0	Year 1	Year 2	Year 3	Year 4
	1000	0	3000	9000

(i) If the discount rate is 10% per annum, calculate the net present value. (3 Marks)

(ii) What is the internal rate of return on this investment? (

QUESTION FIVE

(a) Mutale is planning to invest over the next 5 year- period in ABC shares. The returns over the last 5 years for ABC shares have been as follows:

Year	Annual Return
2004	15%
2003	13%
2002	14%
2001	10%
2000	8%

Required:

Calculate the expected return and standard deviation of returns if he were to invest in ABC shares alone.

Additionally, Mutale has the opportunity to include a 5 -year government bond (risk-free) with an annual expected return and standard deviation of expected returns for his investment portfolio

Explain how diversification has reduce the risk on Mutale's portfolio. (10 marks)

(c) Esnart has decided to save K180 at the beginning of every month for a deposit on her first home loan. Suppose that she will only be ready to buy her home 5 years from today. If her savings account pays interest at 3.6% p.a. compounding monthly, how much will Esnart have accumulated when she is ready to buy her house? (4 Marks)

(d) You have asked the accountant for four budgets based on different economic forecasts. He started work on these, but has fallen ill and cannot complete the figures in time. His secretary has found the work he has done to date which is as follows:

Economic Forecast -	Depressed	Average	Good	Excellent
Variable costs (K'000)	40	60	90	140

There are fixed costs of K72,000 and the C/S ratio is 60%.

Required:

(i) Calculate the profit or loss of the four levels; (4 Marks)

(ii) Calculate the break-even point in sales value; (4 Marks)

(iii) Calculate the sales value at which a profit of K15,000 would be made (3 Marks)

QUESTION SIX

The balance sheets for Sinkala & co Ltd for the year ended 2020, 2021, and 2022 are as follows:

Sinkala & Co Ltd

Balance Sheets at 31 December

	2019	2020	2021
	K000	K000	K000
Non-current assets			
Plant and Equipment	13,200	16,110	16,410
Current Assets			
Inventory	2,190	2,280	2,490
Trade Debtors	2,040	2,100	2,430
Short-term investments	4,200	1,800	1,290
Cash at bank and in hand	1,900	1,650	2,160
Creditors: amounts falling due within one year			
Short-term loans	(2,340)	(2,580)	(2,550)
Trade Creditors	(2,760)	(2,610)	(2,670)
Taxation	(360)	(420)	(530)

	5,460	5,610	5,750
Net Current assets	4,890	2,220	2,620
Total assets less current liabilities	18,090	18,330	19,030
Capital and Reserves			
Called-up share capital	4.500	4,500	4,500
Share premium account	9,000	9,000	9,000
Other reserves	3,380	4,060	4,570
Income statement	1,310	770	960
	18,090	18,330	19,030
Other data			
Income before tax	960	1,020	1,590
Tax on annual profit	360	420	530
Tax paid during the year	300	360	420
Annual depreciation	645	780	900
Dividends declared and paid	360	360	360

In 2021, equipment was sold at a loss of K210,000. New plant in 2021 cost K5,100,000 and in 2022 cost K1,200,000. Income transferred to other reserves in2021 and 2022 amounted to K780,000 and K510,000 respectively.

Required:

Prepare statement of cash flows for 2021 and 2022 in accordance with FRS1 and show how they would be presented under IAS 7. (18 Marks)

(c) D Ltd includes two divisions. Division A manufactures a component which is used by Division B to produce a finished product. For the next period, output and costs have been budgeted as follows:

	Division A	Division B
Component units	50,000	
Fixed units		50,000
	K	K
Total variable costs	250,000	600,000
Fixed costs	150,000	200,000

The fixed costs are separable for each division.

Required:

To advise on the transfer price to be fixed for Division A's component under the following Circumstance:

There is an External market for the component produced by A, and Division B's product is selling in a competitive market at K28 per unit. Take into consideration both decision-making and performance evaluation aspects. (7 Marks)

UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

CORPORATE GOVERNANCE AND BUSINESS ETHICS

GSB 5041

FINAL EXAMINATION

Wednesday 20th February, 2019 **Time: 09:00 – 12:00 Hours**

INSTRUCTIONS

1. **This examination paper is divided into TWO Sections. Section A is compulsory and carries 40 marks.**
2. **Candidates should attempt THREE questions from Section B, all of which carry 20 marks each.**
3. You should allow yourself approximately 70 minutes in total to answer the questions in Section A,
4. Approximately 35 minutes for each of the questions attempted in Section B.
5. Candidates are not permitted to bring any material into the examination
6. Candidates must not turn this page until the invigilator tells them to do so

QUESTION 1

In recent years, Google has been under major scrutiny for gender discrimination, and the Department of Labor is investigating Google for a potential gender pay gap. Also, Silicon Valley has been exposed as a community that repeatedly discriminates against women and other minorities, and research shows that the gender disparity in tech jobs is pervasive and widespread. As a result, Google has made a major push to create a more diverse and inclusive work culture.

In August of 2017, Google fired a male software engineer, James Damore, after he internally posted a memo that relied on inaccurate gender stereotypes to criticize Google's implementation of its diversity and inclusion initiative. The memo was leaked to the press, which lead to a public outcry and exacerbated an already tense time for gender diversity in Silicon Valley.

Around the same time as Damore's firing, a white supremacist protest that turned violent in Charlottesville, Virginia, heightened an already tense conversation about the complexities of free speech in America. The overall conflicting views on free speech are split down ideological lines: Conservatives say they aren't free to express their views because liberals will accuse them of being politically incorrect, while liberals believe that in an effort towards being more inclusive, people should avoid using language that is potentially offensive to marginalized communities.

Damore says he was trying to point out that sometimes conservative viewpoints aren't welcome at Google because of its liberal "echo chamber." The memo also says that Google discriminates against certain employees and offers development opportunities "only for people with a certain gender or race," and that Google has lowered the bar by hiring diverse candidates. Damore believes that in order to have a truly diverse culture, Google needs to create a safe space for more conservative views.

Damore's memo also states that one of the central reasons there are fewer women than men in tech is women are biologically different from men. Damore then references scientifically unfounded gender stereotypes to support this line of reasoning. Some of the stereotypes he uses include: women are more neurotic than men; women are less capable of handling stress; and women are better at relationships than men because men are better at "things."

After the memo was leaked, many criticized the contents, calling Damore and his memo "anti-diversity," with Google employees and some of the general public saying they were offended by its contents. Critics said Damore's memo is exactly the type of discrimination that keeps women out of the tech industry, and some female Google employees expressed discomfort at having to work with Damore.

The day after the memo was leaked, Google's VP of Diversity and Inclusion, Danielle Brown, issued a statement criticizing the discriminatory content of the memo, saying it did not align with Google's dedication to creating a truly diverse workforce. Three days after the public release of the memo, Damore confirmed Google had fired him.

Sundar Pichai, Google's CEO, released a statement explaining the decision to fire Damore. Pichai's statement points out that some of Damore's criticisms of Google's attempts at creating a truly diverse culture are valid, but the memo violated parts of the company's code of conduct "by advancing harmful gender stereotypes in our workplace." Pichai also writes, "To suggest a group of our colleagues have traits that make them less biologically suited to that work is offensive and not OK."

Those who disagree with the firing say it confirms Damore's main argument: that Google does have a liberal echo chamber; Google is intolerant to conservative views; and that its diversity efforts have actually backfired and stifled diversity. Others who disagree point to Damore's right to free speech. However, there is some legal ambiguity in this case because companies have the legal right to fire an employee who makes statements that could create a hostile working environment for other employees in a protected class (gender, age, sexual orientation, etc.), particularly in an at-will state like California, where Google is headquartered. But, in California, an employee cannot be fired for their political views, complicating the legal aspects of this situation even further. Damore sought out legal counsel after Google fired him, and he is currently deciding whether or not to sue for wrongful termination.

Those who believe Google made the right decision by firing Damore point out that the company has made a very public commitment to creating a diverse and inclusive culture, and to have an openly discriminatory employee breaks that commitment. Keeping Damore around could also negatively impact morale among employees, create a hostile working environment, and lead to a back slide in culture. Additionally, Google has a peer review process, whereby employees review one another's performance. These reviews directly influence potential raises, bonuses, and promotions, so Damore's critics question whether he could be trusted to give fair reviews when he has openly discriminated against his female colleagues in the memo.

Required:

a. Why is the subject of business ethics increasingly becoming important to companies? **(7 marks)**
b. Legally, Google's firing of Damore may or may not be problematic, but is Google's firing of Damore ethical? **(7 marks)**
c. Would you have made the same decision if you were Pichai? Discuss? **(10 marks)**
d. Is it ethical for an organization to fire someone who expresses beliefs that don't align with the overall culture? **(9 marks)**
e. How can google put business ethics into practice, and therefore on top of its agenda? **(7 marks)**

(Total 40 marks)

SECTION B

Question 2

Bathwell Limited has been supplying and fitting premium bathrooms and kitchens in hotel chains throughout Zambia and the SADC for the past 20 years. The company started as a small family concern, but because of the rapid growth it experienced and an associated need for additional capital, it was recently listed on the Lusaka Stock Exchange by an initial public offering.

To remain fully compliant with the Zambia corporate governance code, the board established audit, remuneration and nomination committees which were solely populated by independent non-executive directors. However, it did not consider it necessary to create a separate risk committee because the board believed that the remit of the audit committee included all aspects of risk management policy. This explanation was formally submitted to the shareholders at its first general meeting, who agreed with the board's proposal.

As part of its expansion strategy, the board of Bathwell Limited decided it needed to enter overseas markets, and in particular the developing country of Oceania, which is located on the Indian Ocean, 900 kilometres of the shores of Madagascar. The reason that Oceania was selected as a suitable market was because it had experienced rapid economic growth and domestic prosperity following the discovery of rich, offshore mineral deposits. Unfortunately, this small island nation has never enjoyed stable democratic government and is notorious for corrupt business practices, with customs officials regularly demanding bribes from both importers and exporters. As a result, Oceania has a poor international credit rating. In order to attract both domestic and foreign inward investment, the government of Oceania operates with very low levels of indirect tax, which has stimulated the island's tourist industry and led in turn to a significant increase in hotel building.

Following a successful tendering exercise, Bathwell Limited was awarded the contract to supply all of the bathroom equipment for a 200-room hotel, currently under construction in a remote area of the island. The total value of the supply contract amounted to Oceanian $1,800,000, and it was to be paid in three equal instalments as the bathrooms were delivered to the hotel. The contract assigns responsibility for shipping the goods the 3,000 km from Zambia to the island solely with Bathwell Limited, and no payment will be made until an agreed volume of goods clears Oceanian customs. A further problem is that the Oceania dollar is quite volatile, but recently it has been strengthening against the Zambian Kwacha. As all contract payments are to be made in Oceania currency, Bathwell Limited is exposed to foreign exchange risks.

The many contract-related issues amount to significant risks to Bathwell Limted requiring effective management if the supply contract is to be a success and contribute to the company's ambitious growth targets.

Required:

a) Explain the function and roles of a risk committee within an effective corporate governance framework, and discuss the advantages which a risk committee could add to the governance of Bathwell Limited. (8 Marks)

b) Explain the term risk appetite, and assess how the risk appetite of Bathwell Limited has influenced both its corporate strategy and the risks it has chosen to bear. (4 marks)

c) Explain how Bathwell Limited could effectively control the strategic and operational risks which arise from the Oceania supply contract. (8 Marks)

(Total 20 marks)

Question 3

In June 2015 Zambia Phone Company ousted its CEO Because of concerns about the reliability of the company's financial statements. In July, the company disclosed that it had incorrectly accounted for large amounts of revenue over the past three years. Apparently, the company had recorded 5 million Kwacha of income at the end of each quarter that should properly have been attributed to the next quarter. In this way, the company reported revenue and profits before they properly occurred. It was suspected that the company manipulated the accounts because it was under pressure from the investment community to reach certain revenue and profit targets for each quarter.

In addition, the company's new auditors were investigating the company's accounting policies for over 1 Billion Kwacha 'swap transactions', in which the company bought and re-sold network capacity to the same companies, thereby boosting reported revenues. It is questionable whether these swap transactions were genuine business transactions, or simply a ruse for increasing reported revenues.

Required

Discuss the corporate governance concerns regarding the financial reporting and auditing position of Zambia Phone Company. (Total 20 marks)

QUESTION 4

a) What was the background to the introduction of the Sarbanes-Oxley Act in the United States of America? **(6 marks)**

b) How were these provisions intended to reduce the risk of corporate fraud? Evaluate whether this is likely to be achieved. **(8 marks)**

c) Explain how the corporate governance requirements of the US Sarbanes-Oxley Act differ from the requirements in the UK. **(6 marks)**

(Total 20 marks)

QUESTION 5

Regrettable Holdings Plc was incorporated in 2000 as the holding company of Regrettable Securities Limited and its subsidiaries. Regrettable Securities Limited was authorized under relevant legislation to carry out merchant banking activities, providing advisory services and negotiated finance. Its directors were the same as the directors of Regrettable Holding Plc. Frank Ngozi was Chairperson and Managing Director and did not consult the Board about loans made by the company. Nor was there any policy in place about the level of expenditure by the companies, and providing incomplete information to the boards, balance sheets were shown in a favourable light. Transactions just before, and after, balance sheet dates created misleading accounts which hid the true financial picture. The Auditors appointed in 2000 continued in office throughout the group's history, and Regrettable Group rapidly became their largest client. As the board had no standing committees, the auditors reported directly to Mr. Ngozi.

Following the collapse of Dotcom boom, loans turned sour and Regrettable Group collapsed. The Company was subject to the Ministry of Commerce's inspection, including the Anti-Corruption Commission, and several charges were brought against Mr. Ngozi and other Directors under the Companies Acts. The Auditors were criticized and several deficiencies noted in their conduct of the audit.

The Inspector's report stated that:

"For a company to be well-managed, an effective system of corporate governance needs to be present and functioning properly. The investigation into Regrettable Securities Limited reveals a system which did not work effectively, because of the absence or ineffectiveness of the required elements. "

Based on the scenario:

(a) Identify the key areas where good governance would have helped to avoid the corporate collapse of the Regrettable Group. **(4 Marks)**

(b) Explain the ways in which the application of these corporate governance principles would reduce the risk of failure. **(16 Marks)**

(Total 20 Marks)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

CORPORATE GOVERNANCE AND BUSINESS ETHICS

GSB 5041

FINAL EXAMINATION

FRIDAY, 10TH JULY, 2020 **TIME 09:00 – 12:00 Hours**

INSTRUCTIONS

1. **This examination paper is divided into TWO Sections. Section A is compulsory and carries 50 marks.**

2. **Candidates should attempt TWO questions from Section B, all of which carry 25 marks each.**

3. You should allow yourself approximately 90 minutes in total to answer the questions in Section A.

4. You should allow yourself approximately 45 minutes for each of the questions attempted in Section B.

5. Candidates are not permitted to bring any material into the examination.

6. Candidates must not turn this page until the invigilator tells them to do so.

Section A – This question is compulsory and MUST be attempted

Question 1

Kemiko Company Plc is a well-established listed European chemical company involved in research into, and the production of, a range of chemicals used in industries such as agrochemicals, oil and gas, paint, plastics and building materials. A strategic priority recognised by the Kemiko Company Plc board some time ago was to increase its international presence as a means of gaining international market share and servicing its increasingly geographically dispersed customer base.

The Kemiko Company Plc board, which operated as a unitary structure, identified Chemsis Incorporation as a possible acquisition target because of its good product 'fit' with Kemiko Company Plc and the fact that its geographical coverage would significantly strengthen Kemiko Company Plc's internationalisation strategy. Based outside Europe in a region of growth in the chemical industry, Chemsis Incorporation was seen by analysts as a good opportunity for Kemiko Company Plc, especially as Chemsis Incorporation's recent flotation had provided potential access to a controlling shareholding through the regional stock market where Chemsis Incorporation operated.

When the board of Kemiko Company Plc met to discuss the proposed acquisition of Chemsis Incorporation, a number of issues were tabled for discussion. John Black, Kemiko Company Plc's Chief Executive, had overseen the research process that had identified Chemsis Incorporation as a potential acquisition target. He was driving the process and wanted the Kemiko Company Plc board of directors to approve the next move, which was to begin the valuation process with a view to making an offer to Chemsis Incorporation's shareholders. John said that the strategic benefits of this acquisition was in increasing overseas market share and gaining economies of scale.

While Kemiko Company Plc was a public company, Chemsis Incorporation had been family owned and operated for most of its thirty-five year history. Seventy-five percent of the share capital was floated on its own country's stock exchange two years ago, but Joyce Mimi, Kemiko Company Plc's Company secretary suggested that the corporate governance requirements in Chemsis Incorporation's country were not as rigorous as in many parts of the world. She also suggested that the family business culture was still present in Chemsis Incorporation, and pointed out that it operated a two-tier board with members of the family on the upper tier. At the last annual general meeting, observers noticed that the Chemsis Incorporation board, mainly consisting of family members, had 'dominated discussions' and had discouraged the expression of views from the company's external shareholders. Chemsis Incorporation had no Non-Executive Directors and none of the board committee structure that many listed companies like Kemiko Company Plc had in place. John reported that

although Chemsis Incorporation's department heads were all directors, they were not invited to attend board meetings when strategy and management monitoring issues were being discussed. They were, he said, treated more like middle management by the upper tier of the Chemsis Incorporation board and that important views may not be being heard when devising strategy. Joyce suggested that these features made the Chemsis Incorporation board's upper tier less externally accountable and less likely to take advice when making decisions. She said that board accountability was fundamental to public trust and that Chemsis Incorporation's board might do well to recognise this, especially if the acquisition were to go ahead.

Kemiko Company Plc's Finance Director, Mary Rich advised caution over the whole acquisition proposal. She saw the proposal as being very risky. In addition to the uncertainties over exposure to foreign markets, she believed that Kemiko Company Plc would also have difficulties with integrating Chemsis Incorporation into the Kemiko Company Plc culture and structure. While Kemiko Company Plc was fully compliant with corporate governance best practice, the country in which Chemsis Incorporation was based had few corporate governance requirements.

Daniel Amos, Kemiko Company Plc's Operations Director, asked John if he knew anything about Chemsis Incorporation's risk exposure. Daniel suggested that the acquisition of Chemsis Incorporation might expose Kemiko Company Plc to a number of risks that could not only affect the success of the proposed acquisition but also, potentially, Kemiko Company Plc itself. John replied that he would look at the risks in more detail if the Kemiko Company Plc board agreed to take the proposal forward to its next stage.

Finance Director Mary Rich, had obtained the most recent annual report for Chemsis Incorporation and highlighted what she considered to be an interesting, but unexplained, comment about 'negative local environmental impact' in its accounts. She asked Chief Executive John Black if he could find out what the comment meant, and whether Chemsis Incorporation had any plans to make provision for any environmental impact. John Black was able to report, based on his previous dealings with Chemsis Incorporation, that it did not produce any voluntary environmental reporting. The Kemiko Company Plc board broadly supported the idea of environmental reporting although Company Secretary Joyce Mimi recently told John Black that she was unaware of the meaning of the terms 'environmental footprint' and 'environmental reporting,' and so couldn't say whether she was supportive or not. It was agreed, however, that relevant information on Chemsis Incorporation's environmental performance and risk would be necessary if the acquisition went ahead.

Required:

(a) Evaluate Chemsis Incorporation's current corporate governance arrangements, and explain why they are likely to be considered inadequate by the Kemiko Company Plc board. (10 marks)

(b) Daniel Amos suggested that the acquisition of Chemsis Incorporation might expose Kemiko Company Plc to a number of risks. Illustrating from the case as required, identify the risks that Kemiko Company Plc might incur in acquiring Chemsis Incorporation and explain how risk can be assessed. (15 marks)

(c) Construct the case for Chemsis Incorporation adopting a unitary board structure after the proposed acquisition. Your answer should include an explanation of the advantages of unitary boards and a convincing case FOR the Chemsis Incorporation board changing to a unitary structure.

(10 marks)
(Including 2 professional marks)

(d) Explain FOUR roles of Non-Executive Directors (NEDs) and assess the specific contributions that NEDs could make to improve the governance of the Chemsis Incorporation board. (7 marks)

(e) Write a memo to Joyce Mimi:
i. Briefly evaluating the concept of 'environmental footprint,' and,
ii. Briefly explaining the importance of environmental reporting for Chemsis Incorporation.

(8 marks)
(Including 2 professional marks)
(Total 50 marks)

Section B – TWO questions ONLY to be attempted

Question 2

In a recent case, it emerged that Mr. Anabwela Phiri, a Sales director at Genesis Company, had been awarded a substantial over-inflation annual basic pay award with no apparent link to performance. When a major institutional shareholder, Hexal Investments, looked into the issue, it emerged that Mr. Phiri had a cross directorship with Joe Mutale, an Executive Director of Model Express Limited. Mr Joe Mutale was a Non-Executive Director of Genesis Company, and Chairman of its Remunerations Committee. Hexal Investments argued at the Annual General meeting that there was 'a problem with the independence' of Mr. Mutale and further, that Mr Phiri's remuneration package as a Sales Director was considered to be poorly aligned to Hexal Investment's interests because it was too much weighted by basic pay and contained inadequate levels of incentive.

Hexal Investments proposed that the composition of Mr. Phiri's remuneration package be reconsidered by the remunerations committee and that Mr. Mutale should not be present during the discussion. Another of the larger institutional shareholders, Haamango Holdings, objected to this, proposing instead that Mr. Mutale and Mr. Phiri both resign from their respective non-executive directorships as there was 'clear evidence of malpractice'. Hexal Investments considered this too radical a step, as Mr. Mutale's input was, in its opinion, valuable on Genesis Company's board.

Required:

(a) Explain FOUR roles of a Remunerations committee and how the cross directorship undermines these roles at Genesis Company. (12 marks)

(b) Hexal Investments believed Mr. Phiri's remunerations package to be 'poorly aligned' to its interests. With reference to the different components of a director's remunerations package, explain how Mr. Phiri's remuneration might be more aligned to shareholders' interests at Genesis Company. (8 marks)

(c) Evaluate the proposal from Haamango Holdings that both Mr. Mutale and Mr. Phiri be required to resign from their respective non-executive positions. (5 marks)

(Total 25 marks)

Question 3

You are the Company Secretary of Liberty Plc. Recently there have been several disputes about whether certain actions in Divisions of the company have been properly conducted. Although technically legal in each case, these are viewed as improper or as sharp practice by some of those aware of the circumstances. The CEO and Company Secretary are aware that one of the directors is likely to raise this problem at the next board meeting. You are asked to brief the executive committee on two main areas, at a meeting to be held before the board meeting:

(a) Briefly evaluate the concept of business ethics, and why this concept is increasingly important to profit and non-profit companies and/or organizations; (15 Marks)

(b) How Liberty Plc can put business ethics into practice. (10 Marks)

(Total: 25 Marks)

Question 4

ZAFF is a security company based in Zambia. When ZAFF was shortlisted for a valuable contract for the development of a coastal defence system for another country, it was contingent on the payment of a facilitation fee to an official in the Ministry of Defence. Clearly this was an unusual request but it was also made very clear that ZAFF would not be awarded the contract, worth US$2 billion over 10 years, unless the relatively modest sum of US$1 million was paid immediately.

Recently, business activity in the defence sector had been very slow, and ZAFF was about to announce around 600 staff redundancies. Therefore news that this contract was about to be awarded came as a great relief to the board of ZAFF, as the jobs would now be secured. However, only the chief executive officer (CEO) and operations director knew about the facilitation fee, so an emergency meeting of the board was convened with only one item on the agenda. Due to the very sensitive nature of the matter at hand, it was decided not to make a formal record of the discussions at the board meeting. This was more likely to result in a frank exchange of views and encourage all directors to express their opinions openly.

The CEO, Chola Mane, explained the dilemma to the board, making it very clear that without this contract there would be no way to protect jobs. The finance Director, John Ndrama, said that he was personally very uncomfortable with the idea of paying a facilitation fee, which was in effect a "bribe." As a professional accountant he was bound by a code of ethics which strictly prohibited making such payments, therefore, he could not sanction the payment under any circumstances.

The HR Director, Ruth Nchito, took a far more pragmatic stance. She acknowledged that any form of corruption was utterly deplorable; however, it was a fact of life in many countries. She asserted that if the board of ZAFF decided not to make the payment and forego the contract, then it could be assured that a competitor would not adopt such a high-minded position. The net effect was that by avoiding a relatively small payment, the firm would be doing a disservice to both its employees and its shareholders, who would undoubtedly

suffer a reduction in their shareholder value. She maintained that sometimes it is necessary to take difficult decisions in business that are for the greater good, and so suggested that the payment to the official should be made.

Required:

(a) Explain the ethical theories of deontology and teleology or consequentialism, and analyze which of the approaches have been adopted by Ruth Nchito and John Ndrama. (9 marks)

(b)The involvement of directors in bribery and corruption can seriously undermine the relationships of trust upon which corporate governance is based:

(i) Assess how bribery and corruption could undermine confidence and trust in ZAFF, with reference to the principles of corporate governance.

(8 marks)

(ii) Describe best practice measures which could be employed by ZAFF to combat bribery and corruption.

(8 marks)

(Total 25 marks)

Question 5

Generally, organisational justice theory is concerned with employees' perceptions of justice in work-related issues (Greenberg 1990). Greenberg further espoused that the concept of organizational justice is with regard to how an employee judges the behaviour of the organization and the employee's resulting attitude and behaviour.

Bies et al. (1988) study on organisational justice theory places much emphasis on the beliefs that individuals used to guide judgements concerning the fairness of a decision. Therefore, the distinction in any organization is between seeking to redress injustice and striving to attain justice.

Required

Critically analyse the taxonomy of organizational justice theories.

(Total 25marks)

END OF EXAMINATION.

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

CORPORATE GOVERNANCE AND BUSINESS ETHICS

GSB 5041

FINAL EXAMINATION

Monday, 7TH SEPTEMBER, 2020 **TIME 09:00 – 12:00 Hours**

INSTRUCTIONS

1. **This examination paper is divided into TWO Sections. Section A is compulsory and carries 50 marks.**
2. **Candidates should attempt TWO questions from Section B, all of which carry 25 marks each.**
3. You should allow yourself approximately 90 minutes in total to answer the questions in Section A,
4. You should allow yourself approximately 45 minutes for each of the questions attempted in Section B.
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THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

CORPORATE GOVERNANCE AND BUSINESS ETHICS

GSB 5041

FINAL EXAMINATION

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Section A – This ONE question is compulsory and must be attempted

The National Football Federation (NFF) is the governing body of the game of football in the country of Eastland and is tasked with administering the rules of the game. The NFF is not a listed company and so is not subject to listing rules. However, as the regulator of the game, the NFF is expected to adopt governance arrangements which are in line with best practice for listed companies. Football is the most popular sporting activity in Eastland and all the national league football matches are televised. The right to televise games is also sold to other countries meaning that Eastland football games are seen by many people who enjoy the game around the world, giving the NFF a very high public profile.

The NFF is also responsible for all regulatory aspects of the game of football and one of its core aims is 'to govern the game effectively and maintain integrity'. The role of the football referee is critical in achieving this aim and being a referee is considered to be a key role by the NFF, as well as being important to the continued popularity of the game of football. A football referee is the person responsible for enforcing the laws of the game during each football match and is the final authority of all decisions on the football pitch, giving the referee a significant amount of discretion as to the interpretation of the laws of the game. The amount of authority and responsibility they have is equivalent to that of senior managers in a listed company. For this reason the referee role within the NFF is full time and prestigious.

The main board at the NFF delegates responsibility for referees to a referee subcommittee whose brief is to emulate the role and responsibility of board committees in a listed company. This means the committee is expected to follow best practice governance guidelines relating to the responsibility of the nomination, remuneration and audit committees in governance and apply the guidelines to the recruitment, remuneration and control of football referees and refereeing. Referees are supported by two assistant referees who are empowered to advise the referee in certain situations such as the ball going out of the field of play. However, the assistant referees' decisions are not binding and the referee has authority to overrule his assistants. This is one of the reasons why refereeing decisions are sometimes controversial.

Referees have autonomy in their choice of assistants for each game. The NFF believes that working with officials you are familiar with stimulates a better team spirit and the confidence to make the correct decisions and not to let your colleagues down. This should motivate the officials towards better performance during the game. The names of the officials for each match are normally released 28 days before any match takes place and this information is readily available to external parties. The referee subcommittee applies very general guidelines on what is required of a referee, believing that if you have a passion for the game you can become a referee. Referee appointments are often via word-of-mouth recommendations and are influenced by social connections and personal influence rather than meeting objective selection criteria. After an initial induction training course, which is delivered at local level and is not regulated by the NFF, there is no formal on-going training programme. Any changes to the laws or regulations of the game are distributed from the NFF to the local level of the football association whose responsibility it is to make sure individual referees are aware of the updates.

Although the NFF sees the role of a referee as prestigious, this is not reflected in their current pay structure. The reward package of a referee is substantially lower than equivalent senior management in listed companies. Many of the referees have expressed their resentment on the disparities to the NFF, but this has never been addressed. Referees are facing the lowest level of year on year pay increases in Eastland at just 0·1%. Equivalent positions in listed companies, and footballers playing in the national league in Eastland, are expected to receive on average a 15% increase year on year. Referees are paid around one-tenth of the average wage of the footballers playing in the national league. Despite the apparent disparity in

earnings, many of the referees live in very expensive houses and live lavish lifestyles, well beyond their apparent means.

The NFF has faced a number of criticisms in the press in recent months. One criticism refers to the corruption of football referees. The referees have been accused of match fixing. Match fixing generally refers to influencing the final result of the game. One form of match fixing is where the referee favours one side throughout the match in exchange for a fee so that the outcome of the game is effectively agreed before the match starts. The referee can influence the outcome by adding on more extra time than justified, awarding penalties unfairly or disallowing legitimate goals. The referee has complete autonomy over the game which means that any decision made during the game is not questioned and the referee's decision is final. National league football clubs cannot appeal against any decision made by the referee. The media has also criticised the lack of use of readily available technology within the sport of football in Eastland. Technology used in many other sports is increasing rapidly but the sport of football has been slow to incorporate the use of technology. The technology could be used to enable the referee to make the correct decisions.

The NFF believes there is no value in technology and suggests that it will reduce the viewing experience for spectators who, it believes, are more concerned about respecting the game's traditions. A goal decision system is used in other parts of the world to rule on whether the ball has crossed the line when a goal is awarded. This supports better decision making, but this is not currently used in Eastland. The media highlighted the NFF's failure to govern the game effectively and its inability to maintain integrity in its operations, which the NFF promotes as core values. In an effort to address the criticisms, the NFF has recently appointed a Football Regulation and Administration Director. The Administration Director will oversee areas of discipline and governance within the NFF, and the game of football, which includes responsibility for football match refereeing.

The media believes that as a governing body the NFF is weak and has organisational shortcomings which are leading to control failures and that the NFF is tolerant of breaches in governance and turns a blind eye to corrupt practices. This is contributing to the poor performance of referees and their inability to make the correct decisions.

The new Football Regulation and Administration Director went on television to explain that in his new role he would be drawing on his previous experience of board positions of listed companies. This will influence his approach to governance and ethics at the NFF. He said that there appears to be a culture of carelessness at the NFF and that parts of the organisation are too autonomous, without any effective internal or external oversight. He supports the NFF's view that the role of a referee should be considered as responsible as senior managers of a listed company, due to the great responsibility they bear. He recognised the failings of the referee subcommittee and is concerned that it is composed of ex-footballers with little prior management experience. He stated that the NFF could learn from the governance required of listed companies. He believes that more rules related to conduct on and off the field will be needed and that his priority is to review the governance, ethics and internal controls within the NFF and the role of the referee subcommittee in overseeing the changes.

Required:

(a) Explain the important role which board committees have in governance and critically assess the governance arrangements of the referee subcommittee in recruiting, remunerating and controlling referees. (10 marks)

(b) Discuss the conditions which currently exist at the NFF which make the referees and their officials vulnerable to corruption. (8 marks)

(c) Critically evaluate the general purposes of an internal control system and recommend control measures which could be implemented to ensure the overall control environment and the refereeing of football matches at the NFF is improved. (12 marks)

(d) Prepare briefing notes for the newly appointed Football Regulation and Administration Director in readiness for the next board meeting. The notes should:

(i) Explain the importance of independence in refereeing decisions to football supporters. (4 marks)

(ii) Assess the damaging effect any suspicion of bribery and corruption of match officials can have on the NFF, and the wider reputation of the game of football. (6 marks)

(iii) Discuss the benefits and contents of a professional code of ethics which could be used by referees at the NFF. (6 marks)

Professional marks will be awarded in part (d) for clarity, persuasiveness, tone and flow of the briefing notes. **(4 marks)**

(50 marks)

Question 2

Mr. White Nchito is a Deputy Managing Director in a large corporation, Moon Limited. As part of his duties, he supervises fifteen managers; fourteen of these managers are men. Only one of the managers is a black man, and one is a white female.

Mr. Nchito is replacing one of the white, male managers. He has advertised the position both in house and outside, as required by his company's hiring policies. After reviewing all of the applications, he believes that Mr. Steve Ziko, an employee of the company for 12 years, is the most qualified applicant. However, in the pool of applicants there are three qualified women, and two qualified black men.

Required

a) Morally what should Mr. Nchito do? **(5 marks)**

b) Is it fair to hire Steve, even though this will still mean that the managers will have definite gender and race inequity? **(5 marks)**

c) Is it ethical for Mr. Nchito to hire someone less qualified just to agree with a policy or rule of equal opportunities in employment? **(5 marks)**

d) Should Mr. Nchito give up and let the other manager's vote on who should be hired? **(3 marks)**

e) Evaluate possible organizational justice implication of your responses to a),b),c) and d) above. **(7 marks)**

(Total 25 marks)

Question 3

Paul Banda is the chairperson of the Nomination Committee of POBIT Plc and is also chairperson of the Audit Committee. He thinks that the composition of the Board should be changed. In his view, the Board should consist mainly of Non-Executive Directors (NEDs), and there is no requirement for Executive Directors on the Board except for the Chief Executive Officer (CEO) and Finance Director. The approaching retirement of the CEO, in Paul's view, presents an excellent opportunity to reduce the number of Executive Directors by promoting the Operations Director, currently a Board member, to the position of CEO. The new Operations Director need not be offered a Board position. Paul is also concerned about the lack of diversity on the Board, and believes that most of the current NEDs should be replaced, and that there should be an increase in the number of female Board members.

The Chairperson of the Board, Mr. Sitali Nyambe has different views. He thinks that the current balance of the Board, with a small majority of independent NEDs, is suitable. In his view, the Operations Director would not make a suitable CEO. He also believes that it is inappropriate to ask NEDs to resign before the end of their three-year appointment period, and that it would be madness to appoint women to the board just for the sake of being seen to be progressive.
Paul and Sitali have had heated arguments about their differing views. Paul believes that poor-performing NEDs should be told to resign and that, as chairperson of the Nomination Committee, he should have more authority than Sitali on matters of Board appointments and succession. Mr. Nyambe believes that Paul should not be chairperson of two Board committees, and that a suitable way forward would be for himself to replace Paul as chairperson of the Nomination Committee.

Mr. Nyambe has asked for your opinion, as Company Secretary, about the differences of opinion between himself and Paul.

Required

Prepare a report for Mr. Sitali Nyambe, the Board Chairperson, in which you:

a) Explain the role of the Nomination Committee Chairperson, and suggest whether it is the Nomination Committee chairperson or the Board Chairperson who should have authority to deal with matters concerning the composition of the Board and board succession matters. **(9 marks)**

b) Recommend measures that might be taken to review and change the composition of the board. **(11 marks)**

c) Advise on whether it would be appropriate, and within best practices of Corporate Governance, for the Chairperson of the Board to replace Paul as Chairperson of the Nomination Committee. **(5 marks)**

(Total: 25 marks)

Question 4

Business University needed to purchase a networking system. James Banda pressed hard for the 3-COM network which CompTech Limited endorsed and supported. ICT General made an excellent point that Novell was the system used in the industry as a standard. When James Banda learned that CompTech could bid Novell, he agreed and bids were let for Novell's Netware.

Three very high priced bids came back from companies ICT General had never heard of; CompTech Limited bid K46, 000 and BIG BYTE bid K20, 000. James Banda suggested that the low bid be thrown out as low bids often are. ICT General was frustrated, claiming the hardware shouldn't cost more than K14,000 - K15,000 at the most, proved it with ad prices, but CompTech Limited got the bid, this time through a renowned Epple franchise's new salesman, John.

A clause in the bid required the equipment to be operational in thirty days. Three months later the CompTech Limited installers contacted ICT General asking for help. ICT General found that CompTech Limited would have to develop special drives. ICT General reported this to the CCVU purchasing agent who called CompTech Limited Corporate Office (about the 30-day clause), they sent out two representives and fired the Epple store manager on the spot. John put his arm around the Store Manager, escorted him to CCVU HR office, and informed the HR officer that Computer Services had a new employee. The HR officer questioned the hiring; he soon left Business University Limited. The former Epple, CompTech Limited franchise Manager remained with Business University. The system finally came on line, but has had many problems during its operation.

Required

a) Evaluate whether the information presented in the case study raises questions about John's ethical philosophy? **(4 marks)**
b) If so, who should be concerned? **(2 marks)**
c) James Banda was apparently in a difficult situation. Should he have acted differently? **(3 marks)**
d) What lessons do you think ICT General has learnt from CCVU about ethics? **(4 marks)**
e) What actions should ICT General take? **(3 marks)**
f) Discuss what ethical action(s) the HR Officer could have taken? **(4 marks)**
g) Recommend the course of action any member of the CCVU faculty should take? **(5 marks)**

(Total 25 marks)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

CORPORATE GOVERNANCE AND BUSINESS ETHICS

GSB 5041

FINAL EXAMINATION

Tuesday, 23RD MARCH, 2021 **TIME 09:00 – 12:00 Hours**

INSTRUCTIONS

1. **This examination paper is divided into TWO Sections. Section A is compulsory and carries 50 marks.**
2. **Candidates should attempt TWO questions from Section B, all of which carry 25 marks each.**
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SECTION A

Question 1

Innovative Limited is a small company listed on the Lusaka Stock Exchange. The Company designs and installs high technology computer numerical control capital equipment used by multinational, transnational, international, global, and conglomerate manufacturing companies. As much as Innovative Limited is domiciled in Zambia, almost 90% of its sales are exported. Innovative Limited has sales offices in Europe, Asia, the Pacific, within Africa, and North and South America and employs about 6000 staff around the world.

Innovative Limited has annual sales of $500 million but the sales value of each piece of equipment sold is about $4 million so that sales volume is relatively low. Sales are always invoiced in the currency of the country where the equipment is being installed. The lead time between the order being taken and the final installation is usually several months. However a deposit is taken when the order is placed and progress payments are made by the customer before shipment and upon delivery, with the final payment being made after installation of the equipment.

Innovative Limited has international patents covering its technology and invests heavily in research and development (R&D). Therefore, R&D makes up about 15% of sale, and marketing costs to develop export markets about 25% of sales. Innovative Limited's manufacturing operations are completely outsourced in Zambia, and the cost of sales is about 20%. The balance of costs is for installation, servicing and administration, amounting to about 15% of sales. Within each of the cost classifications the major expenses (other than direct costs) are salaries for staff, all of whom are paid well above the industry average, rental of premises in each location and travel costs. Area managers are located in each sales office and have responsibility for achieving sales, installing equipment and maintaining high levels of aftersales service and customer satisfaction. Although the head office is very small, most of the R&D staff are located in Zambia along with purchasing and logistics staff responsible for liaising with the outsource suppliers, and a small accounting team that is primarily concerned with monthly management accounts and end of year financial statements.

Mr. Mane Faranga is an entrepreneur with a shareholding of 46% in Innovative Limited. Mane as an entrepreneur admits to taking high risks, both personally and in business. The Board of Directors comprises four members and is effectively controlled by Mr. Mane Faranga who is both Chairman and Chief Executive. The three other directors were appointed by Mr. Mane Faranga. They are his wife Mercy, who has a marketing role in the business,

and two non-executive directors, one an occasional consultant to Innovative limited and the other a long-term family friend. Board meetings are held quarterly and are informal affairs, largely led by Mane's verbal review of sales activity.

Mr. Mane Faranga is a dominating individual who exercises a high degree of personal control and influence often by-passing his area managers. Consequential to his control of the company, Mane is not particularly concerned with short-term profits but with the long-term. Mr. Mane Faranga emphasises two objectives: sales growth to generate increased market share and cash flow; and investment in R&D to ensure the long-term survival of Innovative Limited by maintaining patent protection and a technological lead over its competitors, therefore pursues competitiveness in this regard.

Mr. Mane Faranga is in daily contact with all his offices by telephone. He travels extensively around the world and has an excellent knowledge of Innovative Limited's competitors and customers. Mane uses a limited number of non-financial performance measures, primarily concerned with sales, market share, quality and customer satisfaction. Through his personal contact and his twin objectives, Mr. Mane Faranga encourages a culture committed to growth, continual innovation, and high levels of customer satisfaction. This is reinforced by high salary levels, but Mane enthusiastically dismisses those staff not committed to the objectives.

The company has experienced rapid growth over the last 10 years and is very profitable although cash flow is often tight. A high margin is achieved because Innovative Limited is able to charge its customers premium prices. The equipment sold by Innovative Limited enables faster production and better quality than its competitors can offer.

Mr. Mane Faranga has little respect and time for traditional accounting. Product costing is not seen as valuable because the cost of sales is relatively low and most costs incurred by Innovative Limited, particularly R&D and export marketing costs, are incurred a long time in advance of sales being made. R&D costs are not capitalised in Innovative Limited's balance sheet.

Although budgets are used for cost control as well as cost reduction, coupled with production of monthly management accounts, they have little relevance to Mane who recognises the fluctuations in profit caused by the timing of sales of low volume but high value capital equipment. Mr. Mane Faranga sees little value in comparing monthly profit figures against budgets because sales are erratic. However, Mane depends heavily on a spreadsheet to manage Innovative Limited's cash flow by using sensitivity analysis against his sales

and cash flow projections. Cash flow is a major business driver and is controlled tightly using the spreadsheet model.

The major risks facing Innovative Limited have been identified by Mr. Mane Faranga as:

- Competitor infringement of patents, which Innovative Limited always meets by instituting legal actions
- Adverse movements in the exchange rate between Zambia and Innovative Limited's export markets, which Innovative limited treats as an acceptable risk given that historically, gains and losses have balanced each other out.
- The reduction in demand for the equipment due to economic reasons
- A failure of continued R&D investment to maintain technological leadership; and
- A failure to control costs.

Mr. Mane Faranga considers that the last three of these risks are addressed by his policy of outsourcing manufacture and continuous personal contact with staff, customers and competitors.

Further, when Innovative Limited became listed, the Board of Directors appointed an external Non-Executive Director, Ms. Mary Zulu, a senior partner from a local firm of lawyers. However she only served as a Non-Executive Director for less than a year before resigning, as she had reservations about the way the Board of Director ran the company, and the role of Mr. Mane Faranga. Especially, she objected to Mr. Faranga's references to corporate governance codes as utopian and therefore, 'irrelevant to real-world business'.

Required

a) Identify and assess the existing controls within Innovative Limited (including those applied by Mr. Mane Faranga). **(10 marks)**

b) Write a report to the Board of Directors of Innovative Limited recommending improvements to the company's:

i) Corporate governance **(6 marks)**
ii) Risk management strategy **(6 marks)**
iii) Internal controls **(6 marks)**

Professional marks for structure, clarity, logical flow and layout of the statement. **(4 marks)**

(c) i) Evaluate the importance of the following underlying principles in the context of the corporate governance of Innovative Limited:

1) Fairness
2) Accountability
3) Transparency
4) Independence

(12 marks)

(ii) Identify the ethical viewpoint that treats implementation of corporate governance recommendations as the best means of maximising the value of Innovative Limited.

(6 marks)

(Total 50 marks)

SECTION B

Question 2

Mulenga Mule is a junior partner and training manager at Society Holdings, a medium sized firm of Auditors. He oversees the progress of the firm's student accountants. One of those under Mulenga's supervision, Joyce Banda, recently wrote in her progress and achievement log about a situation in an audit that had disturbed her.

On the recent audit of ABC Enterprises, a medium sized, family-run business and long standing client of Society Holdings, Joyce was checking non-current asset purchases when she noticed what she thought might be an irregularity. There was an entry of $400,000 for a security system for an address in a well-known holiday resort with no obvious link to the company. On questioning this with Maria Theo, the Director of Finance, Joyce was told that the system was for Mr Frank Bobo's holiday cottage (Frank Bobo is Managing Director, and a minority shareholder in Bobok Limited). She was told that Mr. Bobo often took confidential company documents with him to his holiday home and so needed the security system on the property to protect them. It was because of this, Maria said, that it was reasonable to charge the security system to the company.

Maria Theo expressed surprise at Joyce's concerns and said that auditors had not previously been concerned about the company being charged for non-current assets and operational expenses for Mr Bobo's personal properties.

Joyce told the engagement partner, David Phiri, what she had found and David simply said that the charge could probably be ignored. He did agree, however, to ask for a formal explanation from Mr. Frank Bobo before he signed off the audit. Joyce wasn't at the final clearance meeting but later read the following in the notes from the clearance meeting: 'discussed other matter with client, happy with explanation'. When Joyce discussed the matter with David afterwards she was told that the matter was now closed and that she should concentrate on her next audit and her important accounting studies.

When Mulenga Mule read about Joyce's concerns and spoke to her directly, he realised he was in an ethical dilemma. Not only should there be a disclosure requirement of Mr Bobo's transaction, but the situation was made more complicated by the fact that David Phiri was senior to Mulenga Mule in Society Holdings and also by the fact that the two men were good friends.

Required

a) Analyse the meaning of 'integrity' and its importance in professional relationships such as those described in the case. **(5 marks)**

b) Criticise David Phiri's ethical and professional behaviour in the case. **(10 marks)**

c) Critically evaluate the alternatives that Mulenga Mule has in his ethical dilemma. **(10 marks)**

(Total 25 marks)

Question 3

XYZ plc is a publicly quoted company which has been operating in Zambia for a number of years. Its products are based on raw materials grown in Zambia as well as tropical countries, and processed either in these countries or in the eventual sales markets. Processing is undertaken partly by XYZ plc and partly by sub-contractors. The products are branded and sold worldwide, but mainly in the United Kingdom, Asia, and North America. They are sold to consumers through a very large number of outlets. The Non-Executive Directors have for some time expressed concern that the company has not developed any systems of environmental or social reporting to shareholders, although many comparable companies already publish such information as part of their Annual Report. A government minister has now stated that legislation will be considered if all companies do not make progress on reporting on social and environmental policies. The Chief Executive Officer has always regarded reporting as ideally never exceeding legal requirements.

Required

(a) Construct a case for including a report on environmental and social issues in the annual report. **(6 marks)**

b) Identify the main issues that could be covered in the environmental and social report. **(8 marks)**

c) Analyse the impact of business partners and other stakeholders on the content of the environmental and social report. **(5 marks)**

d) Identify the information that the Board of Directors requires to review the company's progress on environmental and social issues. **(6 marks)**

(Total 25 marks)

Question 4

Trade Queens Limited a company based in Zambia, was recently wholly acquired by European Investments, a European holding company. The new owners took the opportunity to completely review Trade Queens Limited's management, culture and systems. One of the first things that European Investments questioned was Trade Queens Limited's longstanding corporate code of ethics.

The Board of Directors of European Investments said that it had a general code of ethics that Trade Queens Limited, as a subsidiary of European Investments, should adopt. Jay Patel, the Chief Executive Officer of Trade Queens Limited, disagreed however, and explained why Trade Queens Limited should retain its existing code. He said that Trade Queens Limited had adopted its code of ethics in Zambia which was often criticised for its unethical business behaviour. Some other companies in the country were criticised for their 'sweat shop' conditions. Trade Queens Limited's adoption of its code of ethics, however, meant that it could always obtain orders from European customers on the guarantee that products were made ethically and in compliance with its own highly regarded code of ethics. Mr. Patel explained that Trade Queens Limited had an outstanding ethical reputation both locally and internationally and that reputation could be threatened if it was forced to replace its existing code of ethics with European Investments' more general code.

When Mr. Stein Ivor, a senior Director from European Investments' head office, visited Mr. Patel after the acquisition, he was shown Trade Queens Limited's operation in action. Mr. Patel pointed out that unlike some other employers in the industry, Trade Queens Limited didn't employ child labour. Mr. Patel explained that although it was allowed by law in the country, it was forbidden by Trade Queens Limited's code of ethics. Mr. Patel also explained that in his view, employing child labour was always ethically wrong.

Mr. Ivor asked whether the money that children earned by working in the relatively safe conditions at Trade Queens Limited was an important source of income for their families. Mr. Patel said that the money was important to them but even so, it was still wrong to employ children, as it was exploitative and interfered with their education. He also said that it would alienate the European customers who bought from Trade Queens Limited partly on the basis of the terms of its code of ethics.

Required

a) Describe the purposes and typical contents of a corporate code of ethics.

(9 marks)

'Strategic positioning' is about the way that a company as a whole is placed in its environment and concerns its 'fit' with the factors in its environment.

b) With reference to the case as appropriate, explain how a code of ethics can be used as part of a company's overall strategic positioning.

(7 marks)

c) Assess Mr. Patel's belief that employing child labour is 'always ethically wrong' from deontological and teleological (consequentialist) ethical perspectives.

(9 marks)

(Total 25 marks)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

NOVEMBER 2019 COHORT FINAL EXAMINATION

ECONOMICS: GLOBAL AND FIRM LEVEL PERSPECTIVES (GSB 5052)

TIME ALLOWED: THREE (3) HOURS

DATE: 14TH DECEMBER, 2020

INSTRUCTIONS TO THE CANDIDATE

1. *Enter your computer (GSB) number on the answer booklet. Do NOT write your name.*
2. *You must not start writing your answers in the booklet until you are told to do so by the invigilator*
3. *Mark allocations are shown in brackets.*
4. *Attempt all questions in section A and Choose any three (3) questions in Section B*
5. *Candidates should show calculations and well labelled graphs were appropriate*

SECTION A (25 marks)

1. If a household's disposable income increases from K10,000 to K15,000 and its consumption expenditure increases from K8,000 to K11,000 then the marginal propensity to consume is:

   A. 1.4

   B. 0.6

   C. 0.8

   D. 1.7

2. The multiplier is higher:

   A. the lower is the marginal propensity to consume and the lower is the marginal propensity to import

   B. the higher is the marginal propensity to consume and the lower is the marginal propensity to import

   C. the lower is the marginal propensity to consume and the higher is the marginal propensity to import.

   D. the higher is the marginal propensity to consume and the higher is the marginal propensity to import.

3. If the marginal propensity to consume is 0.8 and there are no taxes or trade what is the simple autonomous expenditure multiplier?

   A. 1.25

   B. 5

   C. 0.8

   D. 0.2

4. Which one of the following will have net exports directly measured in the method used to calculate Gross Domestic Product (GDP)?

   A. the income method

   B. the expenditure method

   C. the investment method

   D. the product method

5. Assume that the marginal propensity to consume for domestically produced goods is 0.7 and there are no taxes. The government decides to increase public spending by K100 million. According to simple Keynesian multiplier analysis, what is likely to be the total change in national income resulting from this increase in government expenditure (to the nearest million)?

A. K70 million

B. K333 million

C. K143 million

D. K170 million

6. Which of the following will increase the size of the government expenditure multiplier?
   A. An increase in the marginal propensity to save.
   B. A decrease in the marginal propensity to consume.
   C. A decrease in the marginal propensity to import
   D. An increase in income tax rates.
7. In the circular flow of income model:
   A. savings, taxes and investment are withdrawals.
   B. investment, government expenditure and imports are injections.
   C. savings, imports and taxes are withdrawals.
   D. investment, exports and consumption are injections.
8. Which of the following does NOT form part of a country's Gross Domestic Product?
   A. salaries of school teachers
   B. company profits.
   C. net income from abroad
   D. investment expenditure.
9. To obtain a measure of Net National Income from Gross Domestic Product it is necessary to:
   A. add net income from abroad and deduct transfer payments.
   B. deduct net income from abroad and add capital depreciation.
   C. add net income from abroad and deduct capital depreciation.
   D. add net income from abroad.
10. Which of the following statements below is always TRUE?
   A. Opportunity cost is equal to total revenue minus total variable cost.
   B. Opportunity cost is constant.
   C. Opportunity cost is the cost in terms of the best foregone alternative
   D. Opportunity cost is the addition to total cost of producing one extra unit of a good.
11. Which one of the following will shift the supply curve for Good X to the left?
   A. a fall in the price of raw materials used to produce Good X
   B. a decrease in wages in industry X.
   C. a government subsidy on the production of Good X.
   D. a decrease in labour productivity in industry X
12. Good X is an inferior good. A fall in consumer income when the supply curve for Good X is positively sloped will cause which one of the following?
   A. the demand for Good X to fall and price of Good X to fall.
   B. the demand for Good X to fall and price of Good X to rise.
   C. the demand for Good X to rise and price of Good X to fall
   D. the demand for Good X to rise and price of Good X to rise
13. Assuming that the marginal and average cost curves are unchanged then, following a shift in the demand curve to the right, firms in a perfectly competitive industry will:
   A. keep their price constant in both the short run and the long run.

B. raise their price in both the short run and the long run.
C. keep their price constant in the short run but raise their price in the long run.
D. raise their price in the short run but restore the price back to its original level in the long run.

14. The profit maximising output for a monopoly is at the point where the:
A. marginal cost curve cuts the demand curve.
B. average cost curve cuts the marginal revenue curve.
C. average cost curve cuts the demand curve.
D. marginal cost curve cuts the marginal revenue curve.

15. Which one of the following is NOT a barrier to entry into a monopoly market?
A. significant economies of scale
B. heavy potential advertising costs.
C. large capital requirements.
D. constant returns to scale

16. Which one of the following statements about market structures is FALSE?
A. Under monopoly, a profit maximising firm with positive marginal costs always produces in the region of price inelastic demand.
B. Under perfect competition, in the long run all firms produce where marginal costs equal average revenue.
C. Under monopolistic competition firms produce differentiated products.
D. Under oligopoly, firms make decisions taking into account the possible reactions of their competitors.

17. A country with a population of 20 million has 15 million in employment and 1 million unemployed. What is the unemployment rate?
A. 6.25%
B. 4.76%
C. 5.0%
D. 6.67%

18. The business cycle is defined as:
A. the periodic fluctuations of output around the long run trend.
B. the annual cycle of output.
C. the long run trend path of output after removing short run variations.
D. none of the above.

19. If the rate of inflation is higher than the anticipated rate used for negotiating interest rates and wages:
A. borrowers will gain at the expense of lenders and employers will gain at the expense of workers.
B. lenders will gain at the expense of borrowers and employers will gain at the expense of workers.
C. lenders will gain at the expense of borrowers and workers will gain at the expense of employers.
D. borrowers will gain at the expense of lenders and workers will gain at the expense of employers.

20. As a result of a change in economic policy, interest rates and consumption rise but investment falls. The new policy is most likely to have been:
A. an expansionary fiscal policy.
B. an expansionary monetary policy.

C. a contractionary fiscal policy.
D. a contractionary monetary policy.

21. Which one of the following will NOT happen following a devaluation of the domestic currency on the foreign exchange market?
    A. Exports become cheaper when measured in the foreign currency.
    B. Export volumes will decrease.
    C. Imports become more expensive when measured in the domestic currency.
    D. Import volumes will decrease.

22. If public transport is an inferior good, which of the following will cause its demand curve to shift to the left?
    A. A rise in the price of cars.
    B. An increase in consumers' incomes.
    C. An increase in the price of petrol.
    D. An increase in the price charged to use public transport.

23. If ice cream is a substitute for fruit sorbet and strawberries are a complement to ice cream but not fruit sorbet then a fall in the price of ice cream will:
    A. increase the demand for fruit sorbet and strawberries.
    B. decrease the demand for fruit sorbet and increase the demand for strawberries.
    C. decrease the demand for fruit sorbet and strawberries.
    D. increase the demand for fruit sorbet and decrease the demand for strawberries.

24. Diseconomies of scale means:
    A. short run average total cost falls as output rises.
    B. long run average total cost rises as output rises.
    C. long run average total cost falls as output rises.
    D. short run average total cost rises as output rises.

25. When a monopolist maximises profits, price exceeds marginal revenue. The difference between price and marginal revenue occurs because:
    A. the firm has to charge a price higher than the marginal cost of producing the last unit.
    B. the firm has to reduce the price on all previous units sold in order to sell the additional unit.
    C. any decision by the monopolist to sell an additional unit of output does not affect price.
    D. the law of diminishing returns directly affects the price of an imperfectly competitive firm's product.

26. Which of the following is NOT a cost of inflation?
    A. Menu costs.
    B. Cost of employing extra resources.
    C. Arbitrary redistribution of wealth from borrowers to lenders.
    D. Arbitrary redistribution of wealth from lenders to borrowers.

27. In the circular flow of income model which of the following is TRUE?
    A. Savings, taxes and investment are withdrawals.
    B. Exports, imports and government expenditure are withdrawals.
    C. Investment, government expenditure and exports are injections.
    D. Investment, exports and consumption are injections.

28. If the government imposes a minimum wage that is above the market equilibrium wage we would expect:
    A. an increase in the quantity of labour demanded.
    B. the labour supply curve to shift to the left.
    C. an increase in the quantity of labour supplied.
    D. the demand for the labour curve to shift to the left.
29. The adoption of an expansionary fiscal policy will result in:
    A. an increase in aggregate demand and a reduction in real output and unemployment.
    B. an increase in aggregate demand, real output and unemployment.
    C. an increase in aggregate demand and real output and a reduction in unemployment.
    D. a reduction in aggregate demand and real output and an increase in unemployment.
30. The "crowding out" effect associated with an increase in government borrowing could be reduced or eliminated by an accommodating increase in:
    A. government expenditure.
    B. taxation.
    C. money supply.
    D. transfer payments.

SECTION B (ANSWER ANY THREE (3) QUESTIONS FROM THIS SECTION)

QUESTION ONE

a) If a country has demand pull inflation, demand management policies can be used to curb this inflation. Suppose you have been hired to provide policy advice to the central bank, explain fully how demand pull inflation can be cured using restrictive monetary policy; *(Hint: use bullet points or clearly number each monetary policy intervention before explaining it. Ensure you provide a complete transmission mechanism of each restrictive monetary policy intervention)* [9 marks]

b) An exclusive pen manufacturer sells 4,000 pens per month at a price of K40 each. When the price is reduced to K30 sales increase to 6,000 pens per month.
    i. Calculate the price elasticity of demand for the pens over this price range [3 marks].
    ii. Is demand elastic, unit elastic or inelastic? [1 mark]
    iii. Calculate the change in revenue due to the change in price [3 marks].

c) With the aid of a diagram, explain the relationship between Price Elasticity of Demand and Total Revenue [7 marks]

d) What is Price Discrimination? [2 marks]

QUESTION TWO

a) With the aid of a well labelled diagram, explain fully your understanding of the kinked demand curve [8 marks]

b) Explain fully the three(3) approaches of measuring GDP [9 marks]

c) Distinguish between GDP and GNP [2 marks]

d) Explain the three (3) limitations of the Consumer Price Index (CPI) [6 marks]

QUESTION THREE

a) List the five (5) objectives of a modern Central Bank [5 marks]

b) With the aid of a diagram, explain (diagram) for each of the following; *(Hint: clearly indicate the causes for the two types of inflation)*

i. Demand Pull Inflation[5marks]

ii. Cost Push Inflation [5 marks]

iii. Deflationary Gap [5 marks]

iv. Inflationary Gap [5 marks]

QUESTION FOUR

a) With the aid of a diagram, show the Costs and Benefits of a Tariff for the importing Country *(Hint: draw well labelled diagram only and do not explain anything but provide a key to show what the various sections represent on your diagram)* [5 marks]

b) Discuss any five (5) weaknesses of National Income Statistics as a measure of Welfare for a country [5 marks]

c) With the help of graphical illustrations, compare and contrast the Perfect Competition and Monopoly models of Market Organisation *(Hint: ensure you draw separate graphs for above normal profit, normal profit and loss cases for both perfect completion and monopoly)* [15]

QUESTION FIVE

a) The table below shows the demand schedule for a good. Complete the following table with the total expenditure and indicate in the elasticity column whether the good is elastic or inelastic over that price range [10 marks]

Price (K)	Demand (per week)	Total expenditure	Elasticity - elastic / inelastic?
1	50		
2	40		
3	30		
4	25		
5	20		
6	16		
7	13		
8	10		
9	8		
10	5		

b) Explain the following; supported graphically where necessary:

i. Movement along the demand curve and shift in the demand curve [2 marks]

ii. Provide an example of a normal good; a necessity; and an inferior good. What type of income elasticities may we expect from each of them and why? [3 marks]

c) Given the price of a ticket to a film show of K41 and at that price, the quantity of tickets demanded is 17,000 per show. Using the midpoint method of calculating percentage changes, if the price is raised to K48 and the quantity demanded decreases to 16,000 what is the elasticity of demand [1 mark]

d) When the price of a bun increases from K2 to K4, the quantity demanded decreases from 50 to 40. Using midpoint (arc) method, compute the price elasticity of demand [1 mark]

e) A firm can sell 10 units if the price is K100 and can sell 8 units if the price is K125. Using the midpoint (arc) method, what is the price elasticity of demand? [1 mark]

f) During last year the price of regular unleaded fuel increased by 11.0 per cent. If the price elasticity of demand for fuel gasoline was 0.13, compute the change in quantity demanded due to the price increase [1 mark]

g)

Price (kwacha per skirt)	Quantity demanded (skirts per year)
20	30
35	25

Using the data in the table above, what is the PED when the price of a skirt rises from K20 to K35? From the answer, what is the nature of elasticity? [1 mark]

h) Define price elasticity of supply. [2 marks]

i) Suppose the current price of barley is K7 per Kilo, at that price 100,000 kilos are grown by a farmer. If the price of barley rises to K8 and quantity supplied increases to 130,000 kilos, use the midpoint method to determine the price elasticity of supply for barley. [1 mark]

j) What type of goods are two goods which if a 1 per cent increase in the price of *X* increases the quantity demanded of Y by 2 per cent? What is the cross price elasticity of demand? [2 marks]

END OF FINAL EXAMINATION

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

MAY 2020 COHORT FINAL EXAMINATION

ECONOMICS: GLOBAL AND FIRM LEVEL PERSPECTIVES (GSB 5052)

TIME ALLOWED: THREE (3) HOURS

DATE: 9TH MARCH, 2021

INSTRUCTIONS TO THE CANDIDATE

1. *Enter your computer (GSB) number on the answer booklet. Do NOT write your name.*
2. *You must not start writing your answers in the booklet until you are told to do so by the invigilator*
3. *Mark allocations are shown in brackets.*
4. *Attempt all questions in section A and Choose any four (4) questions in Section B*
5. *Candidates should show calculations and well labelled graphs were appropriate*

SECTION A (20 marks)

1. The main categories of economic resources are:

   A natural resources, labour and money.

   B natural resources, labour and capital.

   C labour, money and factories.

   D natural resources, capital and factories.

2. In economics the concept of scarcity means:

   A there are unlimited wants and limited resources.

   B there are unlimited resources, we just have an allocation problem.

   C all resources will eventually be exhausted.

   D all of the above.

3. Good Y has a cross elasticity of demand with respect to Good X of 0.5 and 100 units of Good Y are demanded when Good X costs 50 ngwee. A rise in the price of Good X to 75 ngwee will lead to a change in the demand for Good Y to:

   A 150 units.

   B 50 units.

   C 75 units.

   D 125 units.

4. The demand equation for Good X is $Qd = 15 - 0.5P$ and the supply equation for Good X is $Qs = 3 + 2P$, where P is the price. When the price is K6 there will be:

   A a surplus of Good X and price will rise.

   B a surplus of Good X and price will fall.

   C a shortage of Good X and price will fall.

   D a shortage of Good X and price will rise.

5. A demand curve which has price elasticity of minus one throughout its length will be:

   A downward sloping.

   B horizontal.

   C upward sloping.

   D vertical.

6. Which one of the following is TRUE when economies of scale are present?

   A The short run average cost declines.

   B If inputs are doubled then output less than doubles.

   C An increase in the variable factor of production holding the fixed factor of production constant leads to a higher increase in output.

D The long run average cost curve declines.

7. Which of the following statements is TRUE?

   A Marginal physical product is equal to total physical product divided by average product.

   B Average physical product can never become negative.

   C Marginal physical product can never become negative.

   D Average physical product is always greater than marginal physical product.

8. According to the law of diminishing marginal utility, the total satisfaction that a consumer gets from consuming Good X will:

   A rise at a decreasing rate as consumption of Good X increases.

   B rise at an increasing rate as consumption of Good X increases.

   C fall at an increasing rate as consumption of Good X increases.

   D fall at a decreasing rate as consumption of Good X increases.

9. A perfectly competitive firm is producing at a level of output where short run marginal cost is rising and exceeds marginal revenue. What should the firm do to maximise its short run profits?

   A Reduce its price.

   B Raise its output.

   C Raise its price.

   D Reduce its output.

10. For a monopoly, price exceeds marginal revenue because:

    A the firm has to charge a price higher than the marginal cost of producing the last unit.

    B the firm has to reduce price on all units sold in order to sell an additional unit.

    C any decision by the monopolist to sell an additional unit of output does not affect price.

    D of the law of diminishing returns.

11. A profit maximising oligopolistic firm has marginal cost of K3 at all levels of output and operates under the belief that the demand curve for its output is kinked at a price of K10. Provided its marginal costs are between K2 and K4, it sells its commodity at a price of K10. If new technology reduces its marginal cost to K1.50 at all levels of output the firm should:

    A lower the price and raise output.

    B maintain the existing price and output.

    C lower the price but maintain existing output.

    D maintain the existing price and raise output.

12. What is the combined effect of an increase in the cost of production and a rise in consumer income on the equilibrium price and quantity of an inferior good?

A The effect on quantity is indeterminate but price will rise.

B The effect on price is indeterminate but quantity will rise.

C The effect on quantity is indeterminate but price will fall.

D The effect on price is indeterminate but quantity will fall.

13. Assume two countries, with the same level of technology and resources, do not presently trade. In Country X one unit of labour and one unit of capital can produce 20 units of Good A or 15 units of Good B. In Country Y one unit of labour and one unit of capital can produce 50 units of Good A or 25 units of Good B.

Country	Good A	Good B
X	20	15
Y	50	25

Which of the following is TRUE?

A Country X has an absolute advantage in the production of Good B.

B Country Y has a comparative advantage in the production of Good A.

C Country X has an absolute advantage in the production of Good A.

D Country Y has a comparative advantage in the production of Good B.

14. Which of the following is a possible explanation for an increase in the average price level and a decrease in real national income?

A A decrease in short run aggregate supply.

B An increase in short run aggregate supply.

C An increase in aggregate demand.

D A decrease in aggregate demand.

15. If the central bank has to intervene in the foreign exchange markets to prevent the home currency from appreciating, then its foreign exchange reserves will:

A decrease and the domestic money supply will rise.

B decrease and the domestic money supply will fall.

C increase and the domestic money supply will fall.

D increase and the domestic money supply will rise.

16. Which of the following is least likely to lead to an increase in long run economic growth?

A An increase in capital investment expenditure.

B An increase in the money supply.

C An increase in education expenditure.

D An increase in research and development expenditure.

17. If the rate of inflation is lower than the anticipated rate used for negotiating interest rates and wages:

A lenders will gain at the expense of borrowers and workers will gain at the expense of employers.

B borrowers will gain at the expense of lenders and employers will gain at the expense of workers.

C borrowers will gain at the expense of lenders and workers will gain at the expense of employers.

D lenders will gain at the expense of borrowers and employers will gain at the expense of workers.

18. Which of the following is NOT a feature of an industry characterised by monopolistic competition?

A There are many firms.

B Firms sell differentiated products.

C A firm can raise its price without losing all its customers.

D In the long run monopolistic powers enable firms to make excess profits.

19. In the long run, a firm operating under conditions of monopolistic competition will produce at an output at which:

A average total cost is less than average revenue.

B average total cost equals average revenue.

C average total cost is at a minimum.

D marginal cost is equal to average total cost.

20. The idea that an oligopolistic firm faces a kinked demand curve is based upon the assumption that:

A a firm's competitors match its price decreases but ignore its price increases.

B one firm in the industry sets the price for all other firms.

C a firm's competitors match both its price increases and price decreases.

D prices can either rise or fall; it depends on what happens to a firm's competitors' prices.

SECTION B (ANSWER ANY FOUR (4) QUESTIONS FROM THIS SECTION)

QUESTION ONE

a) The Annual inflation rate for February, 2021 increased to 22.2 percent from 21.5 percent recorded in January 2021. This means that on average, prices of goods and services increased by 22.2 percent between February 2020 and February 2021. This was a change of 0.7 percentage points compared to 2.3 percentage points change in January. This was mainly attributed to increases in prices of food items such as Cereals (Rice, Millet, Sorghum); Meats (Fillet steak, Rump steak, Brisket, Mixed cut); Fish (Frozen Fish, Buka Buka, Fresh Kapenta, Dried Kapenta); Fruits (Oranges, Pineapples, Pawpaw, Mangoes);Vegetables (Tomatoes, Spinach, Fresh Maize, Onion, Carrots);Fats & Oils (Margarine, Butter, Cooking Oil); milk and eggs. Assuming that this inflation is demand pull, demand management policies can be used to curb this inflation. You have been asked by your study group to make a presentation on the policy advice you may give to the central bank, explain fully how demand pull inflation can be cured using restrictive monetary policy; *(Hint: use bullet points or clearly number each monetary policy intervention before explaining it. Ensure you provide a complete transmission mechanism of each restrictive monetary policy intervention)* [6 marks]

b) With the aid of a diagram, explain the relationship between Price Elasticity of Demand and Total Revenue [6 marks]

c) What are tariffs? [1 mark]

d) Distinguish between specific and Ad valorem tariff [2 marks]

e) What are import quotas and export restraints? [2 marks]

f) Assume a model with expenditure- income identity. If the marginal propensity to save is 0.15, the income tax rate is 0.25 and the marginal propensity to import is 0.1. Calculate the size of the investment multiplier. [3 marks]

QUESTION TWO

a) With the aid of a well labelled diagram, explain fully your understanding of the kinked demand curve *(Hint: ensure you clearly explain the cause of the kink)* [6 marks]

b) Explain fully the three(3) approaches of measuring GDP [6 marks]

c) Define the following;

i. Flexible exchange rate system [1 mark]

ii. Fixed exchange rate system [1 mark]

d) Explain in detail the effects on imports and exports of the following;

i. Depreciation of home country's currency [3 marks]

ii. Appreciation of home country's currency [3 marks]

QUESTION THREE

a) Discuss fully giving relevant examples applicable to Zambia any four (4) objectives of a modern Central Bank [8 marks]

b) With the aid of a diagram, explain each of the following; *(Hint: clearly indicate the state of the economy including the position of actual versus potential output and the fiscal policies to resolve the problems where applicable)*

i. Deflationary Gap [4 marks]

ii. Inflationary Gap [4 marks]

iii. Business Cycle [4 marks]

QUESTION FOUR

a) With the aid of a diagram, show the Costs and Benefits of a Tariff for the importing Country *(Hint: draw well labelled diagram only and do not explain anything but provide a key to show what the various sections represent on your diagram)* [6 marks]

b) The table below shows the output of wheat, millet and rice and their corresponding prices that Zambia produced in 2004, 2005 and 2006 respectively.

PRODUCT	2004		2005		2006	
	Quantity	Price	Quantity	Price	Quantity	Price
Wheat	500	20	510	25	550	27
Millet	220	10	600	12	580	18
Rice	800	30	700	35	750	35

i. Calculate nominal GDP for each year [3 marks]

ii. Calculate real GDP for each year using 2004 as the base year [3 marks].

iii. Calculate the GDP deflator for each year taking 2004 as the base year [3 marks].

iv. Calculate the GDP growth rates for the years 2005 and 2006[2 marks].

v. What is the difference between GDP deflator and the consumer price index (CPI) [2 mark].

vi. Why is real GDP preferred as a measure of economic growth? [1 mark]

QUESTION FIVE

a) Write brief notes on the Harrod- Domar Growth Model [5 marks]

b) Define the following;

i. Economic Growth [1 mark]

ii. Economic Development [1 mark]

c) With the help of graphical illustrations, compare and contrast the Perfect Competition and Monopoly models of Market Organisation (Hint: ensure you draw separate graphs for above normal profit, normal profit and loss cases for both perfect completion and monopoly) [5 marks]

d) When a bank makes a loan from its reserves, the money supply increases. The money supply is affected by the amount deposited in banks and the amount that banks loan. Use the T- Account to demonstrate the credit creation process when the initial deposit of K25,000 is made into the banking system and the reserve ratio is 7%. Demonstrate this process upto the 4th Bank [8 marks]

END OF FINAL EXAMINATION

UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

ACCOUNTING INFORMATION FOR CAPITAL MARKETS (GSB6004)

FINAL EXAMINATION

27 JULY 2017

14:00-17:00 HOURS

Time allowed: Three (3) Hours

Instructions to Candidates:

1. **Check that you have the correct examination paper in front of you.**
2. **The paper has two (2) sections; A and B. Section A has 10 multiple choice questions and carries a total of 25 marks while Section B, has four (4) essays type questions from which you are required to choose three(3) only.**
3. **No books, files or mechanical / electronic aids (EXCEPT CALCULATORS) are permitted.**
4. **There shall be no form of communication between students during the examination. Any students caught doing this will be disqualified.**

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

Section A

Answer all questions in this section. Each question carries 2.5 marks.

Question one(1)

1.1 From the data that follows, the inflation adjusted principle and the semi-annual coupon as at 31st December 2014 is close to:

Data:

Bond characteristics:

Coupon rate: 8%

Face value: USD 10,000

Economic variables:

2014	Annual inflation rate	6 month Libor rate
1 January	12%	4.50%
1 July	10%	3.75%

	Principle ($)	Coupon($)
A	11,130	445.20
B	11,130	890.40
C	10,500	890.40

1.2 Which of the following is a characteristic of liquidity markets?

A. Market depth
B. Market prices which increase or decrease by large margins
C. Information efficiency and wide bid-ask spreads

1.3 Which of the following valuation methods is cash flow based?

A. Dividend discount model
B. Tobin-Q
C. Price-to-book value ratio based model

1.4 Using the following data and assuming there was a 5 for 1 share stock split, the new divisor for the price weighted index would be close to:

Stock	Price	# shares
W	20	100000
X	50	50000
Y	30	200000
Z	41	150000

A. 4.0
B. 2.8
C. 2.9

Data for questions 1.5 and 1.6

Suppose there are three sell orders placed for a stock in a day, the table below shows bid and asked quotes at various points in a day.

10 a.m.	12.10	300	12.16	400
1 p.m.	12.00	300	12.07	400
2 p.m.	11.80	300	11.88	400

Assume the following trades take place:

- At 10 a.m. the trader placed an order to sell 100 shares. The execution price was $12.51.
- At 1 p.m. the trader placed an order to sell 300 shares. The execution price was $12.20.
- At 2 p.m. the trader placed an order to sell 600 shares. The average execution price was $11.65.

1.5 What is the average quoted spread is

A. 0.06
B. 0.07
C. 0.08

1.6 The effective spread for the 1 P.M transaction is closest to:

A. -0.24
B. -0.33
C. 0.30

1.7 What is the value of a five year zero coupon bond with annual payments ,face value of $1,000 and a yield to maturity of 6.5%?

A. 730
B. 274
C. 726

1.8 Assume the same data as in 17 above, what will be the monetary benefit to the bond holder at maturity

A. 270
B. 274
C. 726

1.9 Which of the following is not one of the list rules under LUSE?

A. Minimum subscribed capital of K250,000
B. Minimum of 10 million shares in issue
C. 5 years financial statements

1.10 Which of the following is not a function of security market brokers in typical securities market?

A. Market making
B. Provide security advise to market participants
C. Record keeping and provision of services for a commission

SECTION B

There are four questions in this section; you are required to answer any three.

Question two (2)

A) Discuss the efficient market hypothesis (EMH) and its implications to technicians, fundamentalist and brokers and insiders. **(15 marks)**

B) Discuss some of the uses security valuation **(4 marks)**

C) General Motors (NYSE) sells for $66.00 per share. The expected dividend for the next year is $2.40. Use the following single period dividend discount model(DDM) to predict General Motors' stock price one year from today assuming:

(i) The risk free return is 5.3%

(ii) The market risk premium is 6.0%;and

(iii) The GM's beta is 0.90

$$V_0 = \frac{D_0(1+g)}{r-g} = \frac{D_1}{r-g}$$

(6 marks)

[Total 25 Marks]

Question three (3)

A) Given the following data, calculate the index value using:

i) Price weighted;

ii) Market value weighted;

iii) Discuss two weaknesses of each method.

Stock	Price	# shares
W	20	100000
X	50	50000
Y	30	200000
Z	41	150000

iv) Assuming there is 5 for 1 split for stock X and 1 for 2 consolidations for stock w, calculate the divisor for the price weighted index.

(10 marks)

B) You have just issued a Zero coupon bond that has a face value of $20,000, a maturity period of 10 years and promises to yield 9%.

i) Discuss the possible factors behind(motivating) the issuance of such a bond

(3 marks)

ii) Calculate the value of this bond and estimate the monetary gain for an investor.

(3 marks)

C) A bond prospectus has the following coupon structure:

Coupon Rate = Quarterly CPI + 500 basis points

It has a floor of 12% and a cap of 21%. Given the following quarterly CPIs, calculate the coupon rate and the size of coupon for each quarter if the coupon rate is reset on 1st January, 1st April, 1st July and 1st October clearly stating the date of coupon payment in each case.

End of Quarter	CPI (%)
31 Dec 2015	19.75
31 Mar 2016	18.25
30 Jun 2016	7.25
30 Sep 2016	13.75
31 Dec 2016	6.75

(9 marks)

Question four (4)

A) Discuss the usefulness of secondary capitals markets to issuers of securities and investors **(5 marks)**

B) Justify the need to heavily regulate the capital markets globally **(5 marks)**

C) Evaluation the use of information from financial statements in the capital markets **(6 marks)**

D) On 1st January, 2015 an investor bought 500,000 shares of stock in Sat Ltd at a price of K20/share on margin. The conditions under which she bought the stock were as follow:

Initial margin%	50
Maintenance margin%	30
Interest on borrowed funds	25% p.a.
Brokerage and similar fees	K1.50/share

i) Assuming the price of stock on 31st January 2015 stood at K30/share, calculate the return on equity (after all expenses).

(4 Marks)

ii) Based on the available information, is the investor likely to receive a margin call from the broker?

(2 Marks)

[Total 25 Marks]

Question five (5)

A) On Wednesday, the stock closes at $50 a share. On Thursday morning before the market open, the portfolio manager decides to buy some shares and makes a limit order for 1,000 at $49.95/share. The order expires unfilled. The stock closes at $50.05. The order is revised on Friday to a limit of $50.07. This is partially filled that day as 700 shares are bought at $50.07. The commission is $23.00. The stock closes at $50.09 and the order is cancelled.

Required:

Calculate the implementation short fall in (USD) and the following components: explicit cost, delay or slippage cost, missed trade opportunity cost and the realized profit

(12 marks)

B) Discuss the value of information in securities markets and identify type of information that will be relevant to equity holders and bond holders.

(13 marks)

[Total 25 Marks

END

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Post Graduate Final Differed and Supplementary Examinations

Wednesday 10th March, 2021

HRM5012: Organisation Design and Human Resource Planning

Instructions Format

1. Time Allowed: **3 hours**
2. **Answer Four (4) Questions in this paper. Question One is Compulsory**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question 1 (compulsory)

The Capital Organisation is located in the capital city of a Central European country. In the past its main clientele has been government officials and administrators in departments of state and managers of heavy industries visiting the capital on official government business. The room occupancy rate was on average 50%. This custom has declined somewhat in the last two years, but it has been more than replaced by business-people from neighbouring countries in the week and by foreign tourists at the weekend. The average room occupancy rate is now 75%; 60% of rooms are sold at 'rack' price and it is not uncommon for the organisation to be fully booked especially at weekends. Generally speaking, there is greater demand for catering staff at weekends since many tourists like to take lunch in the organisation's restaurant. However, there is lower demand for housekeeping staff at weekends as tourist customers generally stay for longer periods than business-people and make less demands on this service.

Currently the organisation has 240 twin rooms but an extension is now being built and next year there will be 345 twin rooms altogether plus a revamped leisure club with a brand-new swimming pool and spa (run independently as a franchise). The owning company, European Leisure Resorts, wishes to reposition the organisation, re-designing and re-branding the organisation as an up-market "boutique" organisation. A new name is proposed, "The Garden Court". A new General Manager has been "head-hunted" from one of Russia's top organisations and her mission is to transform the quality of the organisation while ensuring good value for money.

Competitive Pressures and Strategic Responses

During the last two years a number of international organisation groups have opened organisations in the city to cater for the new markets. All of these are known for their high standards of service. Prices are correspondingly high. The management of Capital Organisation believe that to compete they need to improve the standard of service whilst pegging prices some 10% below their competitors. A survey of customers has indicated that customers would like the checking-in process to be made quicker, for service in the restaurants to be speedier and more friendly and for the rooms and public areas to be decorated and furnished to a higher standard.

Organisation Staffing

There are three departments in the organisation – front-of-house/administration, housekeeping/maintenance, and catering. Reception work on a three shift system 'around the clock'. Housekeeping works on a single shift system (from 06:30-16:00) with some overtime working to cover evening cleaning duties. Catering operates a two shift system from 06:00-15:00 and 15:00-24:00. Housekeeping staff are usually idle for about 2 hours of their shift. By contrast catering staff are very busy for their entire shift. Staff in the maintenance division of housekeeping have very variable workloads, often working under low pressure during their normal 07:00-15:30 shift but then having to work under intense pressure, and being paid "double-time", if there is a maintenance fault that needs urgent repair during the evenings or at weekends. Two of these staff are paid a small, out of hours, on-call standby fee.

The management staff are usually recruited from outside the organisation, whilst departmental supervisors are usually promoted from within the department. Training and

development is mostly on an *ad hoc*, as needed "on-the-job" basis although 0.4% of total salary costs are spend on formal training which consists mostly of sending staff on statutory health, safety and hygiene training courses.

Labour Turnover in the Organisation

Until two years ago the average annual turnover rate (*i.e.* the proportion of staff leaving during the year) was 10%. Half of this figure was composed of employees retiring (retirement age is 65). Over the last two years the annual turnover rate has gone up to 25%. One-fifth of those leaving were retirements. Three fifths of those leaving were in the catering department. Two-fifths of those leaving had less than six months' employment.

a) Identify the HRM problems being faced by this company? How would the company mitigate its HRM problems? (12 marks)
b) Which job(s) need redesigning and why? (8 marks)
c) What kind org organisation structure do you think this firm has? What are the advantages and disadvantages of such a structure? Would you suggest any other structure (justify your answer)? (10 marks)
d) Analyse the recruitment practice in the organisation (10 marks)

SECTION B

Question 2

Explain the reason for and methods of evaluating human resource strategies (20 Marks)

Question 3

Demand forecasting is the determination of the organisations future HR needs. What methods would you use any why? (20 marks)

Question 4

a) Discuss the reasons for increased importance for HRP despite the unpredictability of most business environments (10 marks)

b) How can one ensure that the recruitment and selection process is effective? (10 marks)

Question 5

How can you manage deficits or surpluses in your organisation? Why is it easier to manager deficits rather than surpluses? (20 marks)

Question 6

Explain the two major resons for Job designing. What are the characteristic of a well-designed Job? (20 marks)

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THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Post Graduate Examinations

Friday 3rd July, 2020

HRM5012 : Organisation Design and Human Resource Planning

Instructions Format

1. Time Allowed: **3 hours**
2. **Answer Four (4) Questions, questions one and two are Compulsory**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

SECTION A is Compulsory

Question one

Chandler was a business historian who observed that the organisational structures of certain companies were driven by changing demands and pressure of the market place. This saw moves from rigid functional organisational forms to more loosely coupled divisional structures. He was influential in the decentralisation of companies in the 1960s and 1970s. Chandler defined strategy as the determination of long term goals and objectives of an enterprise and the adoption of courses of action and the allocation of resources necessary for carrying out those goals (Crainer and Dearlove 2003). He argued that organizations having identified their strategies could then determine their most appropriate organisational structure in order to achieve this. However, various authors have questioned Chandler's view that structure follows

strategy.

a) Support or dispute Chandler's claim. (10 marks)
b) To what extent is looking for an ideal organisational structure a waste of time? Is it possible to have several structural designs in an organisation? (10 Marks)

Question 2

a) How can you manage deficits of surpluses in your organisation? Why is it easier to manager deficits rather than surpluses? (20marks)
b) Demand forecasting is the estimation of an organisations future human resource needs. Peplani Ltd is a is a dress manufacturing company. In Peplani Ltd annual plan the target is 6 million dresses for 2020. To make one dress it takes one worker 5 man hours, each worker has 1500 man hours. Using the work study technique forecast the demand human resource Peplani Ltd. *Show your working.* (6marks)
c) Explain the challenges posed on the recruitment and selection process. How can each of them be remedied. (14marks)

SECTION B Pick two (2) question from this section

Question three

a) Discuss the reasons for increased importance for HRP despite the unpredictability of most business environments (12 marks)
b) What challenges are managers facing when conducting Human Resource Planning? (8marks)

Question four

a) Examine one organizational structure and show how best it can be suited in an organisation (10 marks)
b) Look at the firm's business environment, what factors can affect the organizational structure? (10 mark)

Question five

a) The success of any organisation lies heavily the quality of people you hire. Discuss (15 marks)
b) Explain the validity and reliability of selection test methods (5 marks)

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Post Graduate Examinations

Dec 2020

HRM 5012: Organization Design and Human Resource Planning

Instructions Format

1. Time Allowed: **3 hours**
2. **Answer Four (4) Questions question One is Compulsory**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

SECTION A (compulsory)

No Company for Old-Fashioned Management

"Anything that requires knowledge and service gives us a reason to be."
Danny Wegman, CEO of Wegmans Food Markets

If you're looking for the best Parmesan cheese for your chicken parmigiana recipe, you might try Wegmans, especially if you happen to live in the vicinity of Pittsford, New York. Cheese department manager Carol Kent will be happy to recommend the best brand because her job calls for knowing cheese, as well as managing some 20 subordinates. Kent is a knowledgeable employee, and knowledgeable employees, says Wegmans CEO Danny Wegman, are "something our competitors don't have and our customers couldn't get anywhere else."

Wegmans Food Markets, a family-owned East Coast chain with nearly 80 outlets in six states, prides itself on its commitment to customers, and it shows: It ranks at the top of the latest *Consumer Reports* survey of the best national and regional grocery stores. But commitment to customers is only half of Wegmans's overall strategy, which calls for reaching its customers through its employees. "How do we differentiate ourselves?" asks Wegman, who then proceeds to answer his own question: "If we can sell products that require knowledge in terms of how you use them, that's our strategy. Anything that requires knowledge and service gives us a reason to be." That's the logic behind one of Carol Kent's recent assignments—one which she understandably regards as a perk: Wegmans sent her to Italy to conduct a personal study of Italian cheese. "We sat with the families" that make the cheeses, she recalls, and "broke bread with them. It helped me understand that we're not just selling a piece of cheese. We're selling a tradition, a quality." Kent and the employees in her department also enjoy the best benefits package in the industry, including fully paid health insurance. And that includes part-timers, who make up about two-thirds of the company's workforce of more than 37,000. In part, the strategy of extending benefits to this large segment of the labor force is intended to make sure that stores have enough good workers for crucial peak periods, but there's no denying that the costs of employee-friendly policies can mount up. At 15

to 17 percent of sales, for example, Wegmans' labour costs are well above the 12 percent figure for most supermarkets. But according to one company HR executive, holding down labour costs isn't necessarily a strategic priority: "We would have stopped offering free health insurance [to part-timers] a long time ago," she admits, "if we tried to justify the costs."

Besides, employee turnover at Wegmans is about 6 percent—a mere fraction of an industry averages that hovers around 19 percent (and can approach 100 percent for part-timers). And this is an industry in which total turnover costs have been known to outstrip total annual profits by 40 percent. Wegmans employees tend to be knowledgeable because about 20 percent of them have been with the company for at least ten years, and many have logged at least a quarter century. Says one 19-year-old college student who works at an upstate New York Wegmans while pursuing a career as a high school history teacher, "I love this place. If teaching doesn't work out, I would so totally work at Wegmans." Edward McLaughlin, who directs the Food Industry Management Program at Cornell University, understands this sort of attitude: "When you're a 16-year-old kid, the last thing you want to do is wear a geeky shirt and work for a supermarket," but at Wegmans, he explains, "it's a badge of honour. You're not a geeky cashier. You're part of the social fabric."

In 2012, Wegmans placed fifth in *Fortune* magazine's annual list of "100 Best Companies to Work For"—good for 14 consecutive years on the list and seven straight top-seven finishes. "It says that we're doing something right," says a company spokesperson, "and that there's no better way to take care of our customers than to be a great place for our employees to work." In addition to its health-care package, Wegmans has been cited for such perks as fitness centre discounts, compressed workweeks, telecommuting, and domestic-partner benefits....

Finally, under the company's Employee Scholarship Program, full-time workers can receive up to $2,200 a year for four years and part-timers up to $1,500. Since its inception in 1984, the program has handed out over $76 million in scholarships to more than 23,500 employees. Like most Wegman policies, this one combines employee outreach with long-term corporate strategy: "This program has made a

real difference in the lives of many young people," says President Colleen Wegman, who adds that it's also "one of the reasons we've been able to attract the best and the brightest to work at Wegmans."

Granted, Wegmans, which has remained in family hands since its founding in 1915, has an advantage in being as generous with its resources as its family of top executives wants to be: It doesn't have to do everything with quarterly profits in mind, and the firm likes to point out that taking care of its employees is a long-standing priority. Profit sharing and fully funded medical coverage were introduced in 1950 by Robert Wegman, son and nephew of brothers Walter and John, who opened the firm's original flagship store in Rochester, New York, in 1930. Why did Robert Wegman make such generous gestures to his employees way back then? "Because," he says simply, "I was no different from them."

Source:

Task

a) What makes Wegman's company an employer of choice? (10marks)

b) How does the company attract employees to the organisation? (5marks)

c) Analyse the manager's consider consideration that 6% labour turnover is negligible (10marks)

d) Identify any five objectives of Human resource and how they have been achieved by Wegman Cheese Company (15marks)

SECTION B (pick three questions)

Question two

Your organisation wants to implement a redundancy policy and as an HR specialist you have been incorporated into the planning team. Describe how you will go about it and are there ways of avoiding it?

(20marks)

Question Three

Your organisation has experience an increase in the exoduses of employees to a turnover rate of 50%. How will you find out the reasons for the exits? and what are the likely causes and consequences of this scenario? Question five when is turnover functional to an organisation? (20marks)

Question four

a) Explain the factors in the environment that may affect the design of a organisations Structure?
(12marks)

b) Why is Strategy an important consideration in the design of an organisation
(8Marks)

Question five

Discuss the various sources of recruitment for an organisation like the University of Zambia. What errors can be committed when conducting interviews. (20marks)

The End

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Post Graduate Examinations

Thursday 16th September, 2021

HRM5012: Organization Design and Human Resource Planning

Instructions Format

1. Time Allowed: **3 hours**
2. **Answer Four (4) Questions question One is Compulsory**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question 1

You are hired as the new Director of Human Resources for a distribution company that is the result of a merger between Company A and Company B. Company A began as a family business that over time acquired a number of small businesses. As a result of all of these acquisitions, the company's internal structure became less uniform and decentralized, and it was more of a mash-up of cultures to begin with.

As a result of all of these acquisitions, the company's internal structure became less standardized and decentralized, and it was already a mix of cultures. Company A's culture is highly diverse. Some departments are concerned with metrics and quality, while others are concerned with work happiness and employee attitudes, while yet others are not concerned with either.

The corporation aims to produce a variety of high-quality products and services in general, but the process is unstructured throughout the organization. Company B was a huge corporation with a uniform internal culture centered on processes and procedures.

Company B has a well-defined organizational structure and employee policies. Quality control is a priority for Company B. They emphasize the importance of standardized processes and procedures in all corporate segments. They have a distinct aim and goal that focuses on one thing: efficiency. Company B's plan has been financially successful, but its employees are frequently overworked and overburdened. Both firms are concerned about losing components of their current culture that they value.

a. Why do you suggest that it is important to have the expertise of an HR Director, explain with justifications indicating the functions of a strategic human resource manager SHRM?
b. Based on your understanding of strategic human resource management what do you see as your main role in this merger and tabulate how strategically you fit into the overall organisational strategy

c. State the planning process step by step for assisting in the smooth merger of company A and B and the importance of undertaking a planning process in the execution of your duties.

d. What technique would you employ to reconcile the cultural gaps between these two organizations and build a new, more unified organization?

Question 2

a) Identify and describe four learning concepts that underpin successful training programs. What are some of the things (i.e. learning principles) that can be done to encourage the fastest acquisition of a new skill (such as a new interpersonal style) when someone is learning a new skill? (12 marks)

b) What model could be used for evaluating a training program and why? (8 Marks)

Question 3

You are scheduled to meet with upper management to examine how employee engagement and organizational commitment affect key business outcomes. What would you stress in your business case for why the organization should be concerned about employee engagement and commitment? (20 marks)

Question 4

a) St. Mary's Day School is a private Catholic elementary school. It employs 47 people. Ms Hamududu is a tenth grade teacher at the school. She is unmarried. When she announces to her supervisor that she is pregnant, she is fired the next day without consideration of the stipulations of labour laws (make reference to your country specific labour law). Ms. Hamududu files a claim of sex and pregnancy discrimination with the Ministry of Labour. What is the likely result and why? (12 marks)

b) What challenges are managers facing when implementing employee relations? (8 marks)

Question 5

Write short notes on any four concepts below explaining and elaborating their meaning with examples; Recruitment, selection, Job description, collective bargaining, Redundancy, compensation (20marks)

Question 6

What are the problems and expenses associated with labor turnover? When is it appropriate to use labor turnover in HR planning? (20 marks)

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Post Graduate Deferred Examinations

Wednesday 1st December, 2021

HRM5012 : Organisation Design and Human Resource Planning

Instructions Format

1. Time Allowed: **3 hours**
2. **Answer Four (4) Questions question One is Compulsory**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question 1

Bukata Mobile and Electronics Company is a Zambian based Mobile Company in the country dealing in electronics and telecom goods. The Goods that it deals in inlcudes

Mobile phones, Laptops and computers plus its accessories and many other electronic products. This Company has it physical presence in all the (Ten) provinces in Zambia and is unique in that across the country, its staff exhibits the advanced technical knowhow of all its products offerings thereby providing tailored service to its customers based on their needs. This company has also gone a step further in creating a repair centre for all the electronic gadgets in all the provinces thereby catering for a vast customer base. It has been adjudged as one of the top employee trained companies in Zambia. Bukata Mobile gives utmost importance to training right from its inception and from the time they engage new staff. This Means that it puts training right at the centre of its operations and describes how training and a strong learning ethic has been an integral part of Bukata Mobile's culture.

It has however been noted that there are certain training gaps that have been identified in the approach that the company has undertaken over a period of time and has since enganged you as an expert in Organidsational Design and Human Resource Planning to assist the Human Resource Manager particular and the organisation in general to formulate a lasting training ptogram that could be embeded in their culture leading to them firming up their oganisational strategic direction.

In doing so, you have been asked by top management of Bukata Mobile and Electtronics Company to justify through both in written and verbal presentation the best approach they should adopt in their training programs for them to yield optimal results. In your justification you need to include the following:

a. Explain the importance of training and development in human resource whilst giving its conceptual definition
b. Using Kirk Patricks Model, explain different levels of training that could be tabulated and make your justifications using these various training approaches
c. Using the Benchmarking approaches state how they could gauge their position in the market by stating key elements to look out for when collecting data
d. Make recommendations on the best training appoaches they could use to yield best results and maintain their market position. (40 marks)

Question 2

a) Identify and describe the steps undertaken in the HR planning process. (15 marks)

b) Why is it important to undertake this process on a step by step approach in Human Resource? (5 Marks)

Question 3

" A training plan should contain all the information necessary for management to make decisions for implemention of the training programme." Elaborate the statement and discuss the underlying concept. (20 marks)

Question 4

a) What are HR metrics and state why HR metrics are important (8 marks)

b) State the most important HR metrics and write short notes on them (12 marks)

Question 5

Write short notes on **any four (4)** concepts below explaining and eloborating their meaning with examples; Employee relations, Benchmarking, Recruitment and selection, Resource, Redundancy, compensation (20marks)

Question 6

St. Mary's Day School is a private Catholic elementary school. It employs 47 people. Ms Hamududu is a tenth grade teacher at the school. She is unmarried. When she announces to her supervisor that she is pregnant, she is fired the next day without consideration of the stipulations of labour laws (make reference to your country specific labour law). Ms. Hamududu files a claim of sex and pregnancy discrimination with the Ministry of Labour.

a) What is the likely result and why? (12 marks)

b) What challenges are managers facing when implementing employee relations? (8 marks)

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

MASTER OF SCIENCE IN HUMAN RESOURCE MANAGEMENT

FINAL EXAMINATION

MARCH 2021

HRM – 5022 – LABOUR ECONOMICS

TIME: 09:00 – 12.00

INSTRUCTIONS: Question 1 in section A is compulsory. Answer any three questions in section B. All questions carry equal marks.

§

Section A (Compulsory)

1. Question 1

Trade unionism in Zambia is dead.

Discuss.

Section B (Optional: chose any three questions from the following)

Question 2

Have minimum wage policies improved the welfare of the Zambian worker?

Discuss from a conceptual viewpoint and from historical experience.

Question 3

Discuss the concept of elasticity, and its applicability to the labour market.

§

Advise the policy implications of different elasticities of demand and supply.

Question 4

Using comparative static analysis, analyse the implications of a wage freeze policy. Do you think that these policies are beneficial to the economy in general, and Zambia in particular?

Question 5

The Lusaka Province is a metropolitan commercial and industrial centre employing a significant workforce in Zambia. Suppose that at the beginning of the month, the number employed, E, equals 120,0000; the number not in the labour force N equals 70,000; the number unemployed U equals 10,000. During the course of the month, flows take place as indicated in the table below.

Flow	Quantity
Employment – Unemployment (EU)	1,800
Employment- Non-labour force (EN)	3,000
Unemployment – Employment (UE)	2,200
Unemployment – Non-Labour Force (UN)	1,700
Non-labour force – Employment (NE)	4,500
Non-labour force - Unemployment (NU)	1,300

(a) Present this status in a stock-flow diagram.

§

(b) Assuming that the population has not grown, calculate the unemployment rate and labour force participation rates at the beginning and end of the month.

Question 6

The Zambian economy has faced high levels of unemployment in different parts of the country, leading to social discontent in the society. The government is therefore desirous to address these problems both in the short and long term.

The government has requested you as a labour analyst to provide an analysis of the nature of unemployment in the country, and the possible remedies that you would recommend.
Discuss.

THE UNIVERSITY OF ZAMBIA

THE GRADUATE SCHOOL OF BUSINESS

POSTGRADUATE FINAL EXAMINATION

DATE: 2nd July, 2020

HRM 5022: Labour Economics

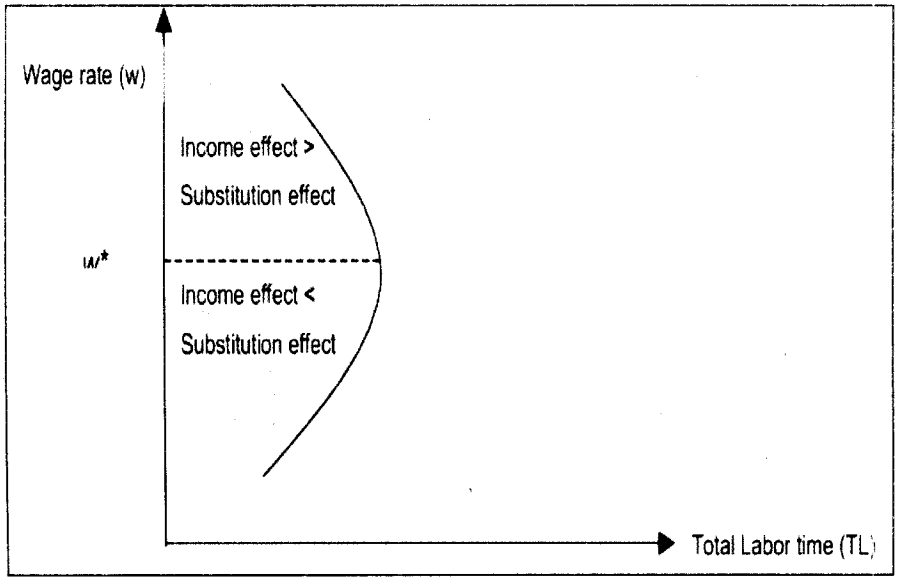
INSTRUCTIONS TO CANDIDATES:

1. **Answer ALL Questions in Section A and ANY TWO (2) Questions in Section B.**
2. **DURATION: 3 Hours.**
3. **ALL Students should have Scientific Calculators.**

SECTION A (Compulsory)

QUESTION ONE (15 Marks)

Consider the backward Bending labour supply curve below and answer the questions which follow:



(a) State and explain the determinants of demand for leisure. (3 marks)

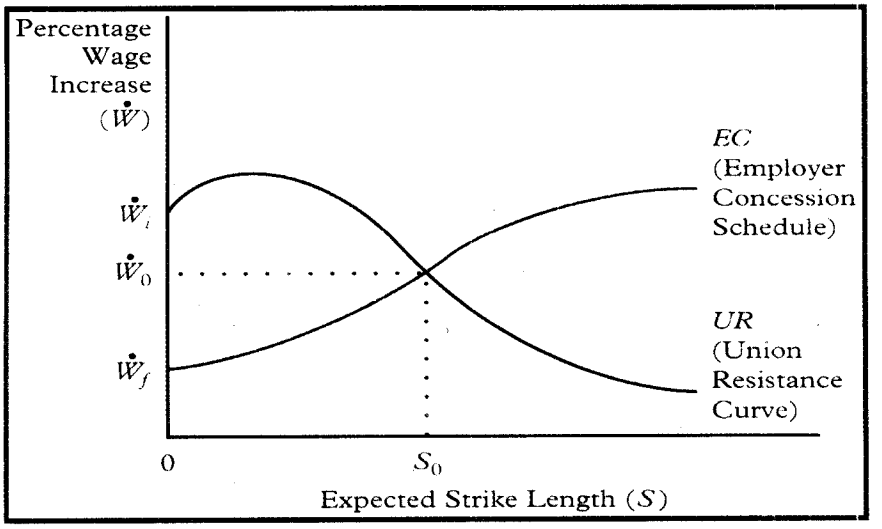
(b) Explain the difference between Income and Substitution effect (3 marks)

(c) With reference to the diagram above, explain what happens to labour supply when wages change. (3 marks)

(d) Explain the difference between the "collective" and "unitary" models of joint labour supply at household level. Which models are most applicable in traditional African societies? (6 marks)

QUESTION TWO (15 marks)

Consider the Simple Model of Strike and Bargaining and answer the questions which follow:



(a) Explain the logic behind the shape of the Employer concession schedule as expected strike length increases. (3 marks)

(b) Explain the logic behind the shape of the union resistance curve as expected strike length increases. (3 marks)

(c) State and explain the three (3) important implications of this strike model. (9 marks)

SECTION B (Choose any Two (2) Questions)

QUESTION THREE (15 Marks)

(a) Given than the demand is $\boldsymbol{P = 40 - 0.25Q}$, Marginal cost is constant at **K10** and the Real wage is **K40,** answer the following:

I. Calculate the optimal level of output for the firm, assuming it's a monopoly. (2 marks)

II. Calculate the optimal level of output assuming the firm is perfectly competitive. (2 marks)

III. Given that the Marginal product of labour is **45**, would you advise the firm in (b) to increase employment? (2 marks)

(b) Write Brief notes on the following.

I. Marginal Expense of Labour (2 marks)

II. Friction on the supply side (2 marks)

III. Hicks-Marshall Laws of Derived Demand (5 marks)

QUESTION FOUR (15 Marks)

(a) State whether the following are **TRUE** or **FALSE**, Answers with not corresponding Justification will not rewarded. (5 marks)

I. A cross-wage elasticity of -2.0 indicates that the two categories of labour are gross complements.

II. If the wage reduces by 5% but the labour demand increases by 3%, labour demand elasticity is inelastic.

III. A perfectly elastic labour demand elasticity occurs when a very large change in the wage induces no change in the labour demand.

IV. Due to the denominator effect, labour demand elasticity is lower when the wage is high.

V. If the labour demand elasticity is -0.3 and the wage increases by 10%, demand will reduce by not more than 4%.

(b) Complete the table below by calculating and interpreting labor demand elasticity. (10 marks)

	Wage Change	**Employment Change**	**Elasticity**	**Interpretation**
I.	**Example:** 20% increase	10% reduction		
II.	Increase from K5 to K8	Reduction by 10%		
III.		10% increase	-1.5	
IV.	Reduction from K35 by K25	Increase from 100 workers to 120 workers		
V.	Wage for Nurses increases by 4%	Doctor employment increases by 2%.		

QUESTION FIVE (15 Marks)

Mrs. Phiri has been offered a new job at ZANACO Bank Zambia LTD to manage their business research department. The following are some of the contract terms of her new offer:

Wage rate of K 700 per day in the office

Wage rate of K 650 per day outside work on research assignment.

Health insurance valued at K 2000 per month

Housing allowance of K 4000 per month

Fuel allowance of K 3000 per month

4 vacation days per month valued at the office wage rate

There are no retirement benefit and no gratuity payments

There are no unearned payments.

(a) Given that she will have 14 office days and 8 days on research assignment on average per month, calculate her Wage Earnings. (2 marks)

(b) Taking into account that she will have other allowances, calculate her Total Monthly Earnings. (3 marks)

(c) What will be the Value of her Employee benefits? (3 marks)

(d) Find her Total compensation for the Month. (2 marks)

(e) Calculate her income after tax given 30 percent income tax. (2 marks)

(f) Based on your answer in (e) above, do you think it is rational for her to leave are current job paying K 30,500 as income after tax in order to take up the new job? Please Explain. (3 marks)

END OF EXAMINATON

THE UNIVERSITY OF ZAMBIA

THE GRADUATE SCHOOL OF BUSINESS

POSTGRADUATE DEFERRED EXAMINATION

DATE: 10th September, 2020

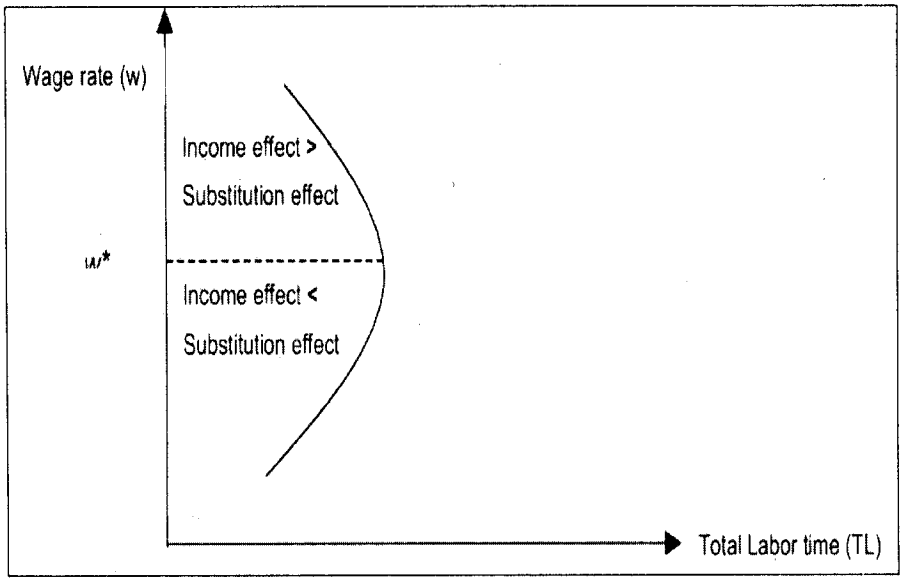
HRM 5022: Labour Economics

INSTRUCTIONS TO CANDIDATES:

1. Answer ALL Questions in this paper.
2. DURATION: 3 Hours.
3. ALL Students should have Scientific Calculators.

QUESTION ONE (15 Marks)

Consider the backward Bending labour supply curve below and answer the questions which follow:



(a) State and explain the determinants of labour. (3 marks)

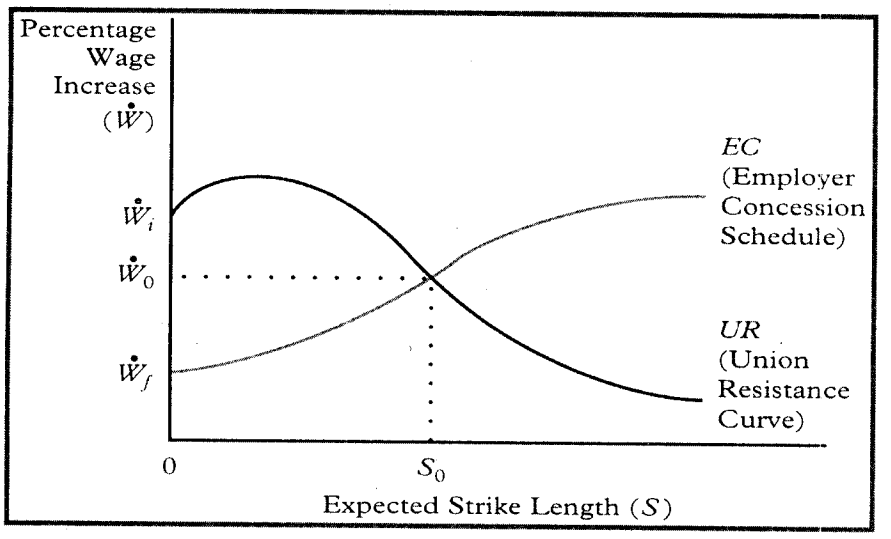
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(a) Explain the logic behind the shape of the Employer concession schedule as expected strike length increases. (3 marks)

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(c) State and explain the three (3) important implications of this strike model. (9 marks)

QUESTION THREE (10 Marks)

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I. Calculate the optimal level of output for the firm, assuming it's a monopoly. (1 marks)

II. Calculate the optimal level of output assuming the firm is perfectly competitive. (1 marks)

III. Given that the Marginal product of labour is **45**, would you advise the firm in (b) to increase employment? (1 marks)

(b) Write Brief notes on the following.

I. Marginal Expense of Labour (2 marks)

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There are no unearned payments.

(a) Given that she will have 14 office days and 8 days on research assignment on average per month, calculate her Wage Earnings. (1 marks)

(b) Taking into account that she will have other allowances, calculate her Total Monthly Earnings. (2 marks)

(c) What will be the Value of her Employee benefits? (2 marks)

(d) Find her Total compensation for the Month. (1 marks)

(e) Calculate her income after tax given 30 percent income tax. (1 marks)

(f) Based on your answer in (e) above, do you think it is rational for her to leave are current job paying K 30,500 as income after tax in order to take up the new job? Please Explain. (2 marks)

END OF EXAMINATON

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Postgraduate Sessional Examination

Wednesday 1st July 2020

HRM 5032: ORGANIZATIONAL BEHAVIOR AND LEADERSHIP

Instructions

Time Allowed: **3 hours**

There **seven (7)** questions in this paper

You are required to answer **five (5)** questions

Section A is **compulsory**

Any three questions from Section B

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Section A: Read the scenario below and answer the questions that follow

Virtual Organisation

The concept of a virtual organisation was first introduced by Mowshowitz in 1986 and has become increasingly important in management theory.

It is widely alleged that the business organisation of the future will be virtual. But precise definitions of what it means to be a virtual organisation are hard to find. The origin of the phrase, though, is clear. It comes from the expression "virtual reality", an experience in which electronically created sounds and images are made to resemble reality. A virtual company resembles a normal traditional company in its inputs and its outputs. It differs in the way in which it adds value during the journey in between.

Linked to the idea of the virtual organisation is the idea of the virtual office, a place where space is not allocated uniquely to individual employees. People work as and when they need to, wherever space is available. This practice is commonly referred to as hot-desking. The virtual office has the advantage of providing a different vista every day. But it makes it difficult to form close relationships with colleagues.

Question One (compulsory)

(a) In your view, what will be the definable characteristics that will ensure the success or failure of a virtual organisation? [10 marks]

(b) What are the advantages and disadvantages of virtual organisations [10 marks]

(20 marks)

Question Two (compulsory)

Perception is a cognitive process by which individuals organise, interpret and understand sensory impressions from their environment.

(a) Explain three (3) factors that influence the perceptual process, giving practical examples. [6 marks]

(b) Describe the two (2) general types of attribution that people make about themselves and others' behavior. Give workplace examples in your answer. [10 marks]

(c) Outline any four (4) social perceptual errors often made in the workplace. [4 marks}

(20 marks)

Total: 40 marks

Section B: Answer Any Three (3) Questions

Question Three

Personality is the sum total of the ways in which an individual reacts to and interacts with others.

"those relatively stable and enduring aspects of an individual that distinguish him/her from other people and at the same time, form the basis for our predictions concerning his/her behaviour" (Wright et al., 1970)

Understanding personalities is a vital part of being a manager. People are different and that's a fact and to better understand how to interact and engage with them it is important to understand what type of personality you're dealing with. Having an understanding of personality and learning styles of individuals in your organization can generate a productive pleasant place to work

a) List and explain any four (4) factors that influence the shaping of personality.

[8 marks]

b) Describe the stages of Personality Development according to Freudian and explain how they relate to the study of individual behavior. [12 marks]

Total: 20 marks

Question Four

Change can be seen as an opportunity to identify good ideas, however, individuals and organisations still resist change.

a) Explain any four (4) reasons why individuals and organisations resist change. [4 marks]
b) Identify and explain any four (4) ways through which organizations can manage change. [8 marks]
c) Explain how change or proposed can cause stress in employees. Please use practical examples. [8 marks]

Total: 20 marks

Question Five

(a) One of the roles of manages in any institution is to ensure that they keep a motivated staff. Debate critically the validity of the contention that the motivation for staff to work well depends on more than a high salary and good working conditions

[12 marks]

(b) Victor Vroom defines motivation as a process that governs our choices among alternative forms of voluntary behaviour. Explain in detail according Vroom the key expectancy theory variables. [8 marks]

Total: 20 marks

Question Six

"*A pattern of basic assumptions that the group learned as it solved its problems of external* adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems." Edgar Schein, 1992

a) What four (4) factors are essential to the creation of organisational culture? [8 marks]
b) Explain in detail the four classifications of culture. [12 marks]

Total: 20 marks

Question Seven

a) Distinguish between Transactional and Transformational Leadership. (4 marks)
b) Outline any eight (8) traits that are associated with great leaders. (4 marks)
c) Describe the three (3) situational leadership styles that that you can use as a leader. Indicate when each is appropriate. (12 marks)

Total: 20 marks

End of exam!

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
HRM 5032: ORGANISATIONAL BEHAVIOUR AND LEADERSHIP
2021 ACADEMIC YEAR – DEFERRED EXAMINATIONS
MARCH 2021

TIME: THREE (3) HOURS
INSTRUCTIONS:

a) Answer any THREE (3) from the nine (9) questions given.
b) You are required to read all the questions before selecting the three (3) that you wish to attempt.
c) Each question carries 20 marks.
d) There is one (1) printed page in this examination.

1. What do you understand by the term Cue stimuli? What are the implications of retention, response and retention for organisational theory and human behaviour?
2. Using practical examples, discuss the foundations of individual behaviour. How can a manager improve the organisation's ethical climate?
3. Discuss the nature of an organisation—state how this relates to the scope of organisational behaviour as a field.
4. Discuss the historical background of modern organisational behaviour
5. Personality is a complex, multi-dimensional construct. Discuss some of the personality traits that relate to job performance.
6. According to Peter Drucker, "Leadership means the lifting of man's visions to higher sights, the raising of man's performance to a higher standard, the building of man's personality beyond its normal limitations." Discuss this statement paying attention to the features, types and importance of leadership.
7. Discuss and exemplify the process of communication, from source to receiver. What is *Noise*?
8. How does task ambiguity contribute to the emergence of conflict within an organisation? Show how you, as a manager, can manage or mitigate conflict in your organisation.
9. Identify and discuss the disciplinary bases of organisational behaviour? In your answer, pay attention to the elements of organisational behaviour as well.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
HRM 5032: ORGANISATIONAL BEHAVIOUR AND LEADERSHIP
2021 ACADEMIC YEAR – DEFERRED EXAMINATIONS
MARCH 2021

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END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
HRM 5032: ORGANISATIONAL BEHAVIOUR AND LEADERSHIP
2021 ACADEMIC YEAR – DEFERRED EXAMINATIONS
MARCH 2021

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END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
HRM 5032: ORGANISATIONAL BEHAVIOUR AND LEADERSHIP
2020/2021 ACADEMIC YEAR – FINAL EXAMINATIONS (BLENDED)

TIME: THREE (3) HOURS

INSTRUCTIONS:

a) Answer any THREE (3) from the nine (9) questions given.
b) You are required to read all the questions before selecting the three (3) that you wish to attempt.
c) Each question carries 20 marks.
d) There is one (1) printed page in this examination.

1. With practical examples, show the extent to which organisational behaviour influences the management and administration of organisations.
2. Critically analyse how leaders should select leadership styles to improve their productivity.
3. Critically discuss the importance of motivation and show how human performance is affected by motivation.
4. Critically analyse the role of teams in the performance of an organisation.
5. Identify and analyse the critical considerations in designing a structure of an organisation.
6. With practical examples, describe how you can assess the culture in an organisation.
7. Identify and critically analyse the merits and demerits of the participative leadership model of behaviour.
8. Examine how you can build vision, mission, values and desired outcomes for your organisation.
9. Show how behavioural science can be applied in a business setting in order to have high productivity.
10. Using Parkinson's Law theory of time management, explain how you can ensure that time in your organisation is used effectively.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

SUPPLEMENTARY/DEFERRED EXAMINATION, MARCH 2021

HRM 5042 STRATEGIC HUMAN RESOURCE PLANNING

HUMAN RESOURCE PLANNING

Duration: 3 hours

Marks: 100%

You are advised to read the following INSTRUCTIONS/ DIRECTIONS before answering any examination question:

1. This paper comprises **Two Sections**; Section **A** and Section **B**.
2. **Section A** has **two compulsory** questions worth 20 marks each. **Question 1** of this section is based on a **Case study** provided while **question 2** is based on your **course work** knowledge.
3. **Section B** has five questions worth 20 marks each; choose and **answer any three (3)** questions from this section.
4. **You will answer five questions in total in the manner prescribed above.**
5. Read each of the questions carefully before you begin answering.
6. Number the answers to the questions clearly before answering the question(s)
7. Write as clearly as possible as illegible handwriting cannot be marked.
8. Begin each question on a new page.
9. Use the provided University answer booklet as an answer sheet and fill in all details required.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO!

Section A - Compulsory (40 Marks)

Question One

Read the passage below and then answer the questions which follow it.

Job Descriptions

Job descriptions are a critical tool used for job orientation and training and, importantly, in annual employee performance evaluations. When the duties and responsibilities listed in the job description do not reflect current job content, employee/management disagreements can arise, as this case illustrates. Both employees and managers agree that Brenda Batten has been an exceptional employee. As a senior technical representative (STR) for Blackhawk Aironics, she is valued for her knowledge in airplane instrumentations. One manager described her as 'simply an expert in the complex technology of satellite weather systems'.

In May 2007, Blackhawk Aironics implemented a new work reorganization plan. STRs such as Brenda now work largely by telecommuting with managers and engineers at company headquarters in Denton, Texas and with customers scattered throughout the United States. Additionally, under the new work plan, STRs were given more freedom to deal directly with customers and engineers without supervisory interventions. This freedom greatly facilitated customer service needs and demands in an aviation market everyone considers highly dynamic. Brenda's current job description reflects the technical dimensions of her position but not the telecommuting requirements now performed. Personal competencies such as decision-making, self-motivation, problem –solving, and communication skills are not covered.

In May 2008, Brenda met with her manager, Martin Eaton, for her annual performance review. Unfortunately, unlike past meetings, which were highly satisfactory, this meeting quickly developed into a disagreement. At the centre of the controversy were the factors to be used to measure Brenda's new job demands. Martin wanted to place major emphasis on the tasks and duties listed in her current job description. As he explained to Brenda, "I hardly see you anymore, and I have no objective criteria or performance data by which to measure those behaviours you now use." Brenda, in response, acknowledged that some things in the current job description were still important aspects of her job, but overall the current job description did not capture the full scope of her new duties and responsibilities. Brenda concluded that she was satisfied with Martin's evaluation of technical aspects of her job, but she was clearly not pleased with the overall evaluation of her performance. As she told Martin, "It's simply not fair, you just don't know what I do now"

Question One

1. Given the facts of this case; is it possible for Brenda and Martin to reach a satisfactory result? Explain.
2. Give an account of how an organization can go about identifying and measuring the personal competencies of employees?
3. How could the company prevent this problem from occurring in future among telecommuter employees? Justify your answers.
4. How can a job description for all employees help minimise misunderstandings and reduce potential conflict.

Question Two

Organizations develop human resource (HR) strategy for sustainability of growth and profitability. From this perspective, answer the following questions:

(a) Explain the main considerations an HR strategy should take into account.
(b) Discuss the strategic human resource forecasting process and its relevance to the corporate business strategy.

Section B (60 Marks)

Choose and answer **any Three** Questions.

Question Three

(a) With illustrative exemplifications, briefly discuss four stages of strategic human resource planning process.
(b) Discuss any two human resources planning models and show their relevance in shaping business strategy.

Question Four

(a) Analyse the relationship between organizational planning and human resource planning.

(b) How does effective strategic human resources planning prevent employee vs supervisor conflicts in performance management process.

Question Five

(a) Critically analyse any four factors which have necessitated the evolution of strategic human resource management / planning in organisations.

(b) Demonstrate how you can effectively and proactively deal with challenges which come along with a diversified human resource in an organization.

Question Six

(a) With practical exemplifications, analyse the role of organizational blue prints in human resource planning and strategy.

(b) Human resource training is a critical catalyst in stimulating human resource performance and organizational excellence. Briefly discuss the key elements of the training template.

Question Seven

(a) What is an organizational design? Analyse its place in effective human resource planning and employee productivity.

(b) Differentiate job enrichment from job enlargement. How can these elements of the job design aid in enhancing organizational performance?

----------END----------

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

FINAL EXAMINATION

HRM 6011: EMPLOYMENT LAW AND LABOUR RELATIONS

DATE: 11th DECEMBER 2020

TIME: 09:00 -12:00 HRS

DURATION: 3 HOURS

VENUE: SPORTS HALL

INSTRUCTIONS

1. There are Six (8) Questions in this paper.
2. The Paper has Two (2) Sections, each section has three questions.
3. Each question carries 20 marks and you are required to answer **a total of 5 questions**.

Section A

1. Kalombo Chilongoshi is a graduate from the University of Zambia who has recently been employed by one of the leading Telecommunications Company in Zambia. Kalombo Chilongoshi is employed as an Information Technology Manager and in charge of the IT Department at the Company. During the course of his employment, he notices that the Managing Director one Mr Mutinta Chilala treats his employees who are white and who are expatriates are treated more favourably than other Zambian employees. Kalombo Chilongoshi at one time overhears Mr Chilala conveying to the Human Resource Manager to preferentially hire Tonga speaking or white People. Further, Mr Chilala Mutinta prefers female employees as opposed to males whom he describes as being more dedicated to their work. You further learn that Mr Mutinta Chilala has been texting Mrs Sanders trying to sleep with her but she has been refusing his advances. Kalombo Chilongoshi confides in you on his experience at the Telecommunications company.

   Advise Kalombo Chilongoshi on the labour relations issues arising in his employment setup with the use of case law.

2. Peter Bwalya is a Fourth year law student at the University of Zambia comes to you for advice concerning an assignment he has been given in his employment law course. Peter Bwalya explains that the legal problem revolves around the video technology engineers whose conditions are as follows: the video tech engineers are free to come at the time that is convenient to submit their video content; they are free to choose the content that is featured in their videos; they are subject to the

discipline of the company; they provide their own tools of trade; the company does not pay their statutory contributions or insurance; they are free to provide video tech content to other broadcasting networks; when they report for work they are required to dress in company uniforms.

Advise Peter Bwalya with the use of authorities whether the Video Tech operators are employees or independent contractors.

3. Write short notes and give examples were possible on the following terms:
   a) Contract of Employment;
   b) Factors affecting capacity;
   c) Contract for services;
   d) Unfair dismissal; and
   e) Constructive Dismissal.

4. The case of **Kylie v CCMA (CA 10/08)** is a controversial case relating to the classification of and protection of a worker. Give a brief summary of the facts and the principles espoused by the said case.

Section B

5. Historically the rights of persons with disabilities the world over have been subject of unequal treatment, marginalization and discrimination founded on ignorance by members of society in understanding the state or condition of disability. This has resulted in the marginalization of persons with disabilities from mainstream society and exclusion from

participation in the social, economic and political spheres of persons with disabilities in their respective countries thereby condemning them into cycles of poverty and anomie.

Highlight some of the legislative interventions as well as other International Instruments that promote the employment of persons with disabilities.

6. Write short notes and give examples were possible on the following terms:

    a) Wrongful dismissal;

    b) Indirect discrimination;

    c) Affirmative Action;

    d) Labour Commissioner; and

    e) Remedies for breach of an employment contract.

7. Mapange Nsapato is a seasoned and active union member occupying the position of Secretary General in the New Deal Union which protects the interests of teachers in Zambia. Mapange is employed as a teacher at Kabangwe High School. The Head teacher of Kabangwe High School recently called Mapange into his office and threatened him about his union activities and that his continued activism may lead to his dismissal from employment. Mapange comes to you for advise on the threats he has received from the Head Teacher of Kabangwe High School.

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

FINAL EXAMINATION

HRM 6011: EMPLOYMENT LAW AND LABOUR RELATIONS

DATE: 14th DECEMBER 2020

TIME: 09:00 -12:00 HRS

DURATION: 3 HOURS

VENUE: SPORTS HALL

INSTRUCTIONS

1. There are Six (8) Questions in this paper.
2. The Paper has Two (2) Sections, each section has three questions.
3. Each question carries 20 marks and you are required to answer **a total of 5 questions**.

Section A

1. John Ngisi is a graduate from the University of Zambia who has recently been employed by one of the leading Telecommunications Company in Zambia. John Ngisi is employed as an Information Technology Manager and in charge of the IT Department at the Company. During the course of his employment, he notices that the Managing Director one Mr Azele Nyoni treats his employees who are white and who are expatriates are treated more favourably than other Zambian employees. John Ngisi at one time overhears Mr Nyoni conveying to the Human Resource Manager to preferentially hire Tonga speaking or white People. Further, Mr Azele Nyoni prefers female employees as opposed to males whom he describes as being more dedicated to their work. You further learn that Mr Azele Nyoni has been texting Mrs Penelope Mwelwa trying to sleep with her but she has been refusing his advances. John Ngisi confides in you on his experience at the Telecommunications company. Advise John Ngisi on the labour relations issues arising in his employment setup with the use of case law.

2. Mwape Banda is a Fourth year law student at the University of Zambia comes to you for advice concerning an assignment he has been given in his employment law course. Mwape Banda explains that the legal problem revolves around the video technology engineers whose conditions are as follows: the video tech engineers are free to come at the time that is convenient to submit their video content; they are free to choose the content that is featured in their videos; they are subject to the discipline of the company; they provide their own tools of trade; the

company does not pay their statutory contributions or insurance; they are free to provide video tech content to other broadcasting networks; when they report for work they are required to dress in company uniforms.

Advise Mwape Banda with the use of authorities whether the Video Tech operators are employees or independent contractors.

3. Write short notes and give examples were possible on the following terms:
   a) Sources of Employment Law;
   b) Factors affecting capacity;
   c) Implied Duties of an Employer;
   d) Summary dismissal; and
   e) Indirect Discrimination.
4. The Employment Code Act No 3 of 2019 has changed the landscape of employment law in Zambia. Highlight the new provisions introduced by the Act.

Section B

5. The Rights of persons with disabilities has recently emerged as an essential factor in the economic, social and cultural spheres of our society. This recent phenomenon as resulted in the inclusion of persons with disabilities in the development agenda of Zambia. With the aid of authorities, highlight some of the legislative interventions as well as other

International Instruments and initiatives that promote the employment of persons with disabilities in Zambia.

6. Write short notes and give examples were possible on the following terms:

    a) Unfair dismissal;

    b) Unilateral variation;

    c) Affirmative Action;

    d) Labour Commissioner; and

    e) Implied Duties of an Employee.

7. Arnold Kaluba is a seasoned and active union member occupying the position of Secretary General in the New Deal Union which protects the interests of teachers in Zambia. Arnold is employed as a teacher at Aba Nyoli Nyoli High School. The Head teacher of Aba Nyoli Nyoli High School recently called Arnold Kaluba into his office and threatened him about his union activities and that his continued activism may lead to his dismissal from employment. Arnold Kaluba comes to you for advice on the threats he has received from the Head Teacher of Aba Nyoli Nyoli High School.

    Advise Arnold Kaluba on the legality of the threats by the Head Teacher on account of Arnold's union activities.

8. Due to the recent surge in the Corona Virus Epidemic, it has become necessary for Businesses to reduce the work force in order to remain

profitable. This therefore requires the termination of employees contract of employment for reasons of redundancy. Highlight with authorities the procedural requirements that must be met prior to effecting a redundancy within employment law.

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

FINAL EXAMINATION

HRM 6011: EMPLOYMENT LAW AND LABOUR RELATIONS

DATE: 26th JANUARY 2021

TIME: 09:00 -12:00 HRS

DURATION: 3 HOURS

VENUE: SPORTS HALL

INSTRUCTIONS

1. There are Six (8) Questions in this paper.
2. The Paper has Two (2) Sections, each section has three questions.
3. Each question carries 20 marks and you are required to answer **a total of 5 questions**.

Section A

1. Kalombo Chilongoshi is a graduate from the University of Zambia who has recently been employed by one of the leading Telecommunications Company in Zambia. Kalombo Chilongoshi is employed as an Information Technology Manager and in charge of the IT Department at the Company. During the course of his employment, he notices that the Managing Director one Mr Mutinta Chilala treats his employees who are white and who are expatriates are treated more favourably than other Zambian employees. Kalombo Chilongoshi at one time overhears Mr Chilala conveying to the Human Resource Manager to preferentially hire Tonga speaking or white People. Further, Mr Chilala Mutinta prefers female employees as opposed to males whom he describes as being more dedicated to their work. You further learn that Mr Mutinta Chilala has been texting Mrs Sanders trying to sleep with her but she has been refusing his advances. Kalombo Chilongoshi confides in you on his experience at the Telecommunications company.

   Advise Kalombo Chilongoshi on the labour relations issues arising in his employment setup with the use of case law.

2. Peter Bwalya is a Fourth year law student at the University of Zambia comes to you for advice concerning an assignment he has been given in his employment law course. Peter Bwalya explains that the legal problem revolves around the video technology engineers whose conditions are as follows: the video tech engineers are free to come at the time that is convenient to submit their video content; they are free to choose the content that is featured in their videos; they are subject to the

discipline of the company; they provide their own tools of trade; the company does not pay their statutory contributions or insurance; they are free to provide video tech content to other broadcasting networks; when they report for work they are required to dress in company uniforms.

Advise Peter Bwalya with the use of authorities whether the Video Tech operators are employees or independent contractors.

3. Write short notes and give examples were possible on the following terms:
   a) Contract of Employment;
   b) Factors affecting capacity;
   c) Contract for services;
   d) Unfair dismissal; and
   e) Constructive Dismissal.

4. The case of **Kylie v CCMA (CA 10/08)** is a controversial case relating to the classification of and protection of a worker. Give a brief summary of the facts and the principles espoused by the said case.

Section B

5. Historically the rights of persons with disabilities the world over have been subject of unequal treatment, marginalization and discrimination founded on ignorance by members of society in understanding the state or condition of disability. This has resulted in the marginalization of persons with disabilities from mainstream society and exclusion from

participation in the social, economic and political spheres of persons with disabilities in their respective countries thereby condemning them into cycles of poverty and anomie.

Highlight some of the legislative interventions as well as other International Instruments that promote the employment of persons with disabilities.

6. Write short notes and give examples were possible on the following terms:

    a) Wrongful dismissal;

    b) Indirect discrimination;

    c) Affirmative Action;

    d) Labour Commissioner; and

    e) Remedies for breach of an employment contract.

7. Mapange Nsapato is a seasoned and active union member occupying the position of Secretary General in the New Deal Union which protects the interests of teachers in Zambia. Mapange is employed as a teacher at Kabangwe High School. The Head teacher of Kabangwe High School recently called Mapange into his office and threatened him about his union activities and that his continued activism may lead to his dismissal from employment. Mapange comes to you for advise on the threats he has received from the Head Teacher of Kabangwe High School.

Advise Mapange on the legality of the threats on account of Mapange's union activities.

8. The case of **MQueen Zaza v ZESCO** highlights the salient requirements whenever a company is undertaking a redundancy. Highlight with authorities the procedural requirements that must be met prior to effecting a redundancy as well as the principles enunciated in the above stated case.

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

FINAL EXAMINATION

HRM 6011: EMPLOYMENT LAW AND LABOUR RELATIONS

DATE: 11th MARCH 2021

TIME: 09:00 -12:00 HRS

DURATION: 3 HOURS

VENUE: SPORTS HALL

INSTRUCTIONS

1. There are Eight (8) Questions in this paper.
2. The Paper has Two (2) Sections, each section has three questions.
3. Each question carries 20 marks and you are required to answer **a total of 5 questions**.

Section A

1. John Ngisi is a graduate from the University of Zambia who has recently been employed by one of the leading Telecommunications Company in Zambia. John Ngisi is employed as an Information Technology Manager and in charge of the IT Department at the Company. During the course of his employment, he notices that the Managing Director one Mr Mutinta Chilala treats his employees who are white and who are expatriates are treated more favourably than other Zambian employees. John Ngisi at one time overhears Mr Chilala conveying to the Human Resource Manager to preferentially hire Tonga speaking or white People. Further, Mr Chilala Mutinta prefers female employees as opposed to males whom he describes as being more dedicated to their work. You further learn that Mr Mutinta Chilala has been texting Mrs Sanders trying to sleep with her but she has been refusing his advances. John Ngisi confides in you on his experience at the Telecommunications company.

   Advise John Ngisi on the labour relations issues arising in his employment setup with the use of case law.

2. Peter Bwalya is a Fourth year law student at the University of Zambia comes to you for advice concerning an assignment he has been given in his employment law course. Peter Bwalya explains that the legal problem revolves around the video technology engineers whose conditions are as follows: the video tech engineers are free to come at the time that is convenient to submit their video content; they are free to choose the content that is featured in their videos; they are subject to the discipline of the company; they provide their own tools of trade; the

company does not pay their statutory contributions or insurance; they are free to provide video tech content to other broadcasting networks; when they report for work they are required to dress in company uniforms.

Advise Peter Bwalya with the use of authorities whether the Video Tech operators are employees or independent contractors.

3. Write short notes and give examples were possible on the following terms:
    a) Contract of Employment;
    b) Factors affecting capacity;
    c) Contract for services;
    d) Unfair dismissal; and
    e) Constructive Dismissal.
4. The United Kingdom Supreme Court on 19th February 2021 delivered a landmark judgment relating to the plight of Uber Drivers who were initially classified as independent contractors by the Court of Appeal but have since been classified as employees by the Supreme Court. Give an exposition on the factors leading to the overturning of the Court of Appeal judgment by the Supreme Court.

Section B

5. Historically the rights of persons with disabilities the world over have been subject of unequal treatment, marginalization and discrimination

founded on ignorance by members of society in understanding the state or condition of disability. This has resulted in the marginalization of persons with disabilities from mainstream society and exclusion from participation in the social, economic and political spheres of persons with disabilities in their respective countries thereby condemning them into cycles of poverty and anomie.

Highlight some of the legislative interventions as well as other International Instruments that promote the employment of persons with disabilities.

6. Write short notes and give examples were possible on the following terms:

    a) Wrongful dismissal;

    b) Indirect discrimination;

    c) Affirmative Action;

    d) Labour Commissioner; and

    e) Remedies for breach of an employment contract.

7. Steven Mwale is a seasoned and active union member occupying the position of Secretary General in the New Deal Union which protects the interests of teachers in Zambia. Steven is employed as a teacher at Kabangwe High School. The Head teacher of Kabangwe High School recently called Steven into his office and threatened him about his union activities and that his continued activism may lead to his dismissal from

employment. Steven comes to you for advise on the threats he has received from the Head Teacher of Kabangwe High School.

Advise Steven on the legality of the threats on account of Mapange's union activities.

8. Section 55 of the Employment Code Act has provided for redundancy procedure in the event of a business ceasing to operate. Highlight with authorities the procedural requirements that must be met prior to effecting a redundancy as well as the principles from decided cases as to when a redundancy can be effected.

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

SUPPLEMENTARY EXAMINATION

HRM 6011: EMPLOYMENT LAW AND LABOUR RELATIONS

DATE: 7th APRIL 2021

TIME: 09:00 -12:00 HRS

DURATION: 3 HOURS

VENUE: SPORTS HALL

INSTRUCTIONS

1. There are Eight (8) Questions in this paper.
2. The Paper has Two (2) Sections, each section has three questions.
3. Each question carries 20 marks and you are required to answer **a total of 5 questions**.

Section A

1. Kalombo Chilongoshi is a graduate from the University of Zambia who has recently been employed by one of the leading Telecommunications Company in Zambia. Kalombo Chilongoshi is employed as an Information Technology Manager and in charge of the IT Department at the Company. During the course of his employment, he notices that the Managing Director one Mr Mutinta Chilala treats his employees who are white and who are expatriates are treated more favourably than other Zambian employees. Kalombo Chilongoshi at one time overhears Mr Chilala conveying to the Human Resource Manager to preferentially hire Tonga speaking or white People. Further, Mr Chilala Mutinta prefers female employees as opposed to males whom he describes as being more dedicated to their work. You further learn that Mr Mutinta Chilala has been texting Mrs Sanders trying to sleep with her but she has been refusing his advances. Kalombo Chilongoshi confides in you on his experience at the Telecommunications company.

   Advise Kalombo Chilongoshi on the labour relations issues arising in his employment setup with the use of case law.

2. Peter Bwalya is a Fourth year law student at the University of Zambia comes to you for advice concerning an assignment he has been given in his employment law course. Peter Bwalya explains that the legal problem revolves around the video technology engineers whose conditions are as follows: the video tech engineers are free to come at the time that is convenient to submit their video content; they are free to choose the content that is featured in their videos; they are subject to the

discipline of the company; they provide their own tools of trade; the company does not pay their statutory contributions or insurance; they are free to provide video tech content to other broadcasting networks; when they report for work they are required to dress in company uniforms.

Advise Peter Bwalya with the use of authorities whether the Video Tech operators are employees or independent contractors.

3. Write short notes and give examples were possible on the following terms:
   a) Contract of Employment;
   b) Factors affecting capacity;
   c) Contract for services;
   d) Unfair dismissal; and
   e) Constructive Dismissal.

4. The case of **Kylie v CCMA (CA 10/08)** is a controversial case relating to the classification of and protection of a worker. Give a brief summary of the facts and the principles espoused by the said case.

Section B

5. Historically the rights of persons with disabilities the world over have been subject of unequal treatment, marginalization and discrimination founded on ignorance by members of society in understanding the state or condition of disability. This has resulted in the marginalization of persons with disabilities from mainstream society and exclusion from

participation in the social, economic and political spheres of persons with disabilities in their respective countries thereby condemning them into cycles of poverty and anomie.

Highlight some of the legislative interventions as well as other International Instruments that promote the employment of persons with disabilities.

6. Write short notes and give examples were possible on the following terms:

    a) Wrongful dismissal;

    b) Indirect discrimination;

    c) Affirmative Action;

    d) Labour Commissioner; and

    e) Remedies for breach of an employment contract.

7. Mapange Nsapato is a seasoned and active union member occupying the position of Secretary General in the New Deal Union which protects the interests of teachers in Zambia. Mapange is employed as a teacher at Kabangwe High School. The Head teacher of Kabangwe High School recently called Mapange into his office and threatened him about his union activities and that his continued activism may lead to his dismissal from employment. Mapange comes to you for advise on the threats he has received from the Head Teacher of Kabangwe High School.

Advise Mapange on the legality of the threats on account of Mapange's union activities.

8. The case of **MQueen Zaza v ZESCO** highlights the salient requirements whenever a company is undertaking a redundancy. Highlight with authorities the procedural requirements that must be met prior to effecting a redundancy as well as the principles enunciated in the above stated case.

UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
COMPENSATION AND PERFORMANCE MANAGEMENT
HRM 6021
DURATION 3 HOURS (60 marks)

INSTRUCTIONS

Answer all questions

1) Performance management and performance appraisal are two concepts that have many elements in common, but an understanding of the comparisons and dissimilarities is vital for improving performance. Using a table of comparators, compare and contrast the two. **10 Marks**

2) An operations Manager makes sure that all equipment is in a usable state. This includes equipment being maintained and always striving to have a good state of art and technology. As for the human resources manager, there is hell in HR management. Using five variables, discuss the role of human resource professionals in compensation management issues in organisations. **7.5 Marks**

3) Your organisation is on a paradigm shift in compensation management and is considering to introduce performance related pay (PRP). What constitutes (PRP) **7.5 marks**

4) There have been concerns in your organisation that all accountants are placed on the same scale and get the same allowances. There have been discontents regarding this pay approach with most of them arguing I favour of using competency-based pay structures to reward accountants.

   (a) What would be the best pay structure to overcome these discontents? **2 Marks.**
   (b) What would be three advantages of your proposed pay structure? **3 Marks**

5) One of the requirements in determining compensation is conducting a job evaluation and a job analysis. What do the two mean? **10 Marks.**

6) Your organisation has been under so much scrutiny in rewarding its top executives than unionised employees. Critically discuss using five parameters the controversies of compensating top executives that a union would raise during the Bargaining unit and five points Management will advance in support of executive Management. **20 Marks**

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Post Graduate Examinations

Monday 7th September, July, 2020

HRM6021: Compensation and Performance Management

Instructions Format

1. Time Allowed: **3 hours**
2. **There six questions in this paper. Each question carries 25 marks. Answer Four (4) Questions, questions**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question one

Broad banding is the term applied to having extremely wide salary bands, much more encompassing than with traditional salary structures. Explain the merits and demerits of broad banding

Question two

What are the strengths and limitations of the balanced score card model?

Question three

In performance management it is said that you can't manage what you can't measure and you cannot measure what you cannot define.' Do you agree or disagree and why?

Question four

When establishing a pay incentive plan, a number of considerations should be taken into account. What are these considerations? Explain the relevance of payroll outsourcing.

Questions five

Pay differentials can lead to equity tension among employees. Explain the relevance of transparency in the management of compensation. What factors determine pay levels and pay differentials in reward management?

Question Six

a) Why should organisation align the reward strategy to the organisational/ business strategy?
b) Explain the concept of total reward and it significance (bring out relevant practical examples).

Question Seven

Explain the importance of assessing the performance of your employees. Why do managers shun it?

Good luck

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Post Graduate Examinations

Thursday 17th December 2020

HRM6021: Compensation and Performance Management

Instructions Format

1. Time Allowed: **3 hours**
2. **There six questions in this paper. Each question carries 25 marks. Answer Four (4) Questions, questions**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question one

Broad banding is the term applied to having extremely wide salary bands, much more encompassing than with traditional salary structures. Explain the merits and demerits of broad banding **(25 marks)**

Question two

Levels of individual performance are affected by a number of influences and factors What are the influences and factors affect the performance of employees?

(25marks)

Question three

In performance management it is said that you can't manage what you can't measure and you cannot measure what you cannot define.' Do you agree or disagree and why?

(25marks)

Question four

When establishing a pay incentive plan, a number of considerations should be taken into account. What are these considerations? explain the relevance of payroll outsourcing. **(25marks)**

Questions five

Pay differentials can lead to equity tension among employees. Explain the relevance of transparency in the management of compensation. What factors determine pay levels and pay differentials in reward management **(25marks)**

Question Six

a) Why should organisation align the reward strategy to the organizational / business strategy? **(10marks)**
b) Explain the concept of total reward and it significance (bring out relevant practical examples) **(15marks)**

Total 25marks

Question Seven

Explain the importance of assess the performance of your employees. Why do managers shun it? How can employee performance be accessed? **(25marks)**

Good luck

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Post Graduate Examinations

September, 2021

HRM6021: Compensation and Performance Management

Instructions Format

1. Time Allowed: **3 hours**
2. **There six questions in this paper. Each question carries 25 marks. Answer Four (4) Questions, questions**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question one

Broad banding is the term applied to having extremely wide salary bands, much more encompassing than with traditional salary structures. Explain the merits and demerits of broad banding.

Question two

a) Why should organisation align the reward strategy to the organisational/ business strategy?
b) Explain the concept of total reward and it significance (bring out relevant practical examples).

Question three

In performance management it is said that you can't manage what you can't measure and you cannot measure what you cannot define.' Do you agree or disagree and why?

What is your understanding of the saying that performance management is management by contract?

Question four

When establishing a pay incentive plan, a number of considerations should be taken into account. What are these considerations? explain the relevance of payroll outsourcing.

Questions five

Pay differentials can lead to equity tension among employees. Explain the relevance of transparency in the management of compensation. What factors determine pay levels and pay differentials in reward management

Question Six

a) Explain the importance of assess the performance of your employees. What circumstance make managers to avoid it?
b) If you were engaged to develop a performance appraisal system what would be the important characteristics of your design?

Good luck

UNIVERSITY OF ZAMBIA

HRM 6031 FINAL EXAM; 2ND JUNE 2020 Learning and Development

NOV 2018/ MAY 2019 COHORTS

DURATION- THREE HOURS

INSTRUCTIONS;

Answer the compulsory question 1 and 2 others from the list given below.

1. Discuss the importance of measuring the Return on Investment (ROI) of training in an organization (5marks)
   b. Explain how you can isolate the effect/impact of training using; (a) **A *Control group*** (b) ***Trend lines.*** Show examples where necessary (5marks)
   c. Discuss briefly what you may consider as constituting the *cost of a training program* (5 marks).
   d. Given that the training program cost was **K*120,000*** for 30 participants and the benefits of the training in the first year was **K350,000** calculate the **ROI** of this training program (5 marks)

2. Discuss the importance of Succession planning in organizations and show how Training and Development contributes to an effective organization's succession planning and Talent management program (20 marks).

3. Explain how you can assess Learning or training Needs at the following levels;

- Organization,
- Groups/departmental
- Individuals

(10 marks)

b. Why is it important to carry out Annual Learning needs Analysis for organizations and show how this process is complimented by an effective Performance Management systems? (10 marks)

4 Training and Staff Development can both be used as an effective Human Resource Strategy to achieve organizations' objectives, yet the two concepts are different. Identify and explain the relevance of three examples of; (a) training methods and (b) staff development methods that you can use to improve employee skills and behaviors (20 marks).

5 Your CEO has challenged you to use the Learning and Development function to align HRM as a contributor to the organizations' strategic goals. Give an analysis of how you can present this matter to convince your CEO not to cut your Training and Development budget. (20 Marks).

END.....

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

HRM 6031

MANAGING DIVERSITY AND EQUALITY

TUESDAY 30TH JUNE,2020

TIME:3 HOURS

INSTRUCTIONS: ANSWER TWO QUESTIONS FROM EACH SECTION

SECTION A

QUESTION ONE (COMPULSORY)

The idea that pedagogy should be judged according to race is absurd on its face but the fact that supervisors see their relationship with their subordinates in these terms is indeed a critical hindrance to a developing countries socio- economic development. Assess this preposition in contemporary Zambian society using your knowledge of diversity management strategies.

QUESTION TWO.

Making reference to theory and evidence discuss the key factors that explain men's greater likelihood of experiencing career progression regardless of the gender composition of an organisations workforce.

QUESTION THREE.

Using various practical examples of workforce conflict management and dispute resolution evaluate to what extent contemporary evidence on the origins of personality differences support Galton's idea of the Lexical Hypothesis.

SECTION B

QUESTION ONE

Diversity is based on the assumption that a set of characteristics makes up the essential nature of all members of a group therefore discrimination on grounds of age is bad for business. Explain and critically evaluate this statement with reference to theory and evidence.

QUESTION TWO.

Compare and contrast any two(2) management strategies a manager can effectively use to prevent industrial conflict.

QUESTION THREE.

Human Resource managers in contemporary Zambian society constantly have to bridge the yawning chasm created by Gender inequalities in traditional societies constantly at play in today's workplace environment.

a) Critically analyse the various strategies HR practitioners can institutionalise to overcome the ***"Queen Bee Syndrome"*****(15marks)**

b) Explain the various strategies HR practitioners can institutionalise to overcome '***Glass Ceiling*** **.(10 marks)**

END OF EXAMS

GOODLUCK

UNIVERSITY OF ZAMBIA

HRM 6031 FINAL EXAM; 15th DEC 2020 Managing Diversity and Equalit

DURATION- THREE HOURS

INSTRUCTIONS;

Answer 3 questions from the list given below.

1. Discuss the importance of measuring the Return on Investment (ROI) of training in an organization (5marks)
   b. Explain how you can isolate the effect/impact of training using; (a) **A *Control group*** (b) ***Trend lines.*** Show examples where necessary (5marks)
   c. Discuss briefly what you may consider as constituting the *cost of a training program* (5 marks).
   d. Given that the training program cost was **K*80, 500*** for 30 participants and the benefits of the training in the first year was **K220, 800** calculate the **ROI** of this training program (5 marks)

2. Discuss how Training and Staff Development can both be used as effective Human Resource Strategies to achieve organizational performance. Why is it important to encourage Learning in organizations? (20 marks)

3. Staff development is essential in Career and Succession planning and these are vital for organizational continuity. Discuss and show how mentorship, coaching, talent management, job rotation can facilitate this process (20 marks).

4. The training process outlines a series of steps that need to be followed systematically in order to come up with an efficient and effective training program as follows;
   - Training needs analysis
   - Instructional Training program design
   - Training Validation
   - Implementation
   - Training Evaluation

Comment on each one of the above steps and state their necessity in organizations (20 marks).

5. Why is it important to measure the impact of learning? Donald Kirkpatrick's model summarizes the levels of evaluating the impact of learning, *namely Reaction, Learning, Behavior and Results/business outcomes.* Comment on each one of these including ways that you could use for evaluation at each level (20 marks).

6. Discuss how your experience in Learning and Development will help your job performance and organizational improvement, given that people skills drive companies and they are always required (20 marks)

END.....

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Post Graduate Examinations

September, 2021

HRM6031: Learning and Development

Instructions Format

1. Time Allowed: **3 hours**
2. **There five (5) questions in this paper. Each question carries 100 marks.**
3. **Answer Four (4) Questions, questions**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question One

A strategy for providing development and growth opportunities should be based on the creation of a learning culture. Why should it be so? Explain the relevance of a training and development strategy and what components should it have?

Question Two

You have been assigned by Human Director in your organisation to plan for a training programme. How relevant is this assignment? Describe the step you would take to plan for an effective training programme. How will you assess the performance of your training programme?

Question Three

Adult learning refers to the education and training pursued by mature learners. How does it differ from child learning? What are the major characteristics and challenges of adult learning? Using relevant theory explain how adult learning can be enhanced in the organisation.

Question four

There are four different types of learning that can be found in an organisation? Attending a training session will not always guarantee learning. As a trainer, how will you handle each type of learner to ensure effective and that learning takes place?

Question Five

As an HR manager one of your responsibilities is to inform HR policies in the organisation. Why should organisation have a training and development policy? What is the purpose of analysing training and development need? With valid practical example explain the principles of training and development to other non HR specialists in top management in your organisation

University of Zambia

GRADUATE SCHOOL OF BUSINESS

POST GRADUATE PROGRAMMES

FINAL EXAMINATION

FINANCIAL REPORTING AND ANALYSIS – MAF 5010

15th AUGUST 2018

08:50hrs to 12:00 hrs

URATION: This is a three (3) hour examination plus 10 minutes reading time

NSTRUCTIONS TO CANDIDATES

. This paper consists of two sections; Section A is compulsory and MUST be answered.

. Answer ANY three from Section B. Each question is worth 20 marks. Total marks are 60 narks.

. Show all your workings and state your reasoning where appropriate.

. Write clearly and readable.

. Write your answers in the answer sheet provided, were more than one answer sheet is sed, please fasten them together.

. Please read the questions carefully before starting to answer.

ction A = 40 marks

ou are advised not to spend more than 72 minutes on this section

uestion one

xtracts from the financial statements of GSB, MED and ENG are presented below.

atements of financial position as at 30 September 2017

	GSB	MED	ENG
	K'm	K'm	K'm
SSETS			
on-current assets			
roperty, plant and equipment	80	70	60
nancial asset	70		
vestment in ENG	40	-	-
	190	70	60
urrent assets	**30**	**49**	**20**
otal assets	220	119	80
QUITY AND LIABILITIES			
quity attributable to owners of the parent			
hare capital (K1 equity shares)	60	40	30
hare premium	20	5	5
ther reserves	7	-	-
etained earnings	65	52	25
otal equity	152	97	60
on-current liabilities	50	-	-
urrent liabilities	18	22	20
otal liabilities	**68**	**22**	**20**
otal equity and liabilities	220	119	80

dditional information:

1. On 1 January 2017, GSB acquired 75% of the equity share capital of MED in a share exchange in which GSB issued two new shares for every three shares it acquired in MED. Additionally, on 31 December 2018, GSB will pay the shareholders of MED K1.76 per share acquired. GSB's cost of capital is 10% per annum. GSB has not yet recorded the acquisition of MED in its financial statements. At the date of acquisition, shares in GSB and MED had a stock market value of K2.50 and K1.50 each, respectively. The retained profits of MED on 1 October 2016 was K31.6m, accruing evenly throughout the year.

2. At the date of acquisition, the fair values of MED's assets were equal to their carrying amounts with the exception of two items:
   - An item of plant had a fair value of K2.4 million above its carrying amount. The remaining life of the plant at the date of acquisition was three years. A full year depreciation is charged in the year of acquisition and non in the year of disposal
   - MED had a contingent liability which GSB estimated to have a fair value of K5m. This had a value of K7.5m at 30 September 2017. MED has not incorporated these fair value changes into its financial statements.

3. GSB's policy is to value the non-controlling interest at fair value at the date of acquisition. For this purpose, MED's share price at that date can be deemed to be representative of the fair value of the shares held by the non-controlling interest.

4. GSB conducted its annual impairment review and concluded that the goodwill on the acquisition of MED was impaired by 25% at 30 September 2017. No other impairments of goodwill have arisen.

5. GSB disposed of 4m K1 ordinary shares of ENG on 1 July 2017 for K26m.The proceeds were correctly entered. GSB had acquired 21m of the issued ordinary share capital of ENG for K40m on 1 November 2015, when the balance on reserves was K10m. The fair value of the shareholding retained at 1 July 2017 was K19m. There was no evidence of goodwill having been impaired since the date of acquisition and there has been no change in the share capital. The reserves of ENG at 1 October 2016 were K13m.

6. The balance on other reserves relates to movements in the value of the financial assets. During the year to 30 September 2017, the Directors of GSB ascertained that the fair value of the financial asset should be adjusted to K59m due to the drop in the rates of return on the asset on the market.

7. GSB's non-current liabilities represent a long-term borrowing taken out on 1 October 2016 incurring issue costs of K2.5m. The amount in the statement represents the net proceeds received which was correctly treated. However, no any other entry was made. The borrowing has a coupon rate of 6% per annum and the interest due in respect of the year to 30 September 2017 has been paid and charged to profit for the year. The effective interest rate associated with this instrument is 10% per annum.

8. For the first time in June 2017, MED sold goods to GSB with a sales value of K20 million and a gross margin of 20%. At 30 September 2017, 60% of these items remained in GSB's inventories.

equired:

) **Prepare** the consolidated statement of financial position for the GSB Group as at 30 September 2017. **(28 marks)**

n 1 February 2018 GSB, made a bonus issue of 1 for 4. On 1 July 2018, GSB issued ,000,000 ordinary shares for K3 each, which was the market price at the time. The nsolidated profit after tax as reported in the consolidated profit and loss for the year ended September 2018 was K72.5m. The profit attributable to the non-controlling interest nounted to K4.45m.

e basic earnings per share for the year ended 30 September 2017 was calculated as 74.2 gwee.

n 1 August 2018 GSB issued a convertible loan stock. Assuming the conversion was fully bscribed there would be an increase of 12,400,000 ordinary shares in issue. The liability ement of the loan stock is K40,000,000 and the effective interest rate is 12%.

SB is subject to income tax at a rate of 30%.

equired:

) Calculate the basic earnings per share to be reported in the financial statements of GSB for the year ended 30 September 2018, including comparative, in accordance with the requirements of IAS 33 Earnings Per Share. **(6 marks)**

) Calculate the diluted earnings per share for the year ended 30 September 2018, in accordance with the requirements of IAS 33 Earnings Per Share. **(3 marks)**

) Briefly explain why the bonus issue and issue at full market value are treated differently in arriving at basic earnings per share. **(3 marks)**

Total = 40 marks

ction B - Answer ANY three from four, each question is worth 20 marks

u are advised not to spend longer than 36 minutes on each question

uestion two

B Co is a listed company which is seen as a potential target for acquisition by financial alysts. The value of the company has therefore been a matter of public debate in recent eeks and the following financial information is available:

atement of financial position information for 2017

	K'm	K'm
on-current assets		910
rrent assets		
ventory	38	
ade receivables	45	83
tal assets		**993**
uity finance		
dinary shares	150	
serves	272	422
on-current liabilities		
% bonds		500
rrent liabilities		71
tal liabilities		**993**

e shares of GSB Co have a nominal (par) value of 25n per share and a market value of .28 per share.The business sector of GSB Co has an average price to earnings ratio of 6.5. e company paid a dividend of 9.5n per share during the year. The total revenue and ofits for the year 2017 were K725m and K114m respectively. During the year 2017, the mpany paid tax of K14.7m.

equired:

) Calculate GSB Co's current Z-score and comment on the meaning of the ratio calculated. **(8 marks)**

Z = 1.2 X1 + 1.4 X2 + 3.3 X3 + 0.6 X4 + 0.999 X5; Where:

X1 = working capital / total assets

X2 = retained earnings / total assets

X3 = profit before interest and tax / total assets

X4 = market value of equity / book value of debt

X5 = sales / total assets

) Ross and Kami listed 'Ten Commandments' that should be followed by a company to avoid failure. **Explain** any six of these commandments. **(12 marks)**

Total = 20 marks

uestion three

atter one

B operates a defined benefit pension plan for its employees. On 1 January 2017, GSB made provements to the benefits offered by the plan and the actuary estimated that the past rvice costs associated with these improvements totalled K5 million

plain, in accordance with IAS 19 Employee Benefits (revised), how:
the defined benefit pension plan would be accounted for by GSB within its financial atements; **(3 marks)**
the past service costs would be accounted for in the year to 31 December 2017. **marks)**

atter two

SB obtained a licence free of charge from the government to dig and operate a gold mine. B spent K6 million digging and preparing the mine for operation and erecting buildings on e. The mine commenced operations on 1 September 2016.
e licence requires that at the end of the mine's useful life of 20 years, the site must be instated, all buildings and equipment must be removed and the site landscaped. At 31 gust 2017 GSB estimated that the cost in 19 years' time of the removal and landscaping ll be K5 million and its present value is K3 million.
the 31 October 2017 there was a massive earthquake in the area and GSB's mine shaft as badly damaged. It is estimated that the mine will be closed for at least six months and ll cost K1 million to repair.
plain how GSB should record the cost of the site reinstatement as at 31 August 2017 in cordance with IAS 37 Provisions, Contingent Liabilities and Contingent Assets. **(5 marks)**

atter three

SB has the Kwacha as its functional currency and purchases plant and equipment from a reign entity for R20m on 31 May 2018 when the exchange rate was R0.92 to K1. GSB also lls goods to a foreign customer for R18.5m on 30 September 2018, when the exchange rate as R0.75 to K1. At GSB's year end of 31 December 2018, both amounts are still outstanding d have not been paid. The closing exchange rate was R0.85 to K1.

line with IAS 21, explain the accounting for the items for the period ending 31 December 018. **(4 marks)**

atter four

plain in accordance with *IAS 40 Investment Property*, the requirements for an item to be eld as investment property. And also the features of the two valuations models prescribed the standards for the initial and subsequent treatment of investment property. **(6 marks)**

Total = 20 marks

uestion four

EC is a Zambian publicly traded Electricity Company listed on the LuSE stock exchange under e energy sector since 21 January 2008. The Company was first incorporated more than 60 ears ago and privatized 20 years back.

ne business of CEC is the supply, transmission, distribution and generation of electricity. CEC so has interests in telecommunications. Its customers, for the power business, are the ining companies operating in the copper mining belt straddling the border between Zambia nd the DRC and utilities in the SAPP that access transmission services. Its lecommunications business is undertaken through the joint venture, CEC Liquid Telecom, hich builds fibre networks and provides wholesale bandwidth, and its retail arm Hai elecoms. CEC is also engaged in international power trading, and is now one of the largest ower traders in the SAPP.

EC's market share of electricity sales in Zambia is about 50% of national energy consumption ith domestic customers taking about 40% of Zambia's national peak demand.

EC is the main supplier of power to the mining industry in Zambia a service it has consistently nd reliably provided since 1953, when the Company was formed. CEC co-owns and operates e transmission interconnection between Zambia and the DRC, which forms an integral and nportant part of the SAPP's central transmission corridor enabling the development of a ompetitive international power market in the SADC. The following information has been ollected on CEC;

xtract of the financial statements for the year ended 31 December 2017

rofit and loss

	$'000
evenue	389,532
ross profit	130,438
perating profit	79,579
ofit before tax	75,128
ofit after tax	48,378

atement of financial position

	$'000
operty, plant and equipment	437,533
tal assets	619,960
are capital	2,849
are premium	60,078
evaluation reserves	142,991
etained earnings	144,992
tal non-current liabilities	172,151
tal current liabilities	96,899

her information;

tal dividends paid out:	$21m
umber of shares:	1,625,000,597
vidend yield:	8.75%
ice to earnings ratio:	4.92
change rate:	K9.7614 to $1

	2017	2018(forecast)	2019(forecast)
ee cash flows $'000	22,528	24,736	27,160

anagement of CEC estimates cash flows beyond 2019 to grow at the rate equal to that of vidends for the foreseeable future. The cost of capital is approximately equal to the return n equity for the company. Growth in dividends and cash flows beyond 2019 is determined sed on the opportunity cost of undistributed profits.

22 January 2018, Zambian Transmission a limited liability partnership incorporated under e laws of England, currently wholly owned by CDC has made a firm offer to buy all the CEC ares at a price of $0.2338 per share.

DC is the United Kingdom's development finance institution and is wholly owned by the UK overnment Department for International Development ("DFID"). As at 31 December 2016, DC had total assets worth US$ 6.0 billion and has a specific mandate to invest in frastructure assets across Africa.

e board of CEC is due to sit within the next 21 days and they have engaged an independent nance consultant to provide an evaluation of the offer by Zambian Transmission LLP.

equired;

an independent consultant, calculate a range of Kwacha per share values for CEC and epare a report to the Directors of CEC on the offer by Zambian Transmission. Your report ust include a recommendation as to whether the Directors should accept or reject the offer. pproximately 12 marks for calculations)

Total = 20 marks

uestion five

atter one

SB granted 800 share options to each of its 900 employees on 1 January 2017, with the ndition that each employee continues to work for GSB for 4 years from the grant date.
e fair value of each share option was K7.50 at 1 January 2017 and K9.50 at 31 December 17.
the year to 31 December 2017, 20 employees left and at that date another 50 were pected to leave over the next three years.

accordance with IFRS 2 Share-based Payment: calculate the charge to GSB's statement of ofit or loss for the year ended 31 December 2017 in respect of the share options AND epare the journal entry to record it; and explain why share options, such as those granted GSB, generate a charge to the statement of profit or loss despite no cash transaction ving occurred. **(5 marks)**

atter two

dar's sole activity is the operation of hotels all over the world. After a period of declining ofitability, Radar's directors made the following decisions during the year ended 31 March 18:
it disposed of all of its hotels in country A;
it refurbished all of its hotels in country B in order to target the holiday and tourism arket. The previous target market in country B had been aimed at business clients.

eating the two decisions separately, explain whether they meet the criteria for being assified as discontinued operations in line with IFRS 5, in the financial statements for the ar ended 31 March 2018. **(5 marks)**

atter three

asset is sold in two different active markets at different prices. An entity enters into ansactions in both markets and can access the price in those markets for the asset at the easurement date as follows:

	Market 1	Market 2
	K	K
ice	52	50
ansaction costs	(6)	(2)
ansport costs	(4)	(4)
et price received	42	44

line with IFRS 13, what is the fair value of the asset if:

market 1 is the principal market for the asset? **(2 marks)**
no principal market can be determined? **(3 marks)**

atter four

SB wishes to purchase a new rollercoaster ride for their theme park. In order to fund this, ey have had to obtain extra funding. On 30 September 2017, GSB issued the following eference shares:

1. 1(one) million preference shares for K3 each. No dividends are payable. GSB will redeem the preference shares in three years' time by issuing ordinary shares worth K3 million. The exact number of ordinary shares issuable will be based on their fair value on 30 September 2020.
2. 2 (two) million preference shares for K2.80 each. No dividends are payable. The preference shares will be redeemed in two years' time by issuing 3 million ordinary shares.
3. 4 (four) million preference shares for K2.50 each. They are not mandatorily redeemable. A dividend is payable if, and only if, dividends are paid on ordinary shares.

scuss whether these financial instruments should be classified as financial liabilities or uity in the financial statements of GSB for the year ended 30 September 2017. **(5 marks)**

Total = 20 marks

End of question paper

GRADUATE SCHOOL OF BUSINESS
FINANCIAL REPORTING AND ANALYSIS COURSE
(MAF 5010)

SESSION EXAMINATIONE
NOVEMBER 2019 BLENDED AND EVINING COHOTS

ANSWER ALL FIVE QUESTIONS

WEDNESDAY 9TH DECEMBER, 2020

QUESTION NUMBER 1 : (Answer Part 1a to 1d)

1. Financial Statements

Good Milile operates a chain of Departments across the country of Kambia. The following summarized trial balance has been extracted from the books of Good Milile.

	K'000	K'000
Retail Sales		27,300
Cost of Retail Sales	16,250	
Administration Expenses	250	
Distribution costs	2,500	
Trade receivables	800	
Interest paid	350	
Income tax under-provided for year to 31st March 2016	30	
Non- Current assets-cost or valuation	27,000	
Non-Current assets-depreciation		4,200
Revaluation reserve		8,000
Inventory at 31st March 2017	850	
Bank	100	
Trade payables		1,800
Long term loans		2,300
Share capital		4,000

Retained earnings		1,130
Dividends paid	600	
Total	**48,730**	**48,730**

Notes

(i) The company revalued its land during the year. This was the first time that such a revaluation had taken place. The land had cost K9 million and had not been depreciated. The valuation was conducted by Valier and Co, a firm of chartered surveyors.

(ii) Depreciation of K3.7 million has been charged during the year and is included under the appropriate cost headings on the trial balance.

(iii) The directors paid a dividend of K600,000 during the year ended 31st March, 2017.

(iv) Taxation for the year has been estimated at K2.1 Million

You are required to;

(a) Prepare the Statement of comprehensive income and loss for the year ended 31st March, 2017 and comment on the general significance of the statement. **(5 marks).**

(b) Prepare the Statement of changes in equity for the year ended 31st March 2017 and comment on the general significance of the statement. **(5 marks).**

(c) Prepare the Balance sheet statement as at 31st March, 2017 and comment on the general significance of the statement. **(5 marks).**

(d) Advise the benefits of preparing the Statement of cashflows to an ordinary person. **(5 marks).**

QUESTION NUMBER TWO (Answer 2a to 2e only)

Question 2a

The University of Zambia (UNZA) is developing a new production process. During the year 2013, the expenditure incurred was K200,000 of which K180,000 was incurred before 1 December 2013 and K20,000 between 1 December 2013 and 31st December 2013. UNZA can demonstrate that, at 1 December 2013, the production process met the criterial for recognition as an intangible asset. The recoverable amount of the knowhow embodied in the process is estimated to be K200,000. How should the above expenditure be treated (5 marks)

Question 2b

An intangible asset is measured by the PACRA limited at fair value. The asset was revalued by K800 in 2013, and there is a revaluation surplus of K800 in the statement of financial position. At the end of 2014, the asset is valued again and a downward valuation of K1,000 is required. State the accounting treatment for the downward revaluation (5 marks)

Question 2c

State and explain factors that are considered in determining the useful life of an intangible asset (4 marks).

Question 2d

Outline three criteria for recognizing development costs as intangible assets and state to what extent you agree to the criteria (3marks).

Question 2e

List three examples of intangible assets and provide an argument as to why they qualify to be classified as intangible asset (3marks).

QUESTION NUMBER THREE (Answer Question 3a to 3d)

Question 3a

Seiko Limited acquired 75% of the shares of Zaiko on 1 January, 2017 when Zaiko had retained earnings of K15,000. The market price of Zaiko shares just before the date of acquisition was K1.60. Seiko company values Non-Controlling interest at fair value. Goodwill is not impaired.

	Seiko (K)	Zaiko (K)
Property, Plant & Equipment	60,000	50,000
Shares in Zaiko	68,000	0
Current Assets	52,000	35,000
Total Assets	**180,000**	**85,000**
Share capital	100,000	50,000
Retained Earnings	70,000	25,000
Current liabilities	10,000	10,000
Total Equity and liabilities	**180,000**	**85,000**

You are required to prepare the consolidated statements of financial position of Seiko Limited. (7 marks)

Question 3b

The statements of financial position of Stepeni Limited and its Subsidiary Kasoma Limited has been made up to 30th June. Stepeni Village has owned all the ordinary shares and 40% of the loan stock of Kasoma Limited since its incorporation.

Statement of Financial Position as at 30th June are as presented below.

	Stepeni Limited.	Kasoma Limited
	Kwacha	Kwacha
Assets		
Non-current assets		
-Property, Plant and Equipment	120,000	100,000
-Investment in Kasoma Limited at cost:		
---80,000 ordinary shares of K1 each	80,000	
---20,000 of 12% loan stock in shenko	20,000	
Current Assets		
-Inventories	50,000	60,000
-Trade receivables	40,000	30,000
--Current account with Kasoma Limited	18,000	-
-Cash and cash equivalents	4,000	6,000
Total Assets	**332,000**	**196,000**
Equity and Liabilities		
Equity		
-ordinary shares of K1 each, fully paid	100,000	80,000
-Retained Earnings	95,000	28,000
Non Current Liabilities		
-10% loan stock	75,000	
-12% loan stock		50,000
Current liabilities		
Trade and other payables	47,000	16,000

Taxation	15,000	10,000
Current account with Stepeni Limited		12,000
Total Equity and Liabilities	**332,000**	**196,000**

The difference on current account arises because of goods in transit.

Prepare the consolidated statement of financial position of Stepeni Limited (7 Marks)

Question 3c

Explain impairment of goodwill and describe the double entry requirements in group accounts. (3 marks).

Question 3d

Explain the term equity and to give three examples of the elements of equity which may be incorporated during the preparation of financial statements. (3 marks)

QUESTION NUMBER FOUR (Answer Question 4a to 4d only)

John Johns and his wife have established an investment company that will be dealing in agriculture properties, plant and equipment. To start up the company they borrowed K10 million from the SAPACO Bank Limited. They have heard of the need to report their financial results in the financial statements and in line with good and sound accounting standards. They have now approached you to explain to them the following matters;

4a. Definition, recognition and disclosure provisions of International Accounting standard number 16 - Property, Plant and Equipment (6 marks).

4b. Definition, recognition, initial measurement provisions of the International Accounting standard number 40 - Investment Property (6 marks).

4c. Definition, capitalization and disclosure provisions of International Accounting standard number 23 - Borrowing Costs (5 marks).

4d. Definition and the accounting treatment of positive and negative goodwill. (3 marks).

QUESTION NUMBER 5 : (Part 5a to 5c) – 20 Marks

Mulungushi Village Complex Limited (MVCL) has a history of growth and success in the investment property business and much of this has been through the acquisition of smaller companies who have offered opportunities in new locations.

Kepa Housing Limited (KHL) represents a potential acquisition target for the MVCL, having a track record of successfully investment businesses as represented in the financial statement represented below.

Year	2017	2018	2019
Currency	K'000	K'000	K'000
Revenue	470	550	650
Profit before tax	60	70	75
Tax	20	25	30
Profit after tax	40	45	45
Dividends paid	30	35	40
Retained profit for the year	**10**	**10**	**5**
Share capital 150,000 ordinary of K1 each	150	150	150
Retained earnings	60	70	75
Shareholders funds	**210**	**220**	**225**
Loan Note (10%) (Check Note a)	40	100	150
Capital employed	250	320	375

Note a

Additional loan notes were issued on 1 January 2015 and 2016.

You are required to:

(a) Calculate the following ratios for all the years

(i) Return on capital employed

(ii) Net profit margin before interest and tax

(iii) Net profit margin after interest and tax

(iv) Return on shareholder's equity

(v) Interest cover

(vi) Dividend cover

Note: (i) to (vi) is worth 6 Marks

(b) Prepare a short report on KHL assessing the trends of financial performance and position. (8 -Marks)

(c) Outline the concept of impairment and identify factors that cause impairment. (6 - Marks)

GRADUATE SCHOOL OF BUSINESS
FINANCIAL REPORTING AND ANALYSIS COURSE

MAF 5010

SESSION EXAMINATIONE
MAY 2020 BLENDED AND EVENING COHORTS

ANSWER ALL FIVE QUESTIONS

THURSDAY 11TH MARCH, 2021

QUESTION NUMBER ONE (Answer Question 1a to 1c only)

1a. Verse 20 Limited imports mobile phones and resells them to students at Universities in Lusaka. The Company trial balance at 31st December 2020 is as follows;

	K'000	K'000
Sales		9,800
Purchases	1,300	
Inventory at 31st December 2019	480	
Warehouse and delivery wages	350	
Sales commissions	180	
Sundry distribution costs	310	
Sundry administration expenses	255	
Administration staff salaries	490	
Taxation	45	
Dividend paid	600	
Warehouse premises-cost	8,500	
Warehouse premises-depreciation		800
Computer network-cost	900	
Computer network -depreciation		200
Delivery vehicles-costs	700	
Delivery vehicles-depreciation		280
Trade receivables	520	
Trade payables		340
Bank	90	
Loan-payable 2022		500
Loan interest	5	
Share capital		1,000
Retained earnings		1,805
	14,725	14,725

(i) The closing inventory was counted on 31st December 2020 and was valued at K520,000

(ii) Depreciation has still to be charged for the year on the following bases;

Warehouse premises	2% of cost
Computer network	25% of book value
Vehicles	25% of book value

(iii) The tax charge for the year has been estimated at K1,900,000

You are Required;

(1a) Prepare the Income statement for the year ended 31st December 2020 and describe the value of the statement to users of financial statements (6 marks).

(1b) Prepare the statement of changes in equity as at 31st December 2020 and describe the value of the statement to users of financial statements (6 marks).

(1c) Prepare the Statement of financial position as at 31st December 2020 and describe the value of the statement to users of financial statements (8 marks).

QUESTION NUMBER TWO (Answer 2a to 2c only)

2a. On January 2018, a Library building has a carrying amount of K140 Million and it was estimated to have a recoverable amount of K90 Million due to falling property prices. In January 2021, that is three years later, the Library building price had risen to K120 Million. You are required to;

(i) Explain impairment loss and the impact it has on the financial performance, liquidity and financial position of a company (4 marks).

(ii) Calculate the impairment loss or gain in January, 2018 (1 mark).

(iii) Compute the value of the reversal of the impairment if any in January 2020 (3 Marks).

2b. The Zambezi Consortium Limited have accounting challenges that relate to lease transactions. They have now hired you as its consultant to advice management on the newly introduced International Financial Reporting Standard Number 16 (IFRS 16), which has now replaced International Accounting Standard Number 17. You are now required to briefly advice management on;

(i) the objectives of IFRS 16 (3marks),

(ii) main features of IFRS 16 (3 marks)

(iii) exemptions of IFRS 16. (3 marks).

2c. Describe the significance of the independent external auditors opinion on published financial statement (4 marks).

QUESTION NUMBER THREE (Answer Question 3a to 3b)

You are presented with the following financial statements for Stepeni Village Limited.

Stepeni Village Income Statement for the year ended 31st December 2018

	K'000
Profit before tax	24,305
Income tax expense	8,064
Profit for the year	16,241
Retained earnings on 1 January 2017	49,787
Debt for the year	16,241
Dividends paid	(10,500)
Retained earnings at 31st December 2018	55,528

Ndibu River Balance sheets as at 31st December

	2007		2008	
	K'000	K'000	K'000	K'000
Non current Assets				
- Motor Vehicles at Cost	53,592		67,704	
Less depreciation	23,814		29,568	
		29778		38,136

Equipment at cost	26,040		26,040	
Less depreciation	6,510		13,020	
		19,530		13,020
Current Assets				
Inventory	34,314		30,912	
Receivables	26,334		30,156	
Less bad debt	630		840	
		25,704		29,316
Cash at the bank		4,343		18,904
Total Assets		113,669		130,288
Equity				
Share capital		42,000		46,200
Retained earnings		49,787		55,528
Long term borrowings				

(See note ii below)				
Current liabilities				
Payables	12,768		12,096	
Taxation	9,114		8,064	
		21,882		20,160
Total		113,669		130,288

Notes

i. There were no current asset disposals

ii The loan interest paid in 2018 was K672,000

iii Accrued dividends were declared before the year-end

iv There has been no over or under provision for income tax in the year ended 31st December 2017.

(a) Prepare a cash flow statement for Ndibu River in accordance with IAS No. 7. **(14 Marks)**

(b) Comment on the usefulness of cash flow statements to external users **(6 Marks)**

QUESTION NUMBER FOUR (Answer Question 4a to 4d only)

John Johns and his wife have established an investment company that will be dealing in agriculture properties, plant and equipment and including investment properties. To start up the company they borrowed K10 million from the SAPACO Bank Limited. They have heard of the need to report their financial results in the financial statements and in line with good and sound accounting standards. They have now approached you for advice and have asked you to;

4a. Define Property, Plant and Equipment revaluations, and how they should treat an increase or decrease in revaluations in the books of accounts and financial statements. (4 marks).

4b. Define research and development and explain to them the criteria's for qualifying development costs as intangible asset. (6 marks).

4c. Define amortization, why they should provide for amortization in the financial statements and lastly why they should not amortize an intangible asset with an indefinite useful life. (4 marks).

4d. Define asset impairments, outline reasons as to why they should provide for impairments in the books of accounts and financial statements and lastly outline factors that will help them identify an impaired asset and the accounting treatment of impairment loss. (6 marks).

QUESTION NUMBER 5 : (Part 5a to 5c) – 20 Marks

The Statement of Profit and Loss and the Statement of Financial Position for Ndola Construction Company Limited (NCCL) are outlined below.

Ndola Construction Company Limited Statement of Profit and Loss for the year ending 31st December		
Financial Year	2020	2019
Currency	K'000	K'000
Revenue	390,000	355,000
Cost of sales	-245,000	-230,000
Gross Profit	145,000	125,000
Other Income	20,667	11,300
Distribution costs	-9,000	-8,700
Administration expenses	-20,000	-21,000
Other expenses	-2,100	-1,200
Finance Costs	-8,000	-7,500
Share of profits from associates	35,100	30,100
Profit before tax	161,667	128,000
Income tax expense	-40,417	-32,000
Profit for the year	121,250	96,000

Ndola Construction Company Limited Statement of Financial Position as at 31st December		
	2020	2019
	K'000	K'000
Assets		
Non Current Assets		
-Property, Plant and Equipment	350,000	400,000
-Goodwill	80,800	70,000
-Other intangible Assets	227,470	220,000
-Investment in Associates	100,150	90,000
-Investment in Equity instruments	142,500	145,000
Sub total of Non current Assets	**901,620**	**925,000**
Current Assets		
-Inventories	135,230	120,000
-Trade Receivables	91,600	85,000
-Other Current Assets	25,650	25,000
-Cash and cash equivalents	312,400	311,000
Sub total of current Assets	**564,880**	**541,000**
Total Assets	1,466,500	1,466,000

Equity and Liabilities		
Equity		
-Share capital	650,000	645,000
-Retained Earnings	243,500	240,000
-Other Components of equity	10,250	9,000
-Non Controlling interest	70,050	72,000
Subtotal of Equity	**973,800**	**966,000**
Non Current Liabilities		
-Long term borrowing	120,000	140,000
-Deferred tax	28,800	30,000
-Long term provision	28,850	40,000
-Subtotal	177,650	210,000
Current Liabilities		
-Trade payables	115,100	95,000
-Short term borrowings	150,000	140,000
-Current tax payables	10,000	27,000
-Short term provision	40,000	28,000
Subtotal	315,100	290,000

Total Liabilities	492,750	500,000
Total Equity and Liabilities	1,466,550	1,466,000

You are required to:

(5a) Identify and compute ten (10) accounting ratios for the financial year ending 2020 and its comparator year and briefly analyze the financial position of the NCCL (10 marks)

(5b) Outline the general weaknesses of using ratios in analyzing financial statements of companies like the NCCL (4 marks).

(5c) Outline briefly the concept of off balance sheet financing (OBSF) and give four examples of OBSF. (6 marks).

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

MSc ACCOUNTING AND FINANCE

MAY 2020 COHORT BLENDED/EVENING

SESSIONAL EXAMINATION

DATE: 24TH SEPTEMBER, 2021

MAF 5022: STRATEGIC MANAGEMENT ACCOUNTING

EXAM TIME: 09:00 HOURS

DURATION: THREE (3) HOURS

VENUE: SPORTS HALL

INSTRUCTIONS:

1. The Paper has a Total Number of ~~Six (6)~~ SEVEN (7) Questions Comprising Sections A and B.
2. Answer a Total of FOUR (4) Questions.
3. Section A is *COMPULSORY.* From Section B Answer *ANY TWO (2)* Questions.
4. Marks Allocation Indicates the Depth of the Answer Expected.

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

SECTION A – COMPULSORY

QUESTION ONE

An investor is going to purchase one of the three types of real estate. The investor must decide among an apartment building, an office building, and a warehouse. The future states of nature that will determine how much profit the investor will make are good economic conditions and poor economic conditions. The profits expected to result from each decision in the event of each state of nature are shown in the table below. The amounts are in millions of Kwacha.

Decision (Purchase)	State of Nature	
	Good Economic Conditions	Poor Economic Conditions
Apartment Building	250	150
Office Building	500	-200
Warehouse	150	50

Required

Make an investment decision using:

A. Maximax criterion **(5 Marks)**
B. Laplace criterion **(5 Marks)**
C. Maximin criterion **(5 Marks)**
D. Mininmax regret criterion **(5 Marks)**
E. Hurwicz criterion **(5 Marks)**

QUESTION TWO

Peter Likando has worked for some years as a sales representative, but has recently been made redundant. He intends to start up in business on his own account, using K15,000 which he currently has invested with a building society. Peter maintains a bank account showing a small credit balance, and he plans to approach his bank for the necessary additional finance. Peter provides the following additional information.

(i) Arrangements have been made to purchase fixed assets costing K8,000. These will be paid for at the end of September 2021 and are expected to have a five-year life, at the end of which they will possess a nil residual value.

(ii) Stocks costing K5,000 will be acquired on 28th September 2021 and subsequent monthly purchases will be at a level sufficient to replace forecast sales for the month.

(iii) Forecast monthly sales are K3,000 for October 2021, K6,000 for November 2021 and December 2021, and K10,500 from January 2022 onwards.

(iv) Selling price is fixed at the cost of stock plus 50%.

(v) Two months' credit will be allowed to customers but only one month's credit will be received from suppliers of stock.

(vi) Running expenses, including rent but excluding depreciation of fixed assets, are estimated at K1,600 per month.

(vii) Peter intends to make monthly cash drawings of K1,000.

Required:

A. Prepare Peter Likando's budgeted profit and loss account for six months from 1 October 2021 to 31 March 2022. **(10 Marks)**

B. Prepare Peter Likando's budgeted budgeted balance sheet as at 31 March 2022. **(15 Marks)**

SECTION B – ATTEMPT ANY TWO QUESTIONS

QUESTION THREE

A company has been making a machine to order for a customer, but the customer has since gone into liquidation, and there is no prospect that any money will be obtained from the winding up of the company. Costs incurred to date in manufacturing the machine are K50,000 and progress payments of K15,000 had been received from the customer prior to the liquidation. The sales department has found another company willing to buy the machine for K34,000 once it has been completed. To complete the work, the following costs would be incurred.

(i) Materials: these have been bought at a cost of K6,000. They have no other use, and if the machine is not finished, they would be sold for scrap for K2,000.

(ii) Further labour costs would be K8,000. Labour is in short supply, and if the machine is not finished, the work force would be switched to another job, which would earn K30,000 in revenue, and incur direct costs of K12,000 and absorbed (fixed) overhead of K8,000.

(iii) Consultancy fees K4,000. If the work is not completed, the consultant's contract would be cancelled at a cost of K1,500.

(iv) General overheads of K8,000 would be added to the cost of the additional work.

Required

With the help a relevant cost summary, assess whether the new customers offer should be accepted. **(25 Marks)**

QUESTION FOUR

Mwango Mulima is the advertising manager for Makwebo Nsapato Limited. She is currently working on a major promotional campaign. Her ideas include the installation of a new lighting system and increased display space that will add K24,000 in fixed costs to the K270,000 in fixed costs currently spent. In addition, Mwango is proposing a 5% price decrease on the K40

that will produce a 20% increase in sales volume of 20,000. Variable costs will remain at K24 per pair of shoes. Management is impressed with Mwango ideas but concerned about the effects these changes will have on the break-even point and the margin of safety.

Required

A. Computation of the current break-even point in units, and compare it to the break-even point in units if Mwango's ideas are used. **(6 Marks)**

B. Compute the margin of safety ratio for current operations and after Mwango's changes are introduced (round to nearest full percent). **(6 Marks)**

C. Prepare a CVP (Cost-Volume-Profit) income statement for current operations and after Mwango's changes are introduced. **(7 Marks)**

D. Explain whether Mwango's changes should be adopted or not using the above information calculated data (A, B and C above) to support your suggestion. **(6 Marks)**

QUESTION FIVE

With the use of practical examples discuss the following:

A. Performance measurement and organizational vision **(5 Marks)**

B. Responsibility accounting and segmented reporting **(5 Marks)**

C. Financial vs non-financial performance measures **(5 Marks)**

D. Managerial incentive schemes **(5 Marks)**

E. Performance contracting **(5 Marks)**

QUESTION SIX

A. With the aid of practical examples discuss the role of accountants in environmental management accounting. **(9 Marks)**

B. Discuss the concept of environmental management accounting and how managers can use it to manage costs. **(8 Marks)**

C. Cite and explain types of opportunities available for environmental awareness in management accounting. **(8 Marks)**

QUESTION SEVEN

A. Describe the Target Costing Process steps and explain the role of finance in implementing target costing. **(10 Marks)**

B. Explain with example the following:

(a) Process Value Analysis **(5 Marks)**

(b) Value Added Activities **(5 Marks)**

(c) Discretionary Activities **(5 Marks)**

END OF EXAMINATION PAPER

THE UNIVERSITY OF ZAM BIA
GRADUATE SCHOOL OF BUSINESS

MSc ACCOUNTING AND FINANCE

NOVEMBER 2018 COHORT BLENDED/EVENING

SESSIONAL EXAMINATION

DATE: 20TH SEPTEMBER, 2019

MAF 5022: STRATEGIC MANAGEMENT ACCOUNTING

EXAM TIME: 14:00 HOURS

DURATION: THREE (3) HOURS

INSTRUCTIONS:

1. **The Paper has a Total Number of Five (5) Questions. *Question ONE is COMPULSORY***
2. **Answer a Total of FOUR (4) Questions.**
3. **Marks Allocation Indicates the Depth of the Answer Expected.**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

QUESTION ONE

Mr Zoo is planning to set up a mini Zoo in Chilanga.

The following relates to different pricing plans of visiting the zoo and costs of running the zoo.

Pricing Plan 1 - K30 per person (a special pack will be included)
Pricing Plan 2 - K25 per visitor (the special pack not to be included)

Variable Costs per visitor

Special Pack - K8
Zoo Consumables - K7
Zoo Expenses - K2

Total Fixed Costs - K200,000

Required

Study the information above then answer the following questions.

A. Using the CVP formula, calculate the number of units (and its kwacha amount) for achieving

a. Breakeven **(4 Marks)**

b. A profit of K30,000 for both plans. **(4 Marks)**

B. Calculate the Contribution Margin ratio for both plans. **(4 Marks)**

C. Describe the meaning of Contribution Margin ratio relation to Zoo business. **(3 Marks)**

D. Explain the relationship between Contribution Margin ratio and Number of Breakeven units in relation to the Zoo business. **(3 Marks)**

E. Explain why it is important to calculate Margin of Safety for Zoo business. **(3 Marks)**

F. State and explain two examples of fixed cost in relation to the zoo. **(2 Marks)**

G. Explain the concept of Relevant Range in relation to the Zoo. **(2 Marks)**

QUESTION TWO

A. You are the Business Analyst for Top Brass Energy Drink Ltd. The company has been in existence for seven (7) year now producing the Top Brass Energy Drink which has been a success story and currently one of the leading brands on the Zambian energy drinks market. The company is considering developing an extension product to its core business

to be known as Slim Fit Drink, a solution to obesity. The Chief Executive Officer has instructed you to collaborate with consultants and carry out an external analysis of business prospects for the new product in the two regions of Lusaka and Copperbelt as the first target markets. You have a number of tools at your disposal that you are contemplating using to carry out the market analysis and among them is Porter's Five Forces.

Required

Describe the Porter's Five Forces as an analytical tool and explain the relevance of each of the specific areas you wish to consider in the development of the new product.

(15 Marks)

B. Activity-based management (ABM) is a system-wide, integrated approach that focuses management's attention on activities with the objectives of improving customer value and the profit achieved by providing this value. ABC is the major source of information for activity-based management. Thus, the activity-based management model has two dimensions, cost dimension and process dimension.

Required

Briefly compare and contrast the two dimensions and highlight the kind of information they provide, how they work and their areas of application. **(10 Marks)**

QUESTION THREE

Competitive analysis in strategic management is an assessment of the strengths and weaknesses of current and potential competitors. This analysis provides both an offensive and defensive strategic context to identify opportunities and threats. Profiling combines all of the relevant sources of competitor analysis into one framework in the support of efficient and effective strategy formulation, implementation, monitoring and adjustment.

Competitor analysis is an essential component of corporate strategy. It is argued that most firms do not conduct this type of analysis systematically enough. As a result, traditional environmental scanning methods commonly used places many firms at risk of dangerous competitive blind spots due to a lack of robust competitor analysis.

Required

In the context of strategic management accounting;

A. Explain the strategic rationale of competitor profiling and state three main objectives. **(7 Marks)**

B. Discuss six main factors considered when carrying out competitor profiling. **(18 Marks)**

QUESTION FOUR

A company has been making a machine to order for a customer, but the customer has since gone into liquidation, and there is no prospect that any money will be obtained from the winding up of the company. Costs incurred to date in manufacturing the machine are K50,000 and progress payments of K15,000 had been received from the customer prior to the liquidation. The sales department has found another company willing to buy the machine for K34,000 once it has been completed. To complete the work, the following costs would be incurred.

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(iii) Consultancy fees K4,000. If the work is not completed, the consultant's contract would be cancelled at a cost of K1,500.

(iv) General overheads of K8,000 would be added to the cost of the additional work.

Required

With the help a relevant cost summary, assess whether the new customers offer should be accepted. **(25 Marks)**

QUESTION FIVE

Discuss each of the following transfer pricing methods and the circumstances under which each method can be used.

A. Market-based **(5 Marks)**
B. Marginal cost **(5 Marks)**
C. Full cost **(5 Marks)**
D. Cost-plus a mark-up **(5 Marks)**
E. Negotiated transfer prices **(5 Marks)**

QUESTION SIX

A. Discuss the concept of target costing and the role of finance in implementing target costing. **(7 Marks)**
B. With the help of a diagram, describe the implementation process of target costing.

(18 Marks)

END OF EXAMINATION

THE UNIVERSITY OF ZAM BIA
GRADUATE SCHOOL OF BUSINESS

MSc ACCOUNTING AND FINANCE

MAY 2019 COHORT BLENDED/EVENING

SESSIONAL EXAMINATION

DATE: TUESDAY 30TH JUNE 2020

MAF 5022: STRATEGIC MANAGEMENT ACCOUNTING

EXAM TIME: 09:00 HOURS

VENUE: SPORTS HALL

DURATION: THREE (3) HOURS

INSTRUCTIONS:

1. The Paper has a Total Number of Six (6) Questions Comprising Sections A and B.
2. Answer a Total of FOUR (4) Questions.
3. Section A is *COMPULSORY.* From Section B Answer *ANY TWO (2)* Questions.
4. Marks Allocation Indicates the Depth of the Answer Expected.

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

SECTION A – COMPULSORY

QUESTION ONE

Mwango Mulima is the advertising manager for Makwebo Nsapato Limited. She is currently working on a major promotional campaign. Her ideas include the installation of a new lighting system and increased display space that will add K24,000 in fixed costs to the K270,000 in fixed costs currently spent. In addition, Mwango is proposing a 5% price decrease on the K40 that will produce a 20% increase in sales volume of 20,000. Variable costs will remain at K24 per pair of shoes. Management is impressed with Mwango ideas but concerned about the effects these changes will have on the break-even point and the margin of safety.

Required

A. Computation of the current break-even point in units, and compare it to the break-even point in units if Mwango's ideas are used. **(6 Marks)**

B. Compute the margin of safety ratio for current operations and after Mwango's changes are introduced (round to nearest full percent). **(6 Marks)**

C. Prepare a CVP (Cost-Volume-Profit) income statement for current operations and after Mwango's changes are introduced. **(7 Marks)**

D. Explain whether Mwango's changes should be adopted or not using the above information calculated data (A, B and C above) to support your suggestion. **(6 Marks)**

QUESTION TWO

Kulangwa Ltd is a copperbelt based company specialised in communication technology. The company's major clientele are the two mining giants Konkola Copper Mines Plc and Mopani Copper Mines Plc. There is great uncertainty for the company regarding their business prospects with respect to the prospecting sales tax and the recent happening at Konkola Copper Mines Plc which has been placed under provisional liquidation. Further, the company is facing eminent obsolescence of its technology due to major ground breaking innovations in the ITC world. The Mopani Copper Mines Plc is also planning to effect huge budget cuts in the wake of the above mentioned happenings.

As a strategic management accounting Consultant, you have been approach by Kulangwa Ltd for professional advice on how the company can navigate the current turbulences.

Required

Provide a strategic management survival business plan report in the context of management accounting following your extensive and thorough review of the situation. In your report briefly apply the concepts of Product Life Cycle, Financial Risks and Financial Control, Diversification and Boston Matrix. **(25 Marks)**

SECTION B

QUESTION THREE

Shaft Mining Ltd is a mining contractor with ten autonomous divisions operating in various copper mines in Copperbelt and North-Western provinces of Zambia. The cost of capital for the group is 12% per annum and is currently earning 15% on its capital employed.

In the ROCE calculation, return is equated with net profit and capital employed figure at the beginning of the financial year. All fixed assets are depreciated on a straight-line basis. Investments in new projects include incremental working capital. Projects sold or withdrawn from operation are treated as consisting of fixed assets only.

If no new expenditure transactions take place the position of four of the divisions would be:

Division	*Capital employed as at 1 January 2019*	*Net profit*	*Budgeted for 2019 Sales*
	K'000	**K'000**	**K'000**
Kitwe	3,200	800	8,000
Solwezi	4,500	1,500	14,000
Chingola	2,800	840	7,000
Mufulira	2,000	260	2,000

The following transactions were proposed:

Kitwe Division investment of K1,000,000 to yield sales of K1,500,000 per annum and net profit of K200,000 per annum.

Solwezi Division sale for K750,000 of a projected that is budgeted to yield a net profit of K150,000 in 2019. The original equipment cost K6,000,000 seven years ago with an expected life of eight years.

Chingola Division (a) sale of product line at book value. The original equipment cost K600,000 two years ago with an expected life of three year. This line is budgeted to yield a net of K200,000 in 2019; combined with

(b) replacement of (a) above by investing K1,000,000 in a new product to yield K300,000 per annum.

Mufulira Division investment of K800,000 in a project to yield sales of K360,000 per annum and a net profit of K112,000 per annum.

(***Note***. In connection with each of the above transactions, you are to assume that the sale and/or investment would be completed by 1 January 2019 so as to be included in the relevant ROCE calculations for the year 2019. Ignore taxation and inflation considerations and assume that actual results are as budgeted.)

Assume that each transaction goes ahead.

Required

A. Calculate the new ROCE for each division for the year ending 31 December 2019. **(8 Marks)**

B. Identify those divisional managers whose bonuses will be higher if they receive annual bonuses directly related to the level of their respective ROCE. **(2 Marks)**

C. State, in respect of each division, whether the group's interest will be favourably or adversely affected by the proposed transactions. Explain briefly why in each case. **(4 Marks)**

D. With the help of calculations, identify with brief reasons, which proposals the group would approve if its new capital expenditure were limited to K2,000,000 for the four divisions. **(7 Marks)**

E. Calculate the lowest price at which the equipment should be sold by Solwezi Division if the transaction proposed is to break even financially for the group. **(4 Marks)**

QUESTION FOUR

Competitive analysis in strategic management is an assessment of the strengths and weaknesses of current and potential competitors. This analysis provides both an offensive and defensive strategic context to identify opportunities and threats. Profiling combines all of the relevant sources of competitor analysis into one framework in the support of efficient and effective strategy formulation, implementation, monitoring and adjustment.

Competitor analysis is an essential component of corporate strategy. It is argued that most firms do not conduct this type of analysis systematically enough. As a result, traditional environmental scanning methods commonly used places many firms at risk of dangerous competitive blind spots due to a lack of robust competitor analysis.

Required

In the context of strategic management accounting;

A. Explain the strategic rationale of competitor profiling and state three main objectives. **(7 Marks)**

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QUESTION FIVE

A. You are the Business Analyst for Top Brass Energy Drink Ltd. The company has been in existence for seven (7) year now producing the Top Brass Energy Drink which has been a success story and currently one of the leading brands on the Zambian energy drinks market. The company is considering developing an extension product to its core business

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Required

Describe the Porter's Five Forces as an analytical tool and explain the relevance of each of the specific areas you wish to consider in the development of the new product.

(15 Marks)

B. Activity-based management (ABM) is a system-wide, integrated approach that focuses management's attention on activities with the objectives of improving customer value and the profit achieved by providing this value. ABC is the major source of information for activity-based management. Thus, the activity-based management model has two dimensions, cost dimension and process dimension.

Required

Briefly compare and contrast the two dimensions and highlight the kind of information they provide, how they work and their areas of application. **(10 Marks)**

QUESTION SIX

Sales of product B over the seven year period from 2013 to 2019 were as follows.

Year	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
Sales of B ('000 units)	22	25	24	26	29	28	30

Required

A. Calculate the coefficient of correlation and comment on the observed data. **(10 Marks)**

B. Calculate the trend line of sales, and forecast sales in 2018 and 2019. **(15 Marks)**

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MSc ACCOUNTING AND FINANCE

MAY 2019 COHORT BLENDED/EVENING

SESSIONAL EXAMINATION

DATE: THURSDAY 10TH SEPTEMBER 2020

MAF 5022: STRATEGIC MANAGEMENT ACCOUNTING

EXAM TIME: 09:00 HOURS

VENUE: GSB

DURATION: THREE (3) HOURS

INSTRUCTIONS:

1. **The Paper has a Total Number of Five (5) Questions Comprising Sections A and B.**
2. **Answer a Total of FOUR (4) Questions.**
3. **Section A is *COMPULSORY.* From Section B Answer *ANY TWO (2)* Questions.**
4. **Marks Allocation Indicates the Depth of the Answer Expected.**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

SECTION A – COMPULSORY

QUESTION ONE

Tubile Ltd is a company engaged solely in the manufacture of sweaters, which are bought mainly for sporting activities. Present sales are direct to retailers, but in recent years there has been a steady decline in output because of increased foreign competition. In the last trading year (2018) the accounting report indicated that the company produced the lowest profit in 10 years. The forecast in 2019 indicates that the present deterioration in profit is likely to continue. The company considers that a profit of K800,000 should be achieved to provide an adequate return on capital. The managing director has asked that a review be made of the present pricing and marketing policies. The marketing director has completed this review, and passes the proposals on to you for evaluation and recommendation, together with the income statement for the year ending 31 December 2018.

Tubile Ltd income statement for year ending 31 December 2011

	K	K	K
Sales revenue (100,000 sweaters @ K100)			10,000,000
Factory cost of goods sold:			
Direct materials	1,000,000		
Direct labour	3,500,000		
Variable factory overheads	600,000		
Fixed factory overheads	2,200,000	7,300,000	
Administration overhead		1,400,000	
Selling and distribution:			
Overhead:			
Sales commission (2% of sales)	200,000		
Delivery costs (variable per unit sold)	500,000		
Fixed costs	400,000	1,100,000	9,800,000
Profit			200,000

The information to be submitted to the managing director includes the following two proposals:

(i) To proceed on the basis of analyses of market research studies which indicate that the demand for the sweaters is such that a 10 per cent reduction on selling price would increase demand by 40 per cent.

(ii) To proceed on the basis of a view by the marketing director that a 10 per cent price reduction, together with a national advertising campaign costing K300,000 may increase sales to the maximum capacity of 160 000 sweaters.

Required

A. The calculation of break-even sales value based on the 2018 accounts. **(7 Marks)**

B. Calculate the contribution per unit of proposal **(i)** and the number of units Tubile Ltd would require to sell at K90 each to earn the target profit of K800,000. **(8 Marks)**

C. A profit statement for proposal **(ii)** using contribution amount in **B.** **(10 Marks)**

QUESTION TWO

Sales of product B over the seven year period from 2011 to 2017 were as follows.

Year	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Sales of B ('000 units)	22	25	24	26	29	28	30

Required

A. Calculate the coefficient of correlation and comment on the observed data. **(10 Marks)**
B. Calculate the trend line of sales, and forecast sales in 2018 and 2019. **(15 Marks)**

SECTION B

QUESTION THREE

A company has been making a machine to order for a customer, but the customer has since gone into liquidation, and there is no prospect that any money will be obtained from the winding up of the company. Costs incurred to date in manufacturing the machine are K50,000 and progress payments of K15,000 had been received from the customer prior to the liquidation. The sales department has found another company willing to buy the machine for K34,000 once it has been completed. To complete the work, the following costs would be incurred.

(i) Materials: these have been bought at a cost of K6,000. They have no other use, and if the machine is not finished, they would be sold for scrap for K2,000.

(ii) Further labour costs would be K8,000. Labour is in short supply, and if the machine is not finished, the work force would be switched to another job, which would earn K30,000 in revenue, and incur direct costs of K12,000 and absorbed (fixed) overhead of K8,000.

(iii) Consultancy fees K4,000. If the work is not completed, the consultant's contract would be cancelled at a cost of K1,500.

(iv) General overheads of K8,000 would be added to the cost of the additional work.

Required

With the help a relevant cost summary, assess whether the new customers offer should be accepted. **(25 Marks)**

QUESTION FOUR

Competitive analysis in strategic management is an assessment of the strengths and weaknesses of current and potential competitors. This analysis provides both an offensive and defensive strategic context to identify opportunities and threats. Profiling combines all of the relevant sources of competitor analysis into one framework in the support of efficient and effective strategy formulation, implementation, monitoring and adjustment.

Competitor analysis is an essential component of corporate strategy. It is argued that most firms do not conduct this type of analysis systematically enough. As a result, traditional environmental scanning methods commonly used places many firms at risk of dangerous competitive blind spots due to a lack of robust competitor analysis.

Required

In the context of strategic management accounting;

A. Explain The strategic rationale of competitor profiling and three main objectives **(10 Marks)**

B. Discuss six main factors considered when carrying out competitor profiling **(15 Marks)**

QUESTION FIVE

It is estimated that direct labour is subject to a learning curve effect of 85 per cent. 2,000 labour hours are needed to produce the first unit.

No. of Order	*No. of Units Per order*
1	2
2	4
3	6
4	12
5	24
6	48

Required

A. Analyse the learning curve effect on data using mathematical method. **(15 Marks)**

B. The company has just completed orders such that cumulative production is 6 units and that an enquiry has been received for an order of 10 units. Calculate the incremental

hours for the 10 units. (**10 Marks**)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

MBA Finance/ MSc Accounting & Finance

Final Examination

Thursday 10th December 2020

MAFF 5120: CORPORATE FINANCE

Total Marks=100

Time Allowed: Reading Time: 5 minutes, Writing time: 3 hours

Instructions

1. Do not open paper until instructed by the supervisor
2. During reading and planning time only the exam paper can be annotated. You must not write in your answer booklet until instructed by the supervisor.
3. Show all your workings and present neat work
4. **Answer all questions in Section A for a maximum 40 marks and answer any three questions in Section B, for a maximum of 60 marks.**
5. Where market risk premium is not given use 6%.
6. Formulae and Financial Tables shall be provided to you.

SECTION A

QUESTION 1

You are provided with the projected income statements for a project:

Year	1	2	3	4
Revenues (K)	K10,000	K11,000	K12,000	K13,000
– Cost of goods sold (K)	K4,000	K4,400	K4,800	K5,200
– Depreciation	K4,000	K3,000	K2,000	K1,000
= EBIT	K2,000	K3,600	K5,200	K6,800

- The tax rate is 40%.
- The project required an initial investment of K15,000 and an additional investment of K2,000 at the end of year two.
- The working capital is anticipated to be 10% of revenues, and the working capital investment has to be made at the beginning of each period.

Required:

a. Estimate the free cash flow to the firm for each of the four years. (9 marks)
b. Estimate the payback period for investors in the firm. (3 marks)

c. Estimate the NPV to investors in the firm, if the cost of capital is 12%. Would you accept the project? (3 marks)

[Total 15 marks]

QUESTION 2

Mulobezi Corporation, a major manufacturing and distribution firm is considering a major change in dividend policy. It currently has 50 million shares outstanding and pays an annual dividend of K2 per share. The firm current and projected income statement are provided below (in millions):

	Current	*Projected for Next Year*
EBITDA	K1,200	K1,350
– Depreciation	K200	K250
EBIT	K1,000	K1,100
– Interest expense	K200	K200
EBT	K800	K900
– Taxes	K320	K360
Net income	K480	K540

The firm's current capital expenditure is K500 million. It is considering five projects for the next year:

Project	*Investment*	*Beta*	*IRR (Using Cash Flows to Equity)*
A	K190 mil	0.6	12.0%
B	K200 mil	0.8	12.0%
C	K200 mil	1.0	14.5%
D	K200 mil	1.2	15.0%
E	K100 mil	1.5	20.0%

The firm's current beta is 1.0, the current Treasury bill rate is 5.5 percent and the current equity risk premium is 10.5%. The firm expects working capital to increase K50 million both this year and next. The firm plans to finance its net capital expenditures and working capital needs with 30 percent debt.

Required:

a. What is the firm's current payout ratio? (1 mark)

b. What proportion of its current FCFE is it paying out as dividends? (3 marks)

c. What would your projected capital expenditure be for next year (i.e., which of the five projects would you accept and why)? (4 marks)

d. How much cash will the company have available to pay out as dividends next year? (What is the maximum amount the company can pay out as dividends?) (2 marks)

[Total 10 marks]

QUESTION 3

As CEO of a major corporation, you have been asked to decide on how much you can afford to borrow. You currently have 10 million shares outstanding, and the market price per share is K50. You also currently have about K200 million in debt outstanding (market value). You are rated as a BBB corporation now.

- Your stock has a beta of 1.5 and the risk-free rate is 8%.
- Your marginal tax rate is 46%.
- You estimate that your rating will change to a B if you borrow K100 million. The BBB rate now is 11%. The B rate is 12.5%.

Required:

a. Given the marginal costs and benefits of borrowing the K100 million, should you go ahead with it ? (10 marks)

b. If you borrow the K100 million, what will the firm value be after the borrowing? (1 mark)

c. Assume that you have a project that requires an investment of K100 million. It has expected before-tax revenues of K20 million a year in perpetuity. Is this a desirable project by your criteria? Why or why not? (4 marks)

[Total 15 marks]

SECTION B- 60 Marks

QUESTION 4.

a. The figure below shows the output results of the regression of CBBC Power Ltd's monthly returns against the Stock index returns for five years:

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.582730945
R Square	0.339575354
Adjusted R Square	0.335865103
Standard Error	0.076904771
Observations	180

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.541301791	0.541302	91.52356	9.34006E-18
Residual	178	1.052753209	0.005914		
Total	179	1.594055			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.023011046	0.005842701	3.938426	0.000118	0.011481171	0.034540921	0.011481171	0.034540921
0.07	1.187812055	0.124159879	9.566795	9.34E-18	0.942797321	1.432826788	0.942797321	1.432826788

Required:

i. What is the intercept (alpha) and slope (beta) of the regression? (2 marks)

ii. If you bought stock in CBBC Power Ltd today, how much would you expect to make as a return over the next year? [The six-month T. Bill rate is 6%, and Equity Risk Premium is 6%] (1mark)

iii. Looking back over the last five years, how would you evaluate CBBC Power Ltd's performance relative to the market? (The risk-free rate during the period was also 6% on an annual basis) (4 marks)

iv. Assume now that you are an undiversified investor and that you have all of your money invested in CBBC Power Ltd. What would be a good measure of the risk that you are taking on? How much of this risk would you be able to eliminate if you diversify? (2 marks)

b. Using relevant examples explain the first principles of corporate finance (11 marks)

[Total 20 Marks]

QUESTION 5

a. Panadol Ltd a major pharmaceutical company, is considering increasing its debt ratio from 11 percent to 40 percent, which is its optimal debt ratio. Its beta is 1.17, and the current risk-free rate is 6.50 percent. The return on equity was 14.5 percent in the most recent year, but it is dropping as health care matures as a business. The company has also been mentioned by various business media as a possible takeover target. The company is controlled by the Mubita family who owns 55% of the company's shares.

Required:

i. Panadol Ltd has to choose between moving to its optimal gradually or immediately. What factors should the company take into account when choosing between the two options (6 marks)

ii. How would you recommend that Panadol Ltd increase its debt ratio? (4 marks)

b. When evaluating independent investment projects, you will arrive at the same decision when you use either the Net present value or Internal Rate of Return methods. However, when choosing between mutually exclusive investments the two methods will cause a conflict of choice. What is the underlying cause of conflicts? (6 marks)

c. Explain why start-up companies have difficulties accessing external financing (4 marks)

[Total 20 marks]

QUESTION 6

a) Explain the significance of the assumption, at the heart of the financial theory, that investors are 'risk-averse'. (4 Marks)

b) Explain the three forms of market efficiency. (13 marks)

c) What is reinvestment risk? (3 marks)

[Total 20 marks]

QUESTION 7

a) In corporate finance, the objective when making investment, financing and dividends decisions is to maximize firm value. However, some stakeholders argue that this objective is 'utopian'. Do you agree with the stakeholders' statement? Explain. (15 marks)

b) Under CAPM the market risk of any financial security is captured by Beta. Summarise the determinants of beta (10 Marks)

[Total 20 Marks]

----------END OF EXAM.....

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

MBA Finance/ MSc Accounting & Finance

Final Examination

Wednesday 10th March 2021

MAFF 5120: CORPORATE FINANCE

Total Marks=100

Time Allowed: Reading Time: 5 minutes, Writing time: 3 hours

Instructions

1. Do not open paper until instructed by the supervisor
2. During reading and planning time only the exam paper can be annotated. You must not write in your answer booklet until instructed by the supervisor.
3. Show all your workings and present neat work
4. Answer all questions in Section A for a maximum of 40 marks and answer any three questions in Section B, for a maximum of 60 marks.
5. The financial and formulae tables should not be removed from the exam room
6. Where market risk premium is not given use 11%.

SECTION A Compulsory -40 Marks

QUESTION 1

Mulobezi Stores Ltd is planning to open a retail store at the newly constructed Chamba Valley Mal in the Kwamwena Area of Lusaka. The Project cashflows as indicated in Table 1.

Table 1: Project Cashflows

Year 0 (Initial Investment)	Year 1 cashflows	After year 1
K1,000,000	K3,000,000	Cashflows shall grow at 5% in perpetuity

Your research indicates that:

- The yield on a Ten-Year GRZ Treasury bond is 16%.
- Zambia sovereign rating by Moodys is Caa with a default spread of 8%.
- Mulobezi is not listed on the Lusaka Securities Exchange.
- Mulobezi's pre-tax cost of debt of 10%
- Mulobezi Marginal Tax rate is 40%
- The project shall be funded by 30% Debt and 70% Equity.

Additionally, you have collected information on retail companies as shown in Table 2.

Table 2: Retail companies listed on the Stock Exchange

Company	**Levered Beta**	**Debt to Equity Ratio**	**Cash/firm Value(%)**	**Tax Rates**
Mushe Stores Ltd	0.98	30%	10%	40%
Geraldo Stores Plc	0.78	37%	5%	40%
Kachana Stores Ltd	1.68	30%	10%	36%

Required:

a. **Estimate the Project's cost of capital (13 marks)**
b. **Estimate the project NPV?** (Discount factors should be reflected in your workings) **(6 Marks)**
c. **Advise whether Mulobezi should go ahead and invest in the project. (1 mark)**

[Total 20 Marks]

QUESTION 2

Tonkatweende Plc is examining its capital structure with the intent of arriving at an optimaldebt ratio. It currently has no debt and has a beta of 1.6. Recently the company has been asubject of a takeover bid. The riskless interest rate is 7% and the equity risk premium is 5 %. According to the Company's Risk Management Policy, the company's debt ratio should not go beyond 40%. Your research indicates that the debt rating will be as follows at the different debt levels:

D/(D + E)	*Rating*	*Interest Rate*
0%	AAA	10%
10%	AA	10.5%
20%	A	11%
30%	BBB	12%
40%	BB	13%

The firm currently has 2 million shares outstanding at K10 per share. The company's marginal tax rate is 40%.

Required:

a. **What is the firm's optimal debt ratio? ((15 marks)**
b. **Advise the timing and options available to the firm to move to its optimal debt ratio. (5 marks)**

[Total marks 20]

SECTION B (60 Marks)

-answer any three questions-

QUESTION 3

a.) **Write short notes on the following:**

1. **Economic Value Added**
2. **Reinvestment Risk**
3. **Internal Rate of Return**
4. **Risk Averse**
5. **Credit risk**

(15 Marks)

b.) A small manufacturing firm, which has limited access to capital, has a capital rationing constraint of K150 million and is faced with the following investment projects (numbers in millions):

Project	*Initial Investment*	*NPV*
A	K25	K10
B	K30	K25
C	K40	K20
D	K10	K10
E	K15	K10
F	K60	K20
G	K20	K10
H	K25	K20

Required

Which of these projects would you accept? Why? (5 marks)

[Total 20 Marks]

QUESTION 4.

a. The figure below shows the output results of the regression of M Corporation's monthly returns against the Stock index returns for five years:

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.582730945							
R Square	0.339575354							
Adjusted R Square	0.335865103							
Standard Error	0.076904771							
Observations	180							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.541301791	0.541302	91.52356	9.34006E-18			
Residual	178	1.052753209	0.005914					
Total	179	1.594055						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.023011046	0.005842701	3.938426	0.000118	0.011481171	0.034540921	0.011481171	0.034540921
0.07	1.187812055	0.124159879	9.566795	9.34E-18	0.942797321	1.432826788	0.942797321	1.432826788

Required:

i. What is the intercept (alpha) and slope (beta) of the regression? (2 marks)

ii. If you bought stock in M Corp today, how much would you expect to make as a return over the next year? [The six-month T. Bill rate is 6%] (1mark)

iii. Looking back over the last five years, how would you evaluate M Corp's performance relative to the market? (The risk-free rate during the period was also 6% on an annual basis) (4 marks)

iv. Assume now that you are an undiversified investor and that you have all of your money invested in M Corporation. What would be a good measure of the risk that you are taking on? How much of this risk would you be able to eliminate if you diversify? (2 marks)

b. Explain factors that affect a firm's access to debt financing at each stage of the business life cycle (11 marks)

[Total 20 Marks]

QUESTION 5

(a) **Explain the significance of the assumption, at the heart of the financial theory, that investors are 'risk-averse'. (4 Marks)**

(b) **Explain briefly each of the three forms of market efficiency. (9 marks)**

(c) **Explain using examples the risks likely to be faced by a bond investor (7 marks)**

[Total 20 Marks]

QUESTION 6

You are analyzing the dividend policy of Mulobezi Ltd, a major agricultural trading company, and you have collected the following information from the past five years.

Year	Net Income (Million)	Capital Expenditure (Million)	Depreciation (Million)	Noncash Working Capital (Million)	Dividends (Million)
2015	K240	K314	K307	K35	K70
2016	K282	K466	K295	K(110)	K80
2017	K320	K566	K284	K215	K95
2018	K375	K490	K278	K175	K110
2019	K441	K494	K293	K250	K124

The average debt ratio during this period was 40 percent, and the total noncash working capital at the end of 2014 was K10 million.

Required:

a. **Estimate how much Mulobezi could have paid in dividends during this perio (5 marks)**

b. **If the average return on equity during the period was 13.5 percent, and Mulobezi had a beta of 1.25, what conclusions would you draw about their dividend policy? (The average Treasury bond rate during the period was 7 percent, and the average return on the market was 12.5 percent during the period.) (5 marks)**

c. **Explain the three schools of thought on dividend policy (10 marks)**

[Total 20 marks]

END OF EXAM

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

END OF SEMESTER EXAMINATION

COURSE: MAF5120 CORPORATE FINANCE

DATE: THURSDAY SEPTEMBER 23, 2021

VENUE: SPORTS HALL

TIME: 09:00 – 12:00 HOURS

INSTRUCTIONS:

1. This paper comprises two sections, A and B.
2. Section A: This section has three questions; you are **REQUIRED** to **ONLY ANSWER ONE QUESTION.** The one question to be answered carries **40 marks.** This means, Section A carries **40 marks.**
3. Sections B: Answer **THREE** questions from this section. Each question answered carries **20 marks.** Therefore, Section be carries **60 marks in total.**
4. This examination paper carries a total of **100 marks**.
5. Exam marks shall be awarded for orderly presentation of work.
6. Candidates must **not turn this page** until the invigilator tells them to do so.
7. This question paper has **three pages including the front page**
8. **You are required to religiously adhere to ALL the University of Zambia Examination Regulations and Guidelines during this examination.**

SECTION A – 40 MARKS: ANSWER ONLY ONE (1) QUESTION

1. Critically discuss the impact that Covid-19 has had on the key managerial financing decisions of corporate entities.

[40 Marks]

2. You can have a high degree of operating leverage (DOL) and still have low business risk. Why? By the same token, you can have a low DOL and still have high business risk. Why?
Please prepare your presentation

[40 Marks]

3. You Stallings Specialty Paint Company has fixed operating costs of $3 million a year. Variable operating costs are $1.75 per half pint of paint produced, and the average selling price is $2 per half pint.

    a. What is the annual operating break-even point in half pints (QBE)? In dollars of sales (SBE)?

    [8 marks]

    b. If variable operating costs decline to $1.68 per half pint, what would happen to the operating break-even point (QBE)?

    [8 marks]

    c. If fixed costs increase to $3.75 million per year, what would be the effect on the operating break-even point (QBE)?

    [8 marks]

    d. Compute the degree of operating leverage (DOL) at the current sales level of 16 million half pints.

    [8 marks]

    e. If sales are expected to increase by 15 percent from the current sales position of million half pints, what would be the resulting percentage change in operating profit (EBIT) from its current position?

    [8 marks]

[40 Marks]

SECTION B – 60 MARKS: ANSWER ANY THREE (3) QUESTIONS

4. Critically discuss the different methods of valuation and the benefits of business valuation?

[20 Marks]

OR

Enumerate the main objectives of corporate valuation and the main purposes of proper business valuation **[20 Marks]**

5. As the firm's financial manager, would you recommend to the board of directors that the firm adopt as policy a stable dividend payment per share or a stable dividend-payout ratio? What are the disadvantages of each? Would the firm's industry influence your decision? Why? **[20 Marks]**

6. Describe how capital budgeting, in an international environment, is similar to or dissimilar from that in a domestic environment. **[20 Marks]**

7. The Discuss the relationship between financial leverage and the cost of capital as originally set forth by Modigliani and Miller (M&M), and evaluate their arguments. **[20 Marks]**

8. Explain the key features of the three major discounted cash flow (DCF) methods of project evaluation and selection – internal rate of return (IRR), net present value (NPV), and profitability index (PI). **[20 Marks]**

9. Discuss the basic responsibilities of financial managers and the differences between a "treasurer" and a "controller." Discuss the goal of the firm and understand why shareholders' wealth maximization is preferred over other goals.

10. **[20 Marks]**

Define "capital budgeting" and identify the steps involved in the capital budgeting process, and explain the procedure used to generate long-term project proposals within the firm. **[20 Marks]**

OR

Describe the situations where ranking projects may be necessary and justify when to use either IRR, NPV, or PI rankings. **[20 Marks]**

END OF EXAM

BEST WISHES

THE UNIVERSITY OF ZAM BIA

GRADUATE SCHOOL OF BUSINESS

MSc ACCOUNTING AND FINANCE

MAY 2019 COHORT BLENDED/EVENING

SESSIONAL EXAMINATION

DATE: FRIDAY 18TH DECEMBER 2020

MAF 5122: INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT

EXAM TIME: 09:00 HOURS

VENUE: SPORTS HALL

DURATION: THREE (3) HOURS

INSTRUCTIONS:

1. The Paper has a Total Number of Six (6) Questions Comprising Sections A and B.
2. Answer a Total of FOUR (4) Questions.
3. Section A is *COMPULSORY.* From Section B Answer *ANY TWO (2)* Questions.
4. Marks Allocation Indicates the Depth of the Answer Expected.

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

SECTION A – COMPULSORY

QUESTION ONE

The following are the statements of account for Konkola Limited for a three year period.

Konkola Ltd Income Statement: Years Ended December 31, 2015, 2016 and 2017

	2017 K'000	2016 K'000	2015 K'000
Net sales	15,307	13,363	11,778
Cost of goods sold	11,140	9,682	8,514
Gross profit	4,167	3,681	3,264
Selling and administration expenses	3,332	2,973	2,660
Operating profit margin	835	708	604
Interest expense	42	2	3
Operating income before income taxes	793	706	601
Corporation taxes	282	270	229
Net income	**511**	**436**	**372**

Konkola Ltd Statement of Financial Position for the Years Ended December 31, 2015, 2016 and 2017.

	2017 K'000	K'000	2016 K'000	K'000	2015 K'000	K'000
ASSETS						
Nets fixed assets		2,144		1,754		1,448
Other non-current assets		135		127		166
		2,279		**1,881**		**1,614**
CURRENT ASSETS						
Cash	144		73		9	
Accounts receivables	373		376		288	
Inventory	2,027		1,733		1,632	
Other	79		144		90	
	2,623		**2,326**		**2,019**	
CURRENT LIABILITIES						
Accounts payables	907		813		692	
Accrued expenses	618		554		467	
Taxes payable	55		72		23	
		1,043		887		837
Long term liabilities		473		395		408
		2,849		**2,373**		**2,043**
FINANCED BY						
Equity capital		196		107		77
Reserves		2,653		2,266		1,966
		2,849		**2,373**		**2,043**

Required

Calculate the cash conversion cycles for Konkola Ltd for the years 2016 and 2017.

(25 Marks)

QUESTION TWO

A. Mwansa Bombwe Ltd is contemplating to invest in two assets A and B. The table below provides the return distribution of two assets involved.

State of economy	Probability that the state of economy occurs	Return if the state occurs Asset A	Return if the state occurs Asset B
BOOM	0.25	50%	70%
AVERAGE	0.50	40%	50%
BELOW AVERAGE	0.10	20%	10%
POOR	0.15	-10%	-20%

In addition to the above return distribution the two assets (A and B) operate in different industries and hence characterised by a market risk of 2 and 3 respectively. The market risk premium is 10% and the government treasury bills reward a return of 8% in the same economy.

Required:

(i) Calculate the expected returns for assets A and B respectively. **(9 Marks)**

(ii) Calculate the required rate of return for assets A and B respectively using the CAPM **(6 Marks)**

B. Mukuba group has a K12 million face value bond issue outstanding. The issue carries a coupon rate of 10% with interest paid quarterly. The issue matures in three (3) years. What is the values of the bond issue if it is priced to provide a yield to maturity of 12%? **(10 Marks)**

SECTION B

QUESTION THREE

A. You are given the following information regarding prices for a sample of stocks:

Stock	Number of Shares	PRICE T	PRICE T+1
A	1,000,000	60	80
B	10,000,000	20	35
C	30,000,000	18	25

Required

(a) Construct a price-weighted series for the three stocks, and compute the percentage change in the series for the period from T to T+1. **(5 Marks)**

(b) Construct a value-weighted series for the three stocks, and compute the percentage change in the series for the period from T to T+1. **(5 Marks)**

(c) Briefly discuss the difference in the observed results for the two series. **(2 Marks)**

B.

	December 31, 2017		December 31, 2018	
	Price	Shares Outstanding	Price	Shares Outstanding
Stock K	20	100,000,000	32	100,000,000
Stock M	80	2,000,000	45	4,000,000*
Stock R	40	25,000,000	42	25,000,000

***Stock split two-for-one during the year**

Required

Based on the above information on stock price and shares outstanding;

(a) Compute the beginning and ending values of a price-weighted index. **(4 Marks)**

(b) Compute the beginning and ending values of a market-value-weighted index. **(4 Marks)**

(c) Compute the percentage change in the value of the price-weighted index. **(2 Marks)**

(d) Compute the percentage change in the value of the market-value- weighted index. **(3 Marks)**

QUESTION FOUR

A. Shengo Kaweche had bought shares in Guild Limited a company listed at Lusaka Securities Exchange and Soweto Inc. a Johannesburg Stock Exchange listed company. The following data shows the returns earnings of the two companies over a period of five (5) years.

YEAR	GUILD LIMITED	SOWETO INC.
	%	%
1	5	7
2	8	6
3	8	9
4	10	11
5	13	12

Required

Calculate the covariance and the correlation coefficient and interpret the two statistics in relation to the two investments **(13 Marks)**

B. Discuss the role of Primary Capital Markets and briefly explain the Private Placement, Negotiated Transactions, Competitive Bidding and Rights Issues as methods used in the primary market to issue securities. **(12 Marks)**

QUESTION FIVE

A. Kunda and Sitwala Company is considering manufacturing special drill bits and other equipment for mining rigs. The proposed project is currently regarded as complementary to its other lines of business, and the company has certain expertise by virtue of its having a large mechanical engineering staff. Because of the large outlays required to get into the business, management is concerned that Kunda and Sitwala earn a proper return. Since the new venture is believed to be sufficiently different from the company's existing operations, management feels that a required rate of return other than the company's present one should be employed.

The financial manager's staff has identified several companies (with capital structures similar to that of Kunda and Sitwala) engaged solely in the manufacture and sale of mining drilling equipment whose common stocks are publicly traded. Over the last five years, the median average beta of these companies has been 1.28. The staff believes that 18 percent is a reasonable estimate of the average return on stocks "in general" for the foreseeable future and the treasury bills rate will be around 12 percent. In financing projects, Kunda and Sitwala uses 40 percent debt and 60 percent equity. The after-tax cost of debt is 18 percent and corporate tax is 35 percent.

Required

a) Compute the required rate of return for the project **(7 Marks)**

b) Compute the weighted average cost of capital for the project **(8 Marks)**

B. Outline the concept of Capital Asset Pricing Model (CAPM) and explain the meaning of Beta (β) in relation to investments. **(5 Marks)**

C. Explain the implications of systematic and unsystematic risk for investment. **(5 Marks)**

QUESTION SIX

A. Discuss in detail the following types of investment companies.

1. Money market funds **(5 Marks)**
2. Bond funds **(5 Marks)**
3. Common stock funds **(5 Marks)**
4. Balanced funds **(5 Marks)**

B. Explain what futures contracts are and discuss their characteristics. **(5 Marks)**

END OF EXAMINATION PAPER

Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where r = discount rate

n = number of periods until payment

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	0·980	0·961	0·943	0·925	0·907	0·890	0·873	0·857	0·842	0·826	2
3	0·971	0·942	0·915	0·889	0·864	0·840	0·816	0·794	0·772	0·751	3
4	0·961	0·924	0·888	0·855	0·823	0·792	0·763	0·735	0·708	0·683	4
5	0·951	0·906	0·863	0·822	0·784	0·747	0·713	0·681	0·650	0·621	5
6	0·942	0·888	0·837	0·790	0·746	0·705	0·666	0·630	0·596	0·564	6
7	0·933	0·871	0·813	0·760	0·711	0·665	0·623	0·583	0·547	0·513	7
8	0·923	0·853	0·789	0·731	0·677	0·627	0·582	0·540	0·502	0·467	8
9	0·941	0·837	0·766	0·703	0·645	0·592	0·544	0·500	0·460	0·424	9
10	0·905	0·820	0·744	0·676	0·614	0·558	0·508	0·463	0·422	0·386	10
11	0·896	0·804	0·722	0·650	0·585	0·527	0·475	0·429	0·388	0·305	11
12	0·887	0·788	0·701	0·625	0·557	0·497	0·444	0·397	0·356	0·319	12
13	0·879	0·773	0·681	0·601	0·530	0·469	0·415	0·368	0·326	0·290	13
14	0·870	0·758	0·661	0·577	0·505	0·442	0·388	0·340	0·299	0·263	14
15	0·861	0·743	0·642	0·555	0·481	0·417	0·362	0·315	0·275	0·239	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	0·812	0·797	0·783	0·769	0·756	0·743	0·731	0·718	0·706	0·694	2
3	0·731	0·712	0·693	0·675	0·658	0·641	0·624	0·609	0·593	0·579	3
4	0·659	0·636	0·613	0·592	0·572	0·552	0·534	0·516	0·499	0·482	4
5	0·593	0·567	0·543	0·519	0·497	0·476	0·456	0·437	0·419	0·402	5
6	0·535	0·507	0·480	0·456	0·432	0·410	0·390	0·370	0·352	0·335	6
7	0·482	0·452	0·425	0·400	0·376	0·354	0·333	0·314	0·296	0·279	7
8	0·434	0·404	0·376	0·351	0·327	0·305	0·285	0·266	0·249	0·233	8
9	0·391	0·361	0·333	0·308	0·284	0·263	0·243	0·225	0·209	0·194	9
10	0·352	0·322	0·295	0·270	0·247	0·227	0·208	0·191	0·176	0·162	10
11	0·317	0·287	0·261	0·237	0·215	0·195	0·178	0·162	0·148	0·135	11
12	0·286	0·257	0·231	0·208	0·187	0·168	0·152	0·137	0·124	0·112	12
13	0·258	0·229	0·204	0·182	0·163	0·145	0·130	0·116	0·104	0·093	13
14	0·232	0·205	0·181	0·160	0·141	0·125	0·111	0·099	0·088	0·078	14
15	0·209	0·183	0·160	0·140	0·123	0·108	0·095	0·084	0·074	0·065	15

Annuity Table

Present value of an annuity of 1 i.e. $\frac{1-(1+r)^{n}}{r}$

Where r = discount rate
n = number of periods

Discount rate (r)

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2	1·970	1·942	1·913	1·886	1·859	1·833	1·808	1·783	1·759	1·736	2
3	2·941	2·884	2·829	2·775	2·723	2·673	2·624	2·577	2·531	2·487	3
4	3·902	3·808	3·717	3·630	3·546	3·465	3·387	3·312	3·240	3·170	4
5	4·853	4·713	4·580	4·452	4·329	4·212	4·100	3·993	3·890	3·791	5
6	5·795	5·601	5·417	5·242	5·076	4·917	4·767	4·623	4·486	4·355	6
7	6·728	6·472	6·230	6·002	5·786	5·582	5·389	5·206	5·033	4·868	7
8	7·652	7·325	7·020	6·733	6·463	6·210	5·971	5·747	5·535	5·335	8
9	8·566	8·162	7·786	7·435	7·108	6·802	6·515	6·247	5·995	5·759	9
10	9·471	8·983	8·530	8·111	7·722	7·360	7·024	6·710	6·418	6·145	10
11	10·37	9·787	9·253	8·760	8·306	7·887	7·499	7·139	6·805	6·495	11
12	11·26	10·58	9·954	9·385	8·863	8·384	7·943	7·536	7·161	6·814	12
13	12·13	11·35	10·63	9·986	9·394	8·853	8·358	7·904	7·487	7·103	13
14	13·00	12·11	11·30	10·56	9·899	9·295	8·745	8·244	7·786	7·367	14
15	13·87	12·85	11·94	11·12	10·38	9·712	9·108	8·559	8·061	7·606	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	1·713	1·690	1·668	1·647	1·626	1·605	1·585	1·566	1·547	1·528	2
3	2·444	2·402	2·361	2·322	2·283	2·246	2·210	2·174	2·140	2·106	3
4	3·102	3·037	2·974	2·914	2·855	2·798	2·743	2·690	2·639	2·589	4
5	3·696	3·605	3·517	3·433	3·352	3·274	3·199	3·127	3·058	2·991	5
6	4·231	4·111	3·998	3·889	3·784	3·685	3·589	3·498	3·410	3·326	6
7	4·712	4·564	4·423	4·288	4·160	4·039	3·922	3·812	3·706	3·605	7
8	5·146	4·968	4·799	4·639	4·487	4·344	4·207	4·078	3·954	3·837	8
9	5·537	5·328	5·132	4·946	4·772	4·607	4·451	4·303	4·163	4·031	9
10	5·889	5·650	5·426	5·216	5·019	4·833	4·659	4·494	4·339	4·192	10
11	6·207	5·938	5·687	5·453	5·234	5·029	4·836	4·656	4·486	4·327	11
12	6·492	6·194	5·918	5·660	5·421	5·197	4·988	4·793	4·611	4·439	12
13	6·750	6·424	6·122	5·842	5·583	5·342	5·118	4·910	4·715	4·533	13
14	6·982	6·628	6·302	6·002	5·724	5·468	5·229	5·008	4·802	4·611	14
15	7·191	6·811	6·462	6·142	5·847	5·575	5·324	5·092	4·876	4·675	15

THE UNIVERSITY OF ZAM BIA
GRADUATE SCHOOL OF BUSINESS

MSc ACCOUNTING AND FINANCE

MAY 2020 COHORT BLENDED/EVENING

SESSIONAL EXAMINATION

DATE: 17TH SEPTEMBER, 2021

MAF 5122: INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT

EXAM TIME: 09:00 HOURS

DURATION: THREE (3) HOURS

INSTRUCTIONS:

1. **The Paper has a Total Number of Six (6) Questions.**
2. **Answer a Total of FOUR (4) Questions.**
3. **Section A is Compulsory. From Section B Attempt ANY TWO (2) Questions.**
4. **Marks Allocation Indicates the Depth of the Answer Expected.**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

SECTION A – COMPULSORY

QUESTION ONE

The following are the statements of account for Konkola Limited for a three year period.

Konkola Ltd Income Statement: Years Ended December 31, 2018, 2019 and 2020

	2020 K'000	2019 K'000	2018 K'000
Net sales	15,307	13,363	11,778
Cost of goods sold	11,140	9,682	8,514
Gross profit	4,167	3,681	3,264
Selling and administration expenses	3,332	2,973	2,660
Operating profit margin	835	708	604
Interest expense	42	2	3
Operating income before income taxes	793	706	601
Corporation taxes	282	270	229
Net income	**511**	**436**	**372**

Konkola Ltd Statement of Financial Position for the Years Ended December 31, 2018, 2019 and 2020.

	2020		2019		2018	
	K'000	K'000	K'000	K'000	K'000	K'000
ASSETS						
Nets fixed assets		2,144		1,754		1,448
Other non-current assets		135		127		166
		2,279		**1,881**		**1,614**
CURRENT ASSETS						
Cash	144		73		9	
Accounts receivables	373		376		288	
Inventory	2,027		1,733		1,632	
Other	79		144		90	
	2,623		**2,326**		**2,019**	
CURRENT LIABILITIES						
Accounts payables	907		813		692	
Accrued expenses	618		554		467	
Taxes payable	55		72		23	
		1,043		887		837
Long term liabilities		473		395		408
		2,849		**2,373**		**2,043**
FINANCED BY						
Equity capital		196		107		77
Reserves		2,653		2,266		1,966
		2,849		**2,373**		**2,043**

Required

Calculate the cash conversion cycles for Konkola Ltd for the years 2016 and 2017.

(25 Marks)

QUESTION TWO

A. You are given the following information regarding prices for a sample of stocks:

		PRICE	
Stock	**Number of Shares**	**T**	**T+1**
A	1,000,000	60	80
B	10,000,000	20	35
C	30,000,000	18	25

Required

(a) Construct a price-weighted series for the three stocks, and compute the percentage change in the series for the period from T to T+1. **(5 Marks)**

(b) Construct a value-weighted series for the three stocks, and compute the percentage change in the series for the period from T to T+1. **(5 Marks)**

(c) Briefly discuss the difference in the observed results for the two series. **(2 Marks)**

B.

	December 31, 2017		**December 31, 2018**	
	Price	**Shares Outstanding**	**Price**	**Shares Outstanding**
Stock K	20	100,000,000	32	100,000,000
Stock M	80	2,000,000	45	4,000,000*
Stock R	40	25,000,000	42	25,000,000

***Stock split two-for-one during the year**

Required

Based on the above information on stock price and shares outstanding;

(a) Compute the beginning and ending values of a price-weighted index. **(4 Marks)**

(b) Compute the beginning and ending values of a market-value-weighted index. **(4 Marks)**

(c) Compute the percentage change in the value of the price-weighted index. **(2 Marks)**

(d) Compute the percentage change in the value of the market-value- weighted index. **(3 Marks)**

SECTION B – ATTEMPT ANY TWO QUESTIONS

QUESTION THREE

A. Nampundwe Mining Company has just paid a dividend of K1.60 per share on its common stock. The company expects to increase the dividend at a 20 percent annual rate for the first four (4) years and at a 13 percent rate for the next four (4) years, and then grow the dividend at a 7 percent rate thereafter. This growth pattern is in keeping with the expected life cycle of earnings. You require a 16 percent return to invest in this stock.

Required

Calculate the value you should place on a share of this stock. **(17 Marks)**

B. On January 2014 Mr Kalaluka Mwansa invested in 1000 shares worth K16 and held on to the investment for twenty (20) months. The annual dividends per share were K2 in 2013 and were expected to grow in value by 10 percent per annum for the next three (3) years and 5 percent per annum thereafter.

Required

Compute the Annual Holding Period Yield (AHPY) for Mr Kalaluka Mwansa. **(8 Marks)**

QUESTION FOUR

A. The entity has the following information in its statement of financial position.

	K'000
Ordinary shares of K0.50	2,500
12% unsecured bonds	1,000

The ordinary shares are currently quoted at K1.30 each and the bonds are trading at K72 per K100 nominal. The ordinary dividend of K0.15 has just been paid with an expected growth rate of 10%. Corporation tax is currently 30%.

Required

Calculate the weighted average cost of capital for this entity. **(10 Marks)**

B. The beta (β) on common stock shares of Mwiindi PPE Ltd is 1.60. The shares are currently trading at K14.75 and paid a dividend of K0.72 per share last year, a figure that is expected to grow by 3 percent annually for the foreseeable future. Calculate the price you expect the shares of Mwiindi PPE Ltd to be trading at in one year's time, if the risk-free rate of return is 13.5 percent and market price of risk is 5.5 percent. **(15 Marks)**

QUESTION FIVE

Describe the role played by each of the institution below in promoting investment in Zambia, and explain the kind of information they provide to potential and existing investors.

A. Zambia Development Agency (ZDA) **(7 Marks)**

B. Investment Centre (IC) **(6 Marks)**

C. Securities Exchange Commission (SEC) **(6 Marks)**

D. Lusaka Securities Exchange (LuSE) **(6 Marks)**

QUESTION SIX

A. The line that reflects the combination of risk and return available on various alternative investments in the market is called the Security Market Line (SML). It is also observed that investors usually increase their required rate of return as perceived risk increases. With the help of diagrams describe the relationship between risk and return in relation to movements along the SML, change in slope of the SML and shift in the SML. **(13 Marks)**

B. Concisely discuss the three (3) basic principles of the Dow Theory;

a) The averages discount everything **(4 Marks)**

b) The market exhibits three trends. The primary, secondary and minor trends. **(4 Marks)**

c) The major trends moves in three phases **(4 Marks)**

END OF EXAMINATION PAPER

Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where: r = discount rate
n = number of periods until payment

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	Periods (n)
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	0·980	0·961	0·943	0·925	0·907	0·890	0·873	0·857	0·842	0·826	2
3	0·971	0·942	0·915	0·889	0·864	0·840	0·816	0·794	0·772	0·751	3
4	0·961	0·924	0·888	0·855	0·823	0·792	0·763	0·735	0·708	0·683	4
5	0·951	0·906	0·863	0·822	0·784	0·747	0·713	0·681	0·650	0·621	5
6	0·942	0·888	0·837	0·790	0·746	0·705	0·666	0·630	0·596	0·564	6
7	0·933	0·871	0·813	0·760	0·711	0·665	0·623	0·583	0·547	0·513	7
8	0·923	0·853	0·789	0·731	0·677	0·627	0·582	0·540	0·502	0·467	8
9	0·941	0·837	0·766	0·703	0·645	0·592	0·544	0·500	0·460	0·424	9
10	0·905	0·820	0·744	0·676	0·614	0·558	0·508	0·463	0·422	0·386	10
11	0·896	0·804	0·722	0·650	0·585	0·527	0·475	0·429	0·388	0·305	11
12	0·887	0·788	0·701	0·625	0·557	0·497	0·444	0·397	0·356	0·319	12
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(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	(n)
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	0·812	0·797	0·783	0·769	0·756	0·743	0·731	0·718	0·706	0·694	2
3	0·731	0·712	0·693	0·675	0·658	0·641	0·624	0·609	0·593	0·579	3
4	0·659	0·636	0·613	0·592	0·572	0·552	0·534	0·516	0·499	0·482	4
5	0·593	0·567	0·543	0·519	0·497	0·476	0·456	0·437	0·419	0·402	5
6	0·535	0·507	0·480	0·456	0·432	0·410	0·390	0·370	0·352	0·335	6
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11	0·317	0·287	0·261	0·237	0·215	0·195	0·178	0·162	0·148	0·135	11
12	0·286	0·257	0·231	0·208	0·187	0·168	0·152	0·137	0·124	0·112	12
13	0·258	0·229	0·204	0·182	0·163	0·145	0·130	0·116	0·104	0·093	13
14	0·232	0·205	0·181	0·160	0·141	0·125	0·111	0·099	0·088	0·078	14
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6	5·795	5·601	5·417	5·242	5·076	4·917	4·767	4·623	4·486	4·355	6
7	6·728	6·472	6·230	6·002	5·786	5·582	5·389	5·206	5·033	4·868	7
8	7·652	7·325	7·020	6·733	6·463	6·210	5·971	5·747	5·535	5·335	8
9	8·566	8·162	7·786	7·435	7·108	6·802	6·515	6·247	5·995	5·759	9
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11	10·37	9·787	9·253	8·760	8·306	7·887	7·499	7·139	6·805	6·495	11
12	11·26	10·58	9·954	9·385	8·863	8·384	7·943	7·536	7·161	6·814	12
13	12·13	11·35	10·63	9·986	9·394	8·853	8·358	7·904	7·487	7·103	13
14	13·00	12·11	11·30	10·56	9·899	9·295	8·745	8·244	7·786	7·367	14
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4	3·102	3·037	2·974	2·914	2·855	2·798	2·743	2·690	2·639	2·589	4
5	3·696	3·605	3·517	3·433	3·352	3·274	3·199	3·127	3·058	2·991	5
6	4·231	4·111	3·998	3·889	3·784	3·685	3·589	3·498	3·410	3·326	6
7	4·712	4·564	4·423	4·288	4·160	4·039	3·922	3·812	3·706	3·605	7
8	5·146	4·968	4·799	4·639	4·487	4·344	4·207	4·078	3·954	3·837	8
9	5·537	5·328	5·132	4·946	4·772	4·607	4·451	4·303	4·163	4·031	9
10	5·889	5·650	5·426	5·216	5·019	4·833	4·659	4·494	4·339	4·192	10
11	6·207	5·938	5·687	5·453	5·234	5·029	4·836	4·656	4·486	4·327	11
12	6·492	6·194	5·918	5·660	5·421	5·197	4·988	4·793	4·611	4·439	12
13	6·750	6·424	6·122	5·842	5·583	5·342	5·118	4·910	4·715	4·533	13
14	6·982	6·628	6·302	6·002	5·724	5·468	5·229	5·008	4·802	4·611	14
15	7·191	6·811	6·462	6·142	5·847	5·575	5·324	5·092	4·876	4·675	15

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MSc Accounting & Finance Sessional Examination

Monday 7th September, 2019

MAF 6011: CRITICAL PERSPECTIVES IN ACCOUNTING

Instructions

Time Allowed: **3 hours**

There are six (6) Questions in the Examination Paper

Attempt a total of five (5) questions

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

QUESTION 1

a) Discuss FIVE (5) factors affecting measurement process. *(10 marks)*

b) Briefly explain the following terminologies

i. Accounting policy vs Accounting choice
ii. Beneish M-Score Model
iii. Direct vs Indirect Measurements
iv. Value vs. Price
v. Professional vs. Regulatory body

(10 marks)

[Total 20 Marks]

QUESTION 2

a) Accounting theory can be defined as the basic assumptions, definitions, principles, and concepts—and how we derive them—that underlie accounting rule making by a legislative body. Discuss whether this statement meet the definition of a theory. (8 marks)

b) Political factors are an adverse influence upon the accounting standard-setting function. Discuss this statement. (7 marks)

c) One of the three elements of business valuation is Normalization of Financial Statements: Explain the meaning of the term normalization of financial statements. (5 marks)

[Total: 20marks]

QUESTION 3

a) The story of Enron Corp. is the story of a company that reached dramatic heights, only to face a dizzying fall. Its collapse affected thousands of employees and shook Wall Street to its core. At Enron's peak, its shares were worth $90.75; when it declared bankruptcy on December 2, 2001, they were trading at $0.26. To this day, many wonder how such a powerful business, at the time one of the largest companies in the U.S, disintegrated almost overnight and how it managed to fool the regulators with fake holdings and off-the-books accounting for so long. As a consequence of the scandal, new regulations and legislation were enacted to expand the accuracy of financial reporting for publi

companies. One piece of legislation, the Sarbanes–Oxley Act, increased penalties for destroying, altering, or fabricating records in federal investigations or for attempting to defraud shareholders.

Do you think that changes brought about by accounting standards by failures of publicly traded companies such as ENRON should be classified under political factors or economic decisions? Support your position. (12 marks)

b) Discuss the consequences of low financial reporting quality. (8 marks)

[Total: 20marks]

QUESTION 4

a) Before the value of a business can be measured, the valuation assignment must specify the reason for and circumstances surrounding the business valuation. Explain these reasons and circumstances surrounding the business valuation. *(10 marks)*

b) Do you think that changes brought about by accounting standards by failures of publicly traded companies such as ENRON should be classified under political factors or economic decisions? Support your position. *(10 marks)*

QUESTION FIVE

a) Accounting practitioners have criticized some proposed accounting standards on the grounds that they are difficult to implement because of measurement problems. They, therefore, conclude that the underlying theory is inappropriate. Assuming that the critics are correct about the implementational difficulties, discuss whether or not you agree with their thinking. (6 marks)

b) Using the capture theory and life cycle theory, provide a brief critique on laws and actors involved in the regulation of accounting in Zambia. (10 marks)

c) Explain the relationship between accounting information and valuation. (4 marks)

[Total: 20marks]

QUESTION SIX

a) In the last decade and half, we have witnessed the worst corporate accounting standard scandals such ENRON, WorldCom, TYCO e.t.c. Using theories and/or concepts, discuss the incentives for managers to manipulate accounting figures. (8 marks)

b) Accounting rule making should only be concerned with information for investors and creditors. Discuss this statement. (6 marks)

c) There are main two accounting research perspectives which are qualitative research and quantitative research. With examples and adequate references from critical accounting literature, discuss their differences. (6 marks)

[Total: 20marks]

END OF PAPER

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MSc Accounting & Finance Sessional Examination

Monday 7th December 2020

MAF 6011: CRITICAL PERSPECTIVES IN ACCOUNTING

Instructions

Time Allowed: **3 hours**

There are six (6) Questions in the Examination Paper

Attempt a total of five (5) questions

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

QUESTION 1

a) "Throughout society, the influence of accounting permeates fundamental issues concerning wealth distribution, social justice, political ideology and environmental degradation. Contrary to public opinion, accounting is not a static reflection of economic reality, but rather is a highly partisan activity". Discuss whether you agree with this statement. *(14 marks)*

b) Provide a brief discussion on the following theories as they are used in accounting theory

i. Capture Theory
ii. Life Cycle Theory

(6 marks)

[Total: 20 Marks

QUESTION 2

a) Accounting theory can be defined as the basic assumptions, definitions, principles, and concepts—an how we derive them—that underlie accounting rule making by a legislative body. Discuss whether thi statement meet the definition of a theory. *(10 marks)*

b) Political factors are an adverse influence upon the accounting standard-setting function. Discuss thi statement. *(10 marks)*

[Total: 20 Marks

QUESTION 3

a) The debate on whether financial accounting should be regulated or not has been there for number of years. By providing concrete arguments and using theaories show which side do yo support. *(10 marks)*

b) Using theories and/or concepts, discuss the incentives for managers to manipulate accountin figures. *(10 marks)*

[Total 20 Marks]

QUESTION 4

a) Explain the difference between financial reporting quality and earnings quality. *(4 marks)*

b) State four (4) potential problems that affect financial reporting quality. *(4 marks)*

c) The literature which critics conventional accounting draws on various perspectives including:

- Marxist/ critical accounting

- Feminist critiques
- Public interest arguments
- Social and environmental accounting

Discuss how these perspectives critique the conventional accounting. *(12 marks)*

[Total: 20 Marks

QUESTION 5

a) Discuss FIVE (5) factors affecting measurement process. *(10 marks)*

b) Briefly explain the following terminologies

i. Accounting policy vs Accounting choice
ii. Beneish M-Score Model
iii. Direct vs Indirect Measurements
iv. Value vs. Price
v. Professional vs. Regulatory body

(10 marks)

[Total 20 Marks

QUESTION 6

a) There are main two accounting research perspectives which are qualitative research and quantitativ research. With examples and adequate references from critical accounting literature, discuss thei differences. *(8 marks)*

b) One of the three elements of business valuation is Normalization of Financial Statements: Explai briefly the meaning of the term normalization of financial statements. *(6 marks)*

c) Explain the Positive Accounting Theory (PAT) as developed by Watts and Zimmerman (1978). *(6 marks)*

[Total 20 Marks

END OF PAPER

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

PUBLIC FINANCIAL MANAGEMENT (MAF6111)

09:00 – 12:00 HOURS

TIME ALLOWED: 3 HOURS PLUS 5 MINUTES READING TIME

INSTRUCTIONS TO CANDIDATES

1. Check that you have the correct examination paper in front of you
2. There are FIVE questions and TWO sections in this examination paper. Answer FOUR questions in total; Answer ALL questions in Section A and Answer ANY TWO in Section B.
3. All answers should be in an answer booklet given to you.
4. Write down the number of questions attempted on the cover page.
5. Begin each question on a new page.
6. There shall be no form of any communication between students during the examination. Any attempt to make such will lead to disqualification.

DO NOT TURN THIS PAGE UNTIL TOLD TO DO SO BY THE INVIGILATOR

SECTION A [60 MARKS]

SECTION A

QUESTION ONE

(a) Allocation of resources in terms of the different components of public expenditure reflects how a government hopes to fulfill its aspirations. Discuss the different components of public expenditure and explain in what ways these reflect how a government can fulfill its developmental ambitions.

(10 Marks)

(b) Discuss what constitutes the public sector and how this might influence development policy in practice in terms of the role of the state in development.

(15 Marks)

[TOTAL: 25 MARKS]

QUESTION TWO

With the aid of a diagram in each case, show how each of the following leads to an inefficient allocation:

i) Negative Production Externality

ii) Positive Consumption Externality

[TOTAL: 25 MARKS]

SECTION B

QUESTION THREE

In the K173 billion 2022 National Budget, the Government of the Republic of Zambia has allocated about 45.5% to debt repayment. In general, what are the internal causes for the debt crisis and what are the likely consequences of public debt.

[TOTAL: 25 MARKS]

QUESTION FOUR

For the Government of the Republic of Zambia, domestic revenue collection from taxes for 2022 is poised to be K77.9 billion. Discuss from a vertical and horizontal equity perspective how the Government can achieve this target.

[TOTAL: 25 MARKS]

QUESTION FIVE

By firstly giving a detailed exposition of each of the following, discuss in what ways they give a contrasting account of the conceptual and theoretical basis for growth in public expenditure.

i) Wagner's Law

ii) Peacock and Wiseman Hypothesis

[TOTAL: 25 MARKS]

--- THE END ---

Graduate School of Business Examinations

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Masters Sessional Examination

Wednesday 15th September 2021

INTERNATIONAL BUSINESS FINANCE

MAF 6182

Instructions

Time Allowed: **3 hours**

There are five (5) Questions in the Examination Paper

Attempt a total of four (4) questions

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Graduate School of Business Examinations

QUESTION 1

(a) Describe International business finance **(4 marks)**

(b) Explain the main differences between domestic and international business finance **(8 marks)**

(c) Explain the role of economic globalization in international business **(5 marks)**

(d) Explain the main trends that have escalated economic globalization **(8 marks)**

(Total 25 marks)

QUESTION 2

(a) Briefly explain balance of payment **(4 marks)**

(b) Briefly explain balance of payment accounting **(7 marks)**

(c) Kindly explain the main types of balance of payment accounts **(8 marks)**

(d) Explain the balance of payment account trends for the USA, Japan and Zambia **(6 marks)**

(Total 25 Marks)

Question 3

(a) Explain foreign exchange risk management (5 marks)

(b) Briefly explain foreign exchange economic exposure (6 marks)

(c) Briefly explain how one can measure foreign exchange economic exposure (4 marks)

(d) Explain the main methods for hedging foreign exchange economic exposure (10 marks)

(Total 25 Marks)

QUESTION 4

(a) Explain corporate governance in international business (4 marks)

(b) Explain the main reason why corporate governance is important especially in international business finance (7 marks)

(c) Describe the main types of corporate governance systems around the world (8 marks)

(d) Explain one of the most infamous corporate governance scandals (6 marks)

(Total 25 Marks)

QUESTION 5

Suppose S(ZMW/USD) = k16 and S(RUR/USD) = R70. 1 year interest rates in Zambia, USA and Russia are 30%, 10% and 20% respectively.

(a) Calculate F360(ZMW/USD) **(5 marks)**

(b) Calculate S(RUR/ZMW) **(5 marks)**

(c) Using the relative PPP formula calculate F360(RUR/ZMW) **(5 marks)**

(d) Suppose a trader can borrow $2,000,000 in the USA and lend it in Zambia, how much profit or loss will the trader make if F360(ZMW/USD) = K16.7 **(10 marks)**

(Total 25 Marks)

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA/MSc Sessional Examination

Wednesday 15th September 2021

MAF6211 – RISK MANAGEMENT

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Special Requirements: - A non-programmable scientific calculator

Instructions to candidates

1. Answer Question ANY FOUR questions
2. Start the answer to each full question on a fresh page of the answer booklet.
3. Questions may be written in any order, but must be legibly numbered.
4. Write neatly and legibly

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question One

A risk assessment is a process to identify potential hazards and analyze what could happen if a hazard occurs. A business impact analysis (BIA) is the process for determining the potential impacts resulting from the interruption of time sensitive or critical business processes.
There are numerous hazards to consider. For each hazard there are many possible scenarios that could unfold depending on timing, magnitude and location of the hazard
Source: https://www.ready.gov/risk-assessment
The newly established Ministry of Small and Medium Enterprises has requested you to develop tailored sample risk assessment charts for SMEs risk management.

The key headings for the chart include

(1) Asset or Operation at Risk	(2) Hazard	(3) Scenario (Location, Timing, Magnitude	(4) Opportunities for prevention or mitigation	(5) Probability (L,M,H)	Impact with existing mitigation (L, M, H)					(11) Overall Hazard Rating
					(6) people	(7) Property	(8) Operations	(9) Environment	(10) Entity	

Required: choose any SME business segment and prepare a risk assessment table for the top eight assets or operations at risk. Your responses should be closer to the practical Zambia environment. [24 marks]

(ii) Describe the possible insurance mechanisms for any three of the above risks. [10 marks]

(iii) Outline how stress testing is used in risk assessment. [10 marks]

(iv) Draft a risk policy for any of the major risks faced by the SME above. [5 marks]

Question Two [Total 25 Marks]

(a) Choose any one specific international conglomerate from the MANUFACTURING SECTOR.

(i) Describe the best risk management standard/framework for adoption by the firm and clearly outline the importance of actively managing its portfolio of risks. . [16 marks]

(ii) Suggest a supplementary second risk management standard/framework that could bring about completeness if adopted together with the preferred framework above and show the gaps that it would address. [9 marks]

Question Three **[Total 25 Marks]**

Risk Governance: Appetite, Culture and the Limits of Limits

Michael Alex presented some observations on the continuing evolution in risk governance, and the importance of strong risk appetite statements supported by strong risk cultures and also raised some caution on the use of risk limits.

If risk app statements are to resonate with individuals throughout an organization, they must contain both qualitative and quantitative features, and promote holistic rather than siloed evaluation of risks. A risk appetite statement that features a clear and positive statement about acceptable risks can guide actions throughout an organization. It should be efficiently well understood from top to bottom of an organization, so that directors, C-suite management, risk managers and line risk takers are "on the same page." A clear and compelling risk appetite statement can be described in an elevator ride.

The best risk appetite frameworks will be ineffective if not supported by the right risk culture. By culture, I mean the shared attitudes and behaviours of risk takers and risk managers (and for that matter, really all employees) responsible for the analysis, decision-making, and reporting necessary to effectively adhere to risk appetite and support the organization's strategic mission.

https://www.newyorkfed.org/newsevents/speeches/2012/alix121114.html

Required:
With reference to the mining industry or financial services industry, how would you judge the nature, implementation and interactions of the four aspects of risk management highlighted above. [25 Marks]

Question Four

Zambezi Source Hotels Ltd was founded in 20XX by Mr EJM, a very energetic entrepreneur. Currently, Zambezi Source has grown to be a significant player in the Hotel and Leisure sector. The company was hit hard by the Covid-19 pandemic.

Required:

(a) Mr EJM has hired you to present him with the latest "practise" in business continuity management process that could help the company to be better prepared for the next crisis. [16 Marks]

(b) Recommend, with reasons, the two most appropriate risk financing methods for a typical Hotel and Leisure group in the aftermath of the Covid-19 pandemic. [9 marks]

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THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA Finance Sessional Examination
Wednesday 1st July 2020

MBF5152: PORTFOLIO MANAGEMENT AND WEALTH PLANNING

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Special Requirements: - A non-programmable scientific calculator

Instructions to candidates

1. This Question Paper consists of FOUR Questions
2. Answer Question ONE and Choose ANY WO other questions
3. Start the answer to each full question on a fresh page of the answer booklet.
4. Questions may be written in any order, but must be legibly numbered.
5. Write neatly and legibly, showing ALL your workings were necessary

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question One **[Total 50 Marks] - COMPULSORY**

(a) Consider yourself a speaker at the inaugural UNZA Wealth Planning Summit (UWPS) and you are to make presentations on the following topics guided by the given outline.

(i) Topic A: FINANCIAL INTELLIGENCE FOR YOUNG ADULTS

- Pay Yourself First – 10%.
- You Need An Emergency Fund
- Know The Difference Between A Want And A Need
- Make A Budget And Stick To It
- Open A Compound Interest Retirement Savings Account That Allows You To Withdraw Your Money Tax-Free
- Think About Retirement. [18 Marks]

(ii) Topic B: COMMON RETIREMENT PLANNING SCENARIOS

- No Retirement Income Strategy But With Many Physical Assets
- Unplanned Care Expenses Eating Away at Retirement Assets
- Paying Too Much in Retirement Plan Expenses Resulting in Deficits
- An Outdated Estate Plan e.g. after life-changing events (birth of child/grandchild, divorce, marriage, etc...). [13 marks]

(b) You are given the following two assets on a stock exchange:

State	Probability	Returns (%)	
		Asset A	Asset B
1	0.15	19	26
2	0.25	22	15
3	0.20	27	24
4	0.40	31	12

(i) Given the above data, determine the global minimum variance portfolio for the two assets and calculate its expected return and variance. [14 marks]

You are given that optimal weight for asset A is : $w_{\min(A)} = \frac{Var_B - Cov_{(A,B)}}{Var_A + Var_B - 2Cov_{(A,B)}}$

(ii) Without making any calculations, explain the effect of a risk aversion coefficient of 5 and the inclusion of a risk-free asset to the composition of the ultimate invested portfolio. [5 marks]

Question Two **[Total 25 Marks]**

(a)
Following the financial crisis in 2008 a number of economists were interviewed and claimed that they had been expecting something like the crisis to occur; however, there was no record of them having expressed this opinion before the crisis.

(i) Describe the behaviour these economists were demonstrating. [4 marks]

An investor has been investing their own money for a period of years despite the fact that a better return could have been produced by investing the money in a risk-free investment that produced a modest income.

(ii) Outline five behaviours that may have led to the investor continuing to invest as had been done in the past. [7 marks]

An investment manager has to sell a number of stocks in the near future. They have decided to sell only those stocks that are trading above the price they paid for them and to make the sales the following Friday before they enjoy the weekend prior to a public holiday the following Monday.

(iii) Describe four behaviours that might account for these decisions. [6 marks]

(b) Outline the process for creating a regional or global index tracker fund and describe different benchmarks that can be used to evaluate its performance. [8 marks]

Question Three **[Total 25 Marks]**

(a) List any four domestic equities sector categories (giving at least one listed counter under each) that are evident on our local LuSE and briefly describe the investment characteristic of each. [8 marks]

(b) Explain why a fund that invests in domestic equities may use (fundamentals) analysts who specialise by industrial sectors. [8 marks]

(c) Describe the goals of an investment policy statement and the constraints faced in its implementation by the fund manager for an investor group of your choice. [9 marks]

Question Four **[Total 25 Marks]**

(a) Describe the rational expectations hypothesis and state its implications. [2 marks]

(b) Outline how technical analysis could be useful to active fund manager. [10 marks]

(c) The trustees of a pension scheme want to evaluate two active equity managers to ascertain which manager generates the higher return per unit of risk taken.

The table below sets out the managers' performance and the benchmark return over the year, as well as some summary statistics.

	Equity manager X	Equity manager Y	Benchmark Index	Risk free rate
Return	14% p.a.	18% p.a.	12% p.a.	6% p.a.
Standard Deviation	20% p.a.	25% p.a.	19% p.a.	
Correlation with benchmark	0.85	0.70	1.0	

You are given that: $\beta_p = \frac{\rho_{p,m}\sigma_p\sigma_m}{\sigma_m^2}$

Treynor measure, Sharpe measure and Jensen measure

$T_p = \frac{(\bar{r}_p - \bar{\bar{r}}_f)}{\beta_p}$, $S_p = \frac{(\bar{r}_p - \bar{\bar{r}}_f)}{\sigma_p}$, $\alpha_p = \bar{r}_p - [\bar{r}_f - \beta_p(\bar{r}_M - \bar{r}_f)]$

(i) Define Beta and determine its values for the above portfolios. [3 marks]

(ii) Calculate the above risk adjusted performance measures for each equity manager. [6 marks]

(iii) Comment on the results from part (ii) in relation to each equity manager. [2 marks]

(iv) Comment on the choice of an appropriate risk-adjusted performance measure for each of the above funds. [2 marks]

**********END OF EXAMINATION*********

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THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA Finance Sessional Examination

Friday 13th September 2019

MBF5152: PORTFOLIO MANAGEMENT AND WEALTH PLANNING

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Special Requirements: - A non-programmable scientific calculator

Instructions to candidates

1. This Question Paper consists of FIVE Questions each carrying 25 marks
2. Answer Question ONE and Choose ANY THREE other questions
3. Start the answer to each full question on a fresh page of the answer booklet.
4. Questions may be written in any order, but must be legibly numbered.
5. Write neatly and legibly, showing ALL your workings were necessary

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question One **[Total 25 Marks] - COMPULSORY**

(i) Describe the following active management styles.

(a) Value
(b) Growth
(c) Momentum
(d) Contrarian
(e) Rotational [9 marks]

(ii) The trustees of a pension scheme want to evaluate two active equity managers to ascertain which manager generates the higher return per unit of risk taken.

The table below sets out the managers' performance and the benchmark return over the year, as well as some summary statistics.

	Equity manager X	Equity manager Y	Benchmark Index	Risk free rate
Return	7% p.a.	9% p.a.	6% p.a.	3% p.a.
Standard Deviation	10% p.a.	15% p.a.	9% p.a.	
Correlation with benchmark	0.8	0.6	1.0	

You are given that:

$$\beta_p = \frac{\rho_{p,m}\sigma_p\sigma_m}{\sigma_m^2}$$

Treynor measure, Sharpe measure and Jensen measure

$$T_P = \frac{\left(\bar{r}_P - \bar{r}_f\right)}{\beta_P}, \quad S_P = \frac{\left(\bar{r}_P - \bar{r}_f\right)}{\sigma_P}, \quad \alpha_P = \bar{r}_P - \left[\bar{r}_f + \beta_P\left(\bar{r}_M - \bar{r}_f\right)\right]$$

(a) Define Beta and determine its values for the above portfolios. [2 marks]

(b) Calculate the coefficient of variation and the above THREE risk adjusted performance measures for each equity manager. [7 marks]

(c) Comment on the results from part (ii) in relation to each equity manager. [2 marks]

(b) Comment on the choice of an appropriate risk-adjusted performance measure. [3 marks]

(c) State FOUR reasons why the performance of an investment portfolio is measured. [2 marks]

Question Two **[Total 25 Marks]**

(i) An individual in a particular country is looking to set up a self-invested individual pension arrangement (IPA).

The regulations in the country concerned allow the individual to select the assets to be held within the IPA. There are no restrictions on the assets that the investor could include within the IPA. However, the assets cannot be transferred out of the IPA until the minimum retirement age of 60 is reached.

(a) List ten (10) potential asset classes that the individual could invest in. [5 marks]

(b) Describe four key considerations that would be used to determine whether a particular asset class would be appropriate for the investor. [6 marks]

(ii) Describe the difference between an active and a passive investment approach for equity investment funds. [6 marks]

(iv) Describe how you may construct an index tracker fund on the Lusaka Stock Exchange (LuSE). [8 marks]

Question Three **[Total 25 Marks]**

(i) Describe the validity of any two assumptions of mean-variance portfolio theory. [2 marks]

(ii) You are given the following two assets on a stock exchange:

State	Probability	Returns (%)	
		Asset 1	Asset 2
1	0.20	19	26
2	0.30	22	15
3	0.10	27	24
4	0.40	31	7
Market capitalisation		30,000	70,000

(a) Clearly showing all your steps and compute the standard deviation and correlation coefficient between the given two investment instruments. [7 marks]

(b) Calculate the average portfolio return and of a market capitalisation weighted portfolio of the two assets. [2 marks]

(iii) Distinguish between financial planning and wealth planning [3 marks]

(iv) Limited savings, but numerous responsibilities is life by another name. And some of these responsibilities will run parallel to one another. For one, you can't delay saving for your retirement and you can't ignore your child's future either. Since increasing your pay or reducing expenses beyond a limit can't be an option always, we struggle with financial choices.

Prepare a short presentation to a group of young (late 20s) and new Teachers Union of Zambia members on how they can balance up the various financial dilemmas that they will face during the next two decades of life and present some practical, contextualised and efficient points. [7 marks]

(v) The two most common order types are the market order and the limit order. Describe and numerically illustrate how there two orders work in the trading of stocks. [4 marks]

Question Four **[Total 25 Marks]**

A private investor has allocated a proportion of his wealth to an investment manager who specialises in running equity portfolios. Over the last two years the flagship equity fund in which the investor is invested has underperformed its benchmark by more than 10% each year. Overall, the fund has lost 70% of its funds under management due to investor withdrawals.

The major contributor to the underperformance is the portfolio manager's heavily overweight holding in the stock of a company which has had several profit warnings.
The general market view is that the company will seek bankruptcy protection and is very unlikely to recover.

(i) Describe, for each of parts (a) and (b) below, TWO potential behaviours being exhibited by:

(a) the portfolio manager in continuing to hold an overweight position in the underperforming stock.
(b) the investor in continuing to hold units in the fund despite the underperformance of the fund. [8 marks]

To try and rebuild the asset base the investment manager has employed a new head of sales to try and attract new clients. When discussing the sales strategy the head of sales recommends that they must always be the first presenter in a competitive sales situation.

(ii) State the behaviour the head of sales believes consumers follow when presented with multiple options. [2 marks]
(iii) Assess whether the head of sales' strategy is sensible, or whether alternatives to presenting first would be more effective. [4 marks]

(iv) Describe the philosophy and assumptions behind fundamental and technical approaches to investment analysis. [11 marks]

Question Five **[Total 25 Marks]**

(i) Describe the rational expectations hypothesis and state its implications. [2 marks]

(ii) An individual has recently received an inheritance from a family member and has decided to invest in the equity market for the first time. They have approached a financial adviser to provide guidance on the individual equities in which they should invest. The individual wishes to have exposure in the consumer and mining sectors of the LuSE.

Identify the characteristics of the chosen sectors and justify the choice of this particular client based on the current and expected future economic trajectory of Zambia. [5 marks]

(iii) Explain the content of an investment policy statement and the constraints faced in its implementation by the fund manager of each of the following groups of investors.

(a) A university endowment fund [5 marks]

(b) A defined contribution pension fund [7 marks]

(c) A 35 year old high net worth financial trader with a substantial income who is considering what to do with her annual bonus, which is equal to 40 times national average earnings. [6 marks]

**********END OF EXAMINATION*********

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA Finance S/D Sessional Examination
Monday 15th March 2020

MBF5152: PORTFOLIO MANAGEMENT AND WEALTH PLANNING

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Special Requirements: - A non-programmable scientific calculator

Instructions to candidates

1. This Question Paper consists of FIVE Questions each carrying 25 marks
2. Answer Question ONE and Choose ANY THREE other questions
3. Start the answer to each full question on a fresh page of the answer booklet.
4. Questions may be written in any order, but must be legibly numbered.
5. Write neatly and legibly, showing ALL your workings were necessary

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question One **[Total 25 Marks] - COMPULSORY**

(i) Describe the rational expectations hypothesis and state its implications. [2 marks]

You are given the following list of counters listed on the Lusaka Securities Exchange (LuSE).

Airtel	Pamodzi	ZCCM IH
Bata	Larfarge	Zambeef
Copperbelt Energy Corporation	Zambia breweries	Zanaco
Investrust	Shoprite	Zambia sugar

(ii) State which of the above companies can be classified under the: financial, consumer, conglomerate and commodities sectors. [5 marks]

(iii) Identify the key characteristics of the any three of the above sectors. [6 marks]

(iv) Explain which counters will make up your top four picks based on the current and expected future economic trajectory of Zambia. [4 marks]

(v) Given that ten of the above counters have been chosen to make up the DocTC-LuSE10 index.

Describe how this index tracker fund can be constructed from the total population of 26 listed counters. [8 marks]

Question Two **[Total 25 Marks]**

(i) Describe any two styles commonly used to actively manage equity portfolios. [6 marks]

(ii) Explain the drivers, advantages and disadvantages of passive management for an equity portfolio. [6 marks]

(iii) Use the typical personal financial life cycle shown in Figure 1 below to present the: situation, financial needs and health/insurance needs for each of the presented life cycle stages. [13 marks]

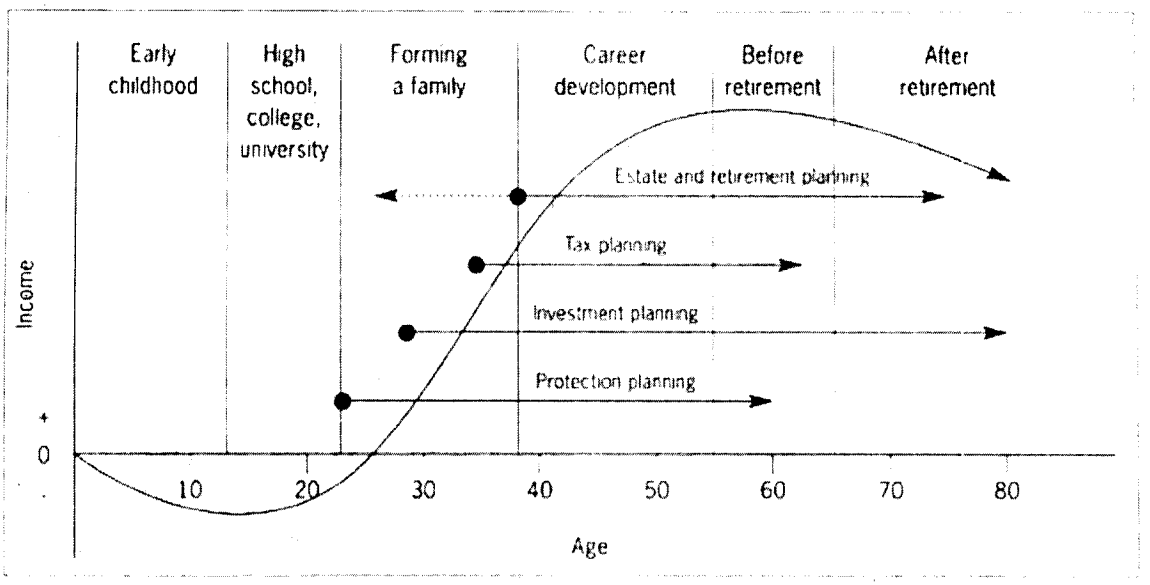


Figure 1: Personal financial life cycle

Question Three **[Total 25 Marks]**

(i) Describe the validity of any two assumptions of mean-variance portfolio theory. [2 marks]

(ii) You are an investment consultant to the trustees of a pension scheme. You are given the following total return data for the fund and the indices included in the benchmark.

	Local Equities	Overseas Equities	Local Bonds
State 1	10.%	15.2%	13.6%
State 2	3.5%	6.2%	4.9%
State 3	16.6%	21.2%	7.7%
Proportion	50%	20%	20%

Calculate the mean and standard deviation of the portfolio fully invested in the above three assets. [11 marks]

(iii) Distinguish between financial planning and wealth planning [3 marks]

(iv) Limited savings, but numerous responsibilities is life by another name. And some of these responsibilities will run parallel to one another. For one, you can't delay saving for your retirement and you can't ignore your child's future either. Since increasing your pay or reducing expenses beyond a limit can't be an option always, we struggle with financial choices.
Prepare a short presentation to a group of young (late 20s) and new Teachers Union of Zambia members on how they can balance up the various financial dilemmas that they will face during the

next two decades of life and present some practical, contextualised and efficient points.
[9 marks]

Question Four **[Total 25 Marks]**

Consider the following scenarios:

Scenario 1: A person goes to see a concert with a $50 ticket price. When they open their wallet to buy the ticket, they realise that they have lost $50.

Scenario 2: A person goes to see the same concert having paid $50 in advance for the ticket. As they arrive at the venue they realise they have lost the ticket.

Research by Richard Thaler has shown that in scenario 1 84% of people would buy the ticket; however, in scenario 2 only 46% of people would buy another ticket.

(i)
(a) State which aspect of behavioural finance this relates to. [1 marks]
(b) Propose, with reasons, why people may act in this way. [3 marks]

A large-scale experiment has shown that individuals who receive information about investment performance too frequently tend to under-invest in riskier assets.
(ii)
(a) State which aspect of behavioural finance this relates to. [1 mark]
(b) Propose, with reasons, why people may act in this way. [2 marks]

A street vendor has the choice of two places to sell their goods: at location A, where there is never any competition, but there are fewer potential customers: at location B, where a competitor is sometimes present, but there are more potential customers.

If the street vendor sells their goods at location A, they usually earn €75 in a day. If the street vendor goes to location B and there are no competitors there, they will usually earn €120 in a day. If there is a competitor at location B, they will usually earn €50 in the day.

The vendor cannot predict if there will be any competition at location B and usually chooses to sell at location A.

(iii)
(a) State which aspect of behavioural finance this relates to. [1 mark]
(b) Propose, with reasons, why the vendor may act in this way. [3 mark]

A tourist is looking for a restaurant to eat in. There are two restaurants next to each other: one is nearly full, while the other is less busy. The tourist chooses the nearly full one to have their meal.

(iv)
(a) State which aspect of behavioural finance this relates to. [1 mark]

(b) Propose, with reasons, why the tourist may act in this way. [3 marks]

(v) Explain the content of an investment policy statement and the constraints faced in its implementation by the fund manager of each of the following groups of investors.

(a) A university endowment fund [5 marks]

(b) The Aliko Dangote Foundation focusing on health, education and economic empowerment. [5 marks]

Question Five **[Total 25 Marks]**

(i) Describe the uses of performance measurement for an investment portfolio. [6 marks]

(ii) State the formula for the Sharpe ratio, defining any terms you use. [2 marks]

(iii) Explain the suitability of use for performance evaluation of each of Sharpe ratio, Treynor or Jensen ratios for a fund manager. [9 marks]

(iv) Discuss the key factors to consider when selecting a fund manager. [8 marks]

**********END OF EXAMINATION*********

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA Finance Sessional Examination

Friday 10th September 2021

MBF5152: PORTFOLIO MANAGEMENT AND WEALTH PLANNING

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Special Requirements: - A non-programmable scientific calculator

Instructions to candidates

1. This Question Paper consists of FIVE Questions each carrying 25 marks
2. Answer Question ONE and Choose ANY THREE other questions
3. Start the answer to each full question on a fresh page of the answer booklet.
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Question One **[Total 25 Marks] - COMPULSORY**

A Zambian pension fund administrator have allowed for "flexibility with accountability" whereby the member of the pension fund is allowed to make a partial withdrawal for self-administration of up to 3*annual salary from one's accumulated pension.

The middle aged member with current annual salary of K500000 is making a consideration of the following op :

- Buying Shares on the stock exchange
- Buying government short-term/ long term bonds
- Undertaking an entrepreneurial venture in agriculture
- A partnership with a retired parent into funding a School/college

Assuming that the investor life cycle applies to this case

(i) Undertake an investor profile for this typical case. [5 marks]
(ii) Evaluate the suitability of each of the above investment options to the generic investor life cycle. [8 marks]
(iii) Advise the member on how this lumpsum may be split among at least three of the above options. [6 marks]
(d) Explain how the above option would impact on the final accumulations under each of the two primary pension arrangements. [6 marks]

Question Two **[Total 25 Marks]**

(i) Describe the difference between an active and a passive investment approach for equity investment funds. [6 marks]

(ii) Describe how you may construct an index tracker fund on the Lusaka Stock Exchange (LuSE). [8 marks]

(iii) The trustees of a pension scheme want to evaluate two active equity managers to ascertain which manager generates the higher return per unit of risk taken.

The table below sets out the managers' performance and the benchmark return over the year, as well as some summary statistics.

	Equity manager X	Equity manager Y	Benchmark Index	Risk free rate
Return	7% p.a.	9% p.a.	6% p.a.	3% p.a.
Standard Deviation	10% p.a.	15% p.a.	9% p.a.	
Correlation with benchmark	0.8	0.6	1.0	

You are given that:

$$\beta_p = \frac{\rho_{p,m}\sigma_p\sigma_m}{\sigma_m^2}$$

Treynor measure, Sharpe measure and Jensen measure

$$T_P = \frac{\left(\bar{r}_P - \bar{r}_f\right)}{\beta_P} \quad S_P = \frac{\left(\bar{r}_P - \bar{r}_f\right)}{\sigma_P} \quad \alpha_P = \bar{r}_P - \left[\bar{r}_f + \beta_P\left(\bar{r}_M - \bar{r}_f\right)\right]$$

(a) Calculate the three risk adjusted performance measures for each equity manager. [6 marks]

(b) Comment on the results and appropriateness of the above results in relation to each equity manager. [3 marks]

(c) State FOUR reasons why the performance of an investment portfolio is measured. [2 marks]

Question Three **[Total 25 Marks]**

Like emerging markets (EMs), Frontier markets (FMs) like the Lusaka Securities exchange (LuSE) are the next avenue for international diversification. FMs offer higher and more predictable average returns with low correlations with the developed market returns despite their limited liquidity as well as higher volatility and transactions costs. While regulations, market structure and learning processes could create the framework to bring about relatively efficient markets in FMs, thinness, the nature of the participants, lack of liquidity, inadequate accounting regulations, microstructure of markets and the evolving nature of the markets seem to impede the transition towards even weak-form EMH (Abdmoulah, 2009). Furthermore, the observed high concentration of shareholding in FMs may be due to the lack of depth in those markets and limited individual investor participation.

(i) List the eight themes of Behavioural finance [4 marks]

(ii) In light of the above characteristics of frontier markets, discuss how any five of the above themes may lead to better market outperformance. [15 marks]

(iii) Outline the nature of LuSE trading and the use of the various types of orders that are used in the trading of stocks. [6 marks]

Question Four **[Total 25 Marks]**

(i) Describe the assumptions, philosophy and techniques behind fundamental and technical approaches to investment analysis. [13 marks]

(ii) Describe the rational expectations hypothesis and state its implications. [3 marks]

(i) Describe any three active equity portfolio management styles. [9 marks]

Question Five **[Total 25 Marks]**

(i) Explain the content of an investment policy statement and the constraints faced in its implementation by the fund manager of each of the following groups of investors.

(a) A university endowment fund [6 marks]

(b) The Bill Melinda Gates foundation. [7 marks]

(ii) Prepare an advisory note to the new minister of Finance on how Zambia could court and attract foreign investors based on the Principles for Responsible Investment (PRI). [12 marks]

**********END OF EXAMINATION*********

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA Finance Sessional Examination
Friday 16th September 2021

MBF5152: PORTFOLIO MANAGEMENT AND WEALTH PLANNING

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Special Requirements: - A non-programmable scientific calculator

Instructions to candidates

1. This Question Paper consists of FIVE Questions each carrying 25 marks
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Question One **[Total 25 Marks] - COMPULSORY**

(i) Explain, using any four themes of behavioural finance, the types of biases that can affect an investor's view of the probability of an event occurring that is outside their control, such as an equity market crash. [8 marks]

(ii) Describe the additional forms of bias that are introduced when an active investor has the discretion to improve an outcome compared with a passive (index) investor. [6 marks]

In a developing country, house prices have been rising rapidly for several years fuelled by loans of up to 100% of the value of the house. The government has introduced rules that restrict the amount of borrowing to 50% of the value of the house. Following the restriction in lending, house prices have started to fall and are expected to do so for the next couple of years.

(iii) Explain the behaviours exhibited by the following people:
(a) An investor who has been successful in the past buying residential property to profit from capital appreciation, who has decided to continue to buy residential property over the next couple of years. [3 marks]

(b) An economist who has written a recent article commenting that house prices were always expected to fall. The economist uses historic data to prove this point. All news articles written prior to the borrowing restriction only indicated that prices would continue to rise. [3 marks]

A couple have taken advantage of the falling house prices and purchased a new house.
As part of the move they wish to review their house insurance options. They are deciding whether to stay with their current insurance provider or to move to a new entrant into the market.

Details of the two policies are as follows:

	Existing Co	*New Co*
Premium	650	500
Excess payable	100 per claim	80–120 depending on profitability of company
Policy schedule	Detailed booklet setting out all terms and conditions	Limited information provided on terms and conditions

The couple have not made a claim in the past and it is unlikely that they will make a claim over the coming year. The couple decide to take out the policy with Existing Co.

(iv) Outline, with reasons, three possible behaviours which explain why the couple have stayed with Existing Co. [5 marks]

Question Two **[Total 25 Marks]**

(a) The Mpulungu lake Tanganyika fisheries association (MLTFA) whose members livelihood mainly depends on fishing, has become increasingly concerned at the lack of private provision for retirement. In order to ensure fishermen are provided for in retirement, the government plans to introduce a compulsory saving scheme. The government has no prior financial experience of such saving schemes.

(i) Discuss the different objectives of the fishermen that should be considered when designing the new scheme. Include the available design scheme options. [12 marks]

A young adventurous fisherman with no dependents and who earns a below average salary is considering his investment options for retirement.

(ii) Discuss, for each of the objectives identified in (i), which asset type(s) could be suitable to meet the objectives of the young adventurous fisherman. [13 marks]

Question Three **[Total 25 Marks]**

(a) You are employed as a retail analyst at a well-respected investment bank. A very successful national pizza delivery company is planning to expand into a new overseas market and is looking to raise additional capital. The company has approached your bank for financial assistance. You have been asked to prepare a report for the investment bank on whether they should provide the requested finance.

(i) Describe the fundamental factors that you would consider when evaluating the pizza delivery company. [6 marks]
(ii) Outline the areas you would investigate to form a view on the factors in (i). [4 marks]
(iii) Comment on any potential issues the management of the pizza delivery company should consider when entering an overseas market. [4 marks]

(b) The trustees of a pension scheme want to evaluate two active equity managers to ascertain which manager generates the higher return per unit of risk taken.

The table below sets out the managers' performance and the benchmark return over the year, as well as some summary statistics.

	Equity manager X	Equity manager Y	Benchmark Index	Risk free rate
Return	5% p.a.	9% p.a.	7% p.a.	3% p.a.
Standard Deviation	5% p.a.	8% p.a.	4% p.a.	
Correlation with benchmark	0.8	0.6	1.0	

You are given that:

$$\beta_p = \frac{\rho_{p,m}\sigma_p\sigma_m}{\sigma_m^2}$$

Treynor measure, Sharpe measure and Jensen measure

$$T_P = \frac{\left(\bar{r}_P - \bar{r}_f\right)}{\beta_P} \quad S_P = \frac{\left(\bar{r}_P - \bar{r}_f\right)}{\sigma_P} \quad \alpha_P = \bar{r}_P - \left[\bar{r}_f + \beta_P\left(\bar{r}_M - \bar{r}_f\right)\right]$$

(i) Calculate the three risk adjusted performance measures for each equity manager. [6 marks]

(ii) Comment on the results and appropriateness of the above results in relation to each equity manager. [3 marks]

(iii) State FOUR reasons why the performance of an investment portfolio is measured. [2 marks]

Question Four **[Total 25 Marks]**

(a) A Zambian retirement fund has approached you as investment advisor to assist it in incorporating environmental, social and governance (ESG) considerations into its investment activities.

Outline possible ESG factors which could potentially be taken into account in making investment decisions. [9 marks]

(b) Explain the content of an investment policy statement and the constraints faced in its implementation by the fund manager of each of the following groups of investors.

(i) A university endowment fund [6 marks]
(ii) The Bill and Melinda Gates foundation. [7 marks]

(c) Describe the rational expectations hypothesis and state its implications. [3 marks]

Question Five **[Total 25 Marks]**

(a) Prepare a write-up on how prudent financial and wealth planning may lead to better personal cash flow experience and management. [12 marks]

(a) Describe the difference between an active and a passive investment approach for equity investment funds. [5 marks]

(c) Describe how you may construct an index tracker fund on the Lusaka Stock Exchange (LuSE). [8 marks]

************END OF EXAMINATION***********

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA Finance Sessional Examination
Thursday 2nd December 2021

MBF5152: PORTFOLIO MANAGEMENT AND WEALTH PLANNING

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Special Requirements: - A non-programmable scientific calculator

Instructions to candidates

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Question One **[Total 25 Marks] - COMPULSORY**

(a) Describe the forms of the Efficient Markets Hypothesis (EMH). [3 marks]

(b) For each of the following tests, state the form of EMH that it used to test, give a description and the data and procedures involved for a market such as the Lusaka Securities Exchange (LuSE).

- Price-volume relationship
- Chaos theory
- Day of the week effect
- Event study methodology [12 marks]

(c) A private investor has allocated a proportion of his wealth to an investment manager who specialises in running equity portfolios. Over the last two years the flagship equity fund in which the investor is invested has underperformed its benchmark by more than 10% each year. Overall, the fund has lost 70% of its funds under management due to investor withdrawals.

The major contributor to the underperformance is the portfolio manager's heavily overweight holding in the stock of a company which has had several profit warnings.

The general market view is that the company will seek bankruptcy protection and is very unlikely to recover.

Describe, for each of parts (i), (ii) and (iii) below, using any TWO **different for each part**, potential behavioural finance themes being exhibited.

(i) The portfolio manager in continuing to hold an overweight position in the underperforming stock. [3 marks]

(ii) The investor in continuing to hold units in the fund despite the underperformance of the fund. [3 marks]

To try and rebuild the asset base the investment manager has employed a new head of sales to try and attract new clients. When discussing the sales strategy the head of sales recommends that they must always be the first presenter in a competitive sales situation and use scenarios in their slides.

(iii) Using named behavioural themes assess the validity of the strategy adopted by the new head of sales. [4 marks]

Question Two **[Total 25 Marks]**

A Zambian pension fund administrator have allowed for "flexibility with accountability" whereby the member of the pension fund is allowed to make a partial withdrawal for self-administration of up to 3*annual salary from one's accumulated pension.

The middle aged member with current annual salary of K500000 is making a consideration of the following options:

- Buying Shares on the stock exchange
- Buying government short-term/ long term bonds
- Undertaking an entrepreneurial venture in agriculture
- A partnership with a retired parent into funding a School/college

Assuming that the investor life cycle applies to this case

(i) Undertake an investor profile for this typical case. [5 marks]
(ii) Evaluate the suitability of each of the above investment options to the generic investor life cycle. [8 marks]
(iii) Advise the member on how this lumpsum may be split among at least three of the above options. [6 marks]
(d) Explain how the above option would impact on the final accumulations under each of the two primary pension arrangements. [6 marks]

Question Three **[Total 25 Marks]**

(a) You are employed as a retail analyst at a well-respected investment bank. A very successful national pizza delivery company is planning to expand into a new overseas market and is looking to raise additional capital. The company has approached your bank for financial assistance. You have been asked to prepare a report for the investment bank on whether they should provide the requested finance.

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(i) Calculate the three risk adjusted performance measures for each equity manager. [6 marks]

(ii) Comment on the results and appropriateness of the above results in relation to each equity manager. [3 marks]

(iii) State FOUR reasons why the performance of an investment portfolio is measured. [2 marks]

Question Four **[Total 25 Marks]**

(a) A Zambian retirement fund has approached you as investment advisor to assist it in incorporating environmental, social and governance (ESG) considerations into its investment activities.

Outline possible ESG factors which could potentially be taken into account in making investment decisions. [11 marks]

(b) Explain the content of an investment policy statement and the constraints faced in its implementation by the fund manager of each of the following groups of investors.

(i) A university endowment fund [7 marks]

(ii) The Dangote foundation. [7 marks]

Question Five **[Total 25 Marks]**

(a) Prepare a write-up on how prudent financial and wealth planning may lead to better personal cash flow experience and management. [12 marks]

(a) Describe the difference between an active and a passive investment approach for equity investment funds. [5 marks]

(c) Describe how you may construct an index tracker fund on the Lusaka Stock Exchange (LuSE). [8 marks]

*************END OF EXAMINATION***********

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA/MSc Sessional Examination
Wednesday 16th December 2020

MBF6561 – DERIVATIVES AND ALTERNATIVE INVESTMENTS

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Special Requirements: - A non-programmable scientific calculator

Instructions to candidates

1. This Question Paper consists of FOUR Questions
2. Answer Question ONE and Choose ANY TWO other questions
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Question One **[Total 50 Marks] - COMPULSORY**

Consider the case of a MAPSA offshore fund that seeks to improve the risk adjusted investment returns from its assets by investing in long-term liquid **off-shore** assets. Assuming that NAPSA currently directly manage all of its assets. NAPSA has been presented with two options:

Option 1: Invest up to K1bn in commercial mortgage loans. Under a commercial mortgage loan money is lent to a special purpose company that owns one or more properties that provides collateral for the loan. The income after expenses produced by the one or more properties of the special purpose company funds the loan payments.

Option 2: Invest in a local assets through Alternative Investment structures

(i) Outline the advantages and disadvantages of owning physical properties compared to commercial mortgage loans **Option 1**. [9 marks]

(ii) Identify the benefits and constraints that offshore investments presents to NAPSA. [8 marks]

(iii) Describe how NAPSA may implement any **three** the following alternative investment portfolios.

(a) Private equity [5 marks]

(b) Venture capital [5 marks]

(c) Exchange traded funds [5 marks]

(d) Infrastructure [5 marks]

(e) Commodities [5 marks]

(iv) Alternative investment has matured over the last 30 years and is gradually becoming part of the mainstream financial industry, garnering greater attention and acceptance from both regulators and the general public. However, it is also entering a period of considerable growth and change due to the influence of macroeconomic drivers, post-crisis financial industry regulation, and two critical industry trends: the increasing sophistication of institutional investors and the rise of retail investors as an important source of capital.

Explain how the above factors have impacted on any three of the above alternative investments. [10 marks]

(v) Consider an option on a non-dividend-paying stock when the stock price is K500, the exercise price is K490, the continuously compounded risk-free rate of interest is 5% per annum, the volatility is 25% per annum, and the time to maturity is six months.

(a) State any four assumptions underlying the Black-Scholes formula for pricing options. [2 marks]

The Black-Scholes formula for a call and put option on a non-dividend paying security is

$c_t = S_t \times \Phi(d_1) - K \times (\exp(-r \times (T-t))) \times \Phi(d_2)$
$p_t = K \times (\exp(-r \times (T-t))) \times \Phi(-d_2) - S_t \times \Phi(-d_1)$

where $d_1 = \{\ln(S_t/K) + (r + (\frac{1}{2}\sigma^2)) \times (T-t)\} / (\sigma \times \sqrt{(T-t)})$
$d_2 = d_1 - (\sigma \times \sqrt{(T-t)})$
and
S_t = current price
σ = volatility
$T - t$ = time to expiry
K = strike price
r = risk free rate

(b) Calculate the price of the option using the Black-Scholes formula, if the option is a European call. [6 marks]

Question Two **[Total 25 Marks]**

(i) Over the next two years, a particular equity, currently priced at K700, will pay two cash dividends: interim one of K15 in three months and then a final dividend in nine months of K25, next year's dividends are expected to be 15% and 25% higher respectively. The one-year risk-free rate is 14%, continuously compounded.

Given that: $K = (S_0 - I)e^{rT}$

(a) Draw a clearly labelled time lime for this transaction. [3 marks]

(b) Calculate the forward price of this contract over a one-year horizon. [5 marks]

(ii) A chooser option is an option where, after a specified period of time, the holder can choose whether the option is a call or a put.

A chooser option is written on an underlying asset of a stock that does not pay dividends, with a price S_t at time t. The time when the choice is made is in T_1 years from the current time. The underlying option is assumed to be vanilla, with strike price K and European, with a time to

maturity in T_2 years ($T_2 > T_1$) from the current time. Let r be the risk-free interest rate and c the value of the underlying call option in time T_1 years.

(a) Outline the circumstances under which the chooser option will be profitable for exercise. [5 marks]

(b) Draw the possible payoff diagram for a chooser option given a premium of K15 and strike price of K200. [3 marks]

A company has announced that it is bidding for a large government contract and will find out whether or not it has been successful in 2 months' time.

(c) Suggest how a chooser option could be useful to a shareholder in the company. [5 marks]

(d) A non-dividend paying share is currently priced at K100 and the volatility implied by one year term to maturity option on the share is 10%. The force of interest is 5%.

Given that the Black – Scholes option price for the option is 0.46 for a strike price of 120.

Calculate the prices for the corresponding put options given the same strike prices as the call option. [4 marks]

The put-call parity relationship is given by: $c_t + Ke^{-r(T-t)} = p_t + S_t$

Question Three **[Total 25 Marks]**

(i) A European airline is reviewing its fuel hedging policy. It has historically used heating oil futures contracts forwards to hedge this risk.

A proposal is being made to the management board to increase fuel hedging and currency hedging to 100% of expected demand over the next 12 months using heating oil futures.

(a) Describe the differences between futures and forward contracts. [4 marks]

(b) Outline the challenges faced in trying to achieve a perfect hedge in the above cases. [4 marks]

Having reviewed the proposal, the board has queried the use of longer-dated contracts to hedge the expected exposure and the lower levels of liquidity in these contracts.

(c) Recommend, with reasons, an alternative trading strategy that could be used to address this concern. [4 marks]

The airline's main competitor has chosen not to hedge any of its fuel costs.

(d) Discuss why the competitor may have chosen this strategy. [4 marks]

(e) In light of the Covid-19 market outcomes evaluate which of the above airlines will have better performance.

(a) For the festive season, the Airline knows that it will need to purchase 820,000 gallons of fuel. Oil futures contracts are currently traded for delivery every month and the contract size is 42,000 gallons. The company therefore decides to use the December contract for hedging and takes a short position in December contracts. The futures price in March is $1.67 per gallon. The company finds that it is ready to purchase the fuel in September. It therefore closes out its futures contract on that date. The spot price and futures price on September 31 are $1.58 per gallon and $1.52 per gallon.

(i) Find the gain on futures contract. [1 mark]

(ii) Calculate the BASIS when the contract is closed out. [2 marks]

(iii) Determine the final effective price paid by the company for the oil purchased on September 31. [3 marks]

(iv) Given that for every $0.82 change in the futures price, the cash market changes by $1.00.

(v) Calculate the risk minimizing hedge for the above case. [3 marks]

Hint: you are given:

$$N_F^* = \frac{Q_S}{Q_F}\frac{\Delta S}{\Delta F}$$

Question Four **[Total 25 Marks]**

(i) Write short notes outlining the meanings and applications of the following of terms.

(a) Over the counter [4 marks]

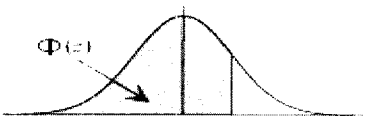
(a) Market making [3 marks]

(a) Clearing house [3 marks]

(ii) Explain how swaps arrangements can be used to manage risks in any three circumstances. Include diagrams and cashflows where possible. [15 marks]

************END OF EXAMINATION***********

TABLE 1: AREAS UNDER THE NORMAL CURVE



z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
-3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
-3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
-3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
-2.9	0.0019	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014
-2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
-2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
-2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
-2.5	0.0062	0.0060	0.0059	0.0057	0.0055	0.0054	0.0052	0.0051	0.0049	0.0048
-2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0068	0.0066	0.0064
-2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
-2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
-2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
-2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
-1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823
-1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
-1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170
-1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
-0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
-0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867
-0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
-0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
-0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
-0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
-0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
-0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
-0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998

$\alpha = 1 - \phi(z_\alpha)$

α	z_α
0.10	1.2816
0.05	1.6449
0.025	1.9600
0.010	2.3263
0.005	2.5758

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA/MSc Sessional Examination
Tuesday 7th September 2021

MBF6011/MAF6561 – DERIVATIVES AND ALTERNATIVE INVESTMENTS

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Special Requirements: - A non-programmable scientific calculator

Instructions to candidates

1. This Question Paper consists of FOUR Questions
2. Answer Question ONE and Choose ANY TWO other questions
3. Start the answer to each full question on a fresh page of the answer booklet.
4. Questions may be written in any order, but must be legibly numbered.
5. Write neatly and legibly, showing ALL your workings were necessary

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question One **[Total 50 Marks] - COMPULSORY**

(a) Art is an important alternative asset class. High-net-worth individuals (HNWIs) hold on average 9% of their investment portfolios in art and other types of collectibles (such as paitings, Bordeaux wines, classic cars, superior watches, etc.). The total value of collectibles held by HNWIs is estimated at more than USD 4 trillion (Deloitte, 2013). Purchases of art through auction houses and internet-auctions have been growing rapidly over the past two decades (Deloitte, 2016) and global art sales are estimated to have exceeded USD 63 billion in 2018 (Art Basel, 2018).

Briefly discuss the characteristics of Art that qualifies it as an alternative investment asset class. [10 marks]

(b) Read the article extracts below in the **THE FUTURE OF ALTERNATIVE INVESTMENTS**

Looking ahead, the alternative investments industry has huge potential to continue growing but also shift in response to several timely stimuli, ranging from the all-encompassing (such as the COVID-19 pandemic) to the seemingly unrelated (for instance, the advancement of 3D printing technology can produce a living apartment at less that $5000 per unit!).

Harvard Business School Professor Randolph Cohen,stated that;
"Each new market that opens up not only is a place that enables you to look for opportunities," Cohen says, "but some of the specific strategies that worked in developed or older markets will work for a while in new markets until there's enough competition from sophisticated funds to drive those out."

The alternative investments industry took root in the United States in 1852 with investments made into the building of the Transcontinental Railroad. In recent years, it's branched out into an international market, creating new opportunities to use strategies that have already run their course in the United States.

Additionally, the transition of in-person activities to the digital space is predicted to impact the real estate field. Segel presents the launch of Amazon.com as an example, which was quickly followed by a sharp decline in US shopping malls.

Nothing forced the switch to the digital space quite like the COVID-19 pandemic, which required lockdowns, quarantines, event cancellations, and a worldwide switch to remote work to mitigate the virus's spread. The realization that business can proceed as usual without using in-person workspaces has prompted many companies to reassess whether renting office space is necessary, or if downsizing is a better option to allow a fraction of employees to work in person at a given time. This is predicted to cause a ripple effect throughout the real estate investment space as the demand for office space and office-accessible homes decrease.

Because the alternatives space is heavily reliant on personal relationship management, the pandemic may have made investing in alternatives difficult because it was unsafe to meet with others. Cohen notes that this is especially true for venture capital or other private equity

investments, in which the potential investor typically has several face-to-face meetings, in-person pitches, and office visits before deciding to invest in a company.

Source: Selected text from: https://online.hbs.edu/blog/post/alternative-investment-industry

(i) List and give a definition for property and any three other alternative investment assets in the above text. [6 marks]

(ii) With reference to the Covid-19 in Zambia and globally, discuss its impact on the opportunities, benefits and implementation on the four alternative asset classes in (i) above. [20 marks]

(c) Explain how swaps arrangements can be used to manage risks faced by Zambia borrowers, lenders and investors in any three circumstances. Include diagrams and cashflows where possible. [14 marks]

Question Two **[Total 25 Marks]**

(a) Consider an option on a non-dividend-paying stock when the stock price is K1100, the exercise price is K990, the continuously compounded risk-free rate of interest is 11% per annum, the volatility is 30% per annum, and the time to maturity is nine months.

(i) State the assumptions underlying the Black-Scholes formula for pricing options. [3 marks]

The Black-Scholes formula for a call and put option on a non-dividend paying security is

$$c_t = S_t \times \Phi(d_1) - K \times (\exp(-r \times (T-t))) \times \Phi(d_2)$$
$$p_t = K \times (\exp(-r \times (T-t))) \times \Phi(-d_2) - S_t \times \Phi(-d_1)$$

where $d_1 = \{\ln(S_t/K) + (r + (\frac{1}{2}\sigma^2)) \times (T-t)\} / (\sigma \times \sqrt{(T-t)})$
$d_2 = d_1 - (\sigma \times \sqrt{(T-t)})$

and,
S_t = current price
σ = volatility
$T - t$ = time to expiry
K = strike price
r = risk free rate

(ii) Calculate the price of the option using the Black-Scholes formula, if the option is a European call. [7 marks]

(b) A European airline is reviewing its fuel hedging policy. It has historically used heating oil futures contracts forwards to hedge this risk.

A proposal is being made to the management board to increase fuel hedging and currency hedging to 100% of expected demand over the next 12 months using heating oil futures.

(i) Describe the differences between futures and forward contracts. [3 marks]

(ii) Outline the challenges faced in trying to achieve a perfect hedge in the above cases. [4 marks]

Having reviewed the proposal, the board has queried the use of longer-dated contracts to hedge the expected exposure and the lower levels of liquidity in these contracts.

(iii) Recommend, with reasons, an alternative trading strategy that could be used to address this concern. [4 marks]

The airline's main competitor has chosen not to hedge any of its fuel costs.

(iv) In light of the Covid-19 market outcomes evaluate which of the above airlines will have better performance. [4 marks]

Question Three **[Total 25 Marks]**

(a) Over the next two years, a particular equity, currently priced at K3000, will pay two cash dividends: interim one of K150 in three months and then a final dividend in nine months of K200, next year's dividends are expected to be 8% and 12% higher respectively. The one-year risk-free rate is 15%, continuously compounded.

Given that: $K = (S_0 - I)e^{rT}$

(i) Draw a clearly labelled time lime for this transaction. [3 marks]

(ii) Calculate the forward price of this contract over a one-year horizon. [5 marks]

(b) A chooser option is an option where, after a specified period of time, the holder can choose whether the option is a call or a put.

A chooser option is written on an underlying asset of a stock that does not pay dividends, with a price S_t at time t. The time when the choice is made is in T_1 years from the current time. The underlying option is assumed to be vanilla, with strike price K and European, with a time to maturity in T_2 years ($T_2 > T_1$) from the current time. Let r be the risk-free interest rate and c the value of the underlying call option in time T_1 years.

(i) Outline the circumstances under which the chooser option will be profitable for exercise. [5 marks]

(ii) Draw the possible payoff diagram for a person having a forward contract to buy the underlying asset at a price of 0.8K at time T2. [3 marks]

A company has announced that it is bidding for a large government contract and will find out whether or not it has been successful in 2 months' time.

(iii) Suggest how a chooser option could be useful to a shareholder in the company. [5 marks]

(c) A non-dividend paying share is currently priced at K100 and the volatility implied by one year term to maturity option on the share is 10%. The force of interest is 5%.

Given that the Black – Scholes option price for the option is 0.46 for a strike price of 120.

Calculate the prices for the corresponding put options given the same strike prices as the call option. [4 marks]

The put-call parity relationship is given by: $c_t + Ke^{-r(T-t)} = p_t + S_t$

Question Four **[Total 25 Marks]**

(a) Write short on the three main uses of derivatives. [9 marks]

(b) Explain the need for an investment trust company for a group of professionals. [6 marks]

(c) For the festive season, the Airline knows that it will need to purchase 820,000 gallons of fuel. Oil futures contracts are currently traded for delivery every month and the contract size is 42,000 gallons. The company therefore decides to use the December contract for hedging and takes a short position in December contracts. The futures price in March is \$0.67 per gallon. The company finds that it is ready to purchase the fuel in September. It therefore closes out its futures contract on that date. The spot price and futures price on September 31 are \$0.58 per gallon and \$0.52 per gallon.

(i) Find the gain on futures contract. [1 mark]

(ii) Calculate the BASIS when the contract is closed out. [2 marks]

(iii) Determine the final effective price paid by the company for the oil purchased on September 31. [2 marks]

(iv) Given that for every \$0.90 change in the futures price, the cash market changes by \$1.00.

(v) Calculate the risk minimizing hedge for the above case. [3 marks]

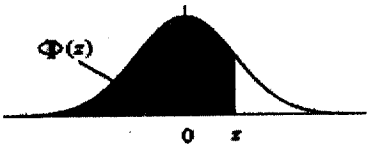
Hint: you are given:

$$N_F^* = \frac{Q_S}{Q_F}\frac{\Delta S}{\Delta F}$$

(vi) Outline whether the situation in (b) may give rise to arbitrage. [2 marks]

************END OF EXAMINATION***********

TABLE 1: AREAS UNDER THE NORMAL CURVE



z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
-3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
-3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
-3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
-2.9	0.0019	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014
-2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
-2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
-2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
-2.5	0.0062	0.0060	0.0059	0.0057	0.0055	0.0054	0.0052	0.0051	0.0049	0.0048
-2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0068	0.0066	0.0064
-2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
-2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
-2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
-2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.4	0.0808	0.0793	0.0778	0.07	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
-1.3	0.096	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823
-1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
-1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170
-1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
-0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
-0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867
-0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
-0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
-0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
-0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
-0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
-0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
-0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.90	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.919	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998

$\alpha = 1 - \phi(z_\alpha)$

α	z_α
0.10	1.2816
0.05	1.6449
0.025	1.9600
0.010	2.3263
0.005	2.5758

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA/MSc Sessional Examination
Tuesday 13th September 2021

MBF6011/MAF6561 – DERIVATIVES AND ALTERNATIVE INVESTMENTS

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Special Requirements: - A non-programmable scientific calculator

Instructions to candidates

1. This Question Paper consists of FOUR Questions
2. Answer Question ONE and Choose ANY TWO other questions
3. Start the answer to each full question on a fresh page of the answer booklet.
4. Questions may be written in any order, but must be legibly numbered.
5. Write neatly and legibly, showing ALL your workings were necessary

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question One **[Total 50 Marks] - COMPULSORY**

(a) Discuss the opportunities and limitations presented by the following alternative investment asset classes in Zambia.

(i) Infrastructure
(ii) Private equity
(iii) Hedge funds
(iv) Exchange traded funds [20 marks]

(b) An investment company manages a property unit trust fund which has a market value of K800 million. When investors sell units, payment to the investor is normally made within four days. However, in extreme circumstances (as defined in the governing documentation), the investment company can defer such payments by up to six months.

(i) Justify why it might be necessary to defer payments in this way. [5 marks]

(ii) Discuss the following aspects of the fund's investment strategy:
- The nature and range of the property assets it should hold.
- The proportion of the fund that should be held in liquid assets. [12 marks]

A change in the regulations governing unit trusts has been proposed to limit the worst case settlement period to selling investors to not exceed one month.

(iii) Discuss the actions that the fund manager could take and hence the impact that this new regulation could have on the investment performance of this fund. [4 marks]

(c) Art is an important alternative asset class. High-net-worth individuals (HNWIs) hold on average 9% of their investment portfolios in art and other types of collectibles (such as paitings, Bordeaux wines, classic cars, superior watches, etc.). The total value of collectibles held by HNWIs is estimated at more than USD 4 trillion (Deloitte, 2013). Purchases of art through auction houses and internet-auctions have been growing rapidly over the past two decades (Deloitte, 2016) and global art sales are estimated to have exceeded USD 63 billion in 2018 (Art Basel, 2018).

Briefly discuss the characteristics of Art that qualifies it as an alternative investment asset class. [9 marks]

Question Two **[Total 25 Marks]**

(a) With reference to Zambia, describe any three ways in which the country may use commodity markets and commodity derivatives to enhance the benefits from the any of the following.

(i) a locally produced agricultural commodity [6 marks]
(i) an imported petroleum commodity [5 marks]

(b) Suppose that the current price of Share X is 115 and that a call option with a price of 5 is available on Share X with an exercise price of 110. Explain the concepts of in-the-money and out of the money for this option. [3 marks]

(c) The establishment of a Commodities exchange in Zambia is expected to create a market for Commodity futures. After a mid-season assessment of the state of the Soybean crop in Chipata, you decided to take a short position in the crop, and enter into a Soybean meal futures contract on March 24. The contract expires on July 24 and requires the posting of a 20% initial margin and a K150 maintenance margin; for simplicity; however, assume that the account is marked to market on a monthly basis. Assume the following represent the contract delivery prices (in Kwacha per ton) that prevail on each settlement date:

Date	Price (K)
March 24 (initiation)	1000.00
April 24	1200.00
May 24	1050.00
June 24	950.00
July 24 (delivery)	900.00

(i) Assuming there are two counter parties (buyer and seller) tabulate their margin account positions on each settlement date, including any additional equity required to meet a margin call. [9 marks]

(ii) Compute the amount of cash that will be returned to you on July 24, and the gain or loss on your position, expressed as a percentage of your initial margin commitment. [2 marks]

Question Three **[Total 25 Marks]**

(a) Briefly describe the main attractions and potential drawbacks of overseas investments. [8 marks]

(b) Define and give illustrated examples of the following:
(i) Swaptions
(ii) Forward rate agreement [7 marks]

(c) For the standard Black Scholes call price formula, calculate the price of a European call on a non-dividend paying stock with the following features:

- risk free rate 5% p.a.
- volatility 20% p.a.
- time to expiry 1 year
- current price of underlying 100 ngwee
- strike price 100 ngwee

[6 marks]

The Black-Scholes formula for a call and put option on a non-dividend paying security is

$c_t = S_t \times \Phi(d_1) - (\exp(-r \times (T-t))) \times \Phi(d_2)$
$p_t = K \times (\exp(-r \times (T-t))) \times \Phi(-d_2) - S_t \times \Phi(-d_1)$

where $d_1 = \{\ln(S_t/K) + (r + (\frac{1}{2}\sigma^2)) \times (T-t)\} / (\sigma \times \sqrt{(T-t)})$
$d_2 = d_1 - (\sigma \times \sqrt{(T-t)})$

(d) Justify the size of your answer in (c). [1 mark]

(e) Explain how the above result would be affected if a special dividend was announce during the course of the year. [3 marks]

Question Four **[Total 25 Marks]**

(a) Over the next two years, a particular equity, currently priced at K3000, will pay two cash dividends: interim one of K150 in three months and then a final dividend in nine months of K200, next year's dividends are expected to be 8% and 12% higher respectively. The one-year risk-free rate is 15%, continuously compounded.
Given that: $K = (S_0 - I)e^{rT}$
Calculate the forward price of this contract over a one-year horizon. [6 marks]

(b) Define what is meant by a "contango" market. [2 marks]

(c) Explain what is likely to happen to prices of the following commodities during a global recession:

(i) crude oil
(ii) gold
(iii) pork bellies or eggs [6 marks]

(d) A non-dividend paying share is currently priced at K100 and the volatility implied by one year term to maturity option on the share is 10%. The force of interest is 5%.

Given that the Black – Scholes option price for the option is 4.05 for a strike price of 105.

Calculate the prices for the corresponding put options given the same strike prices as the call option. [4 marks]

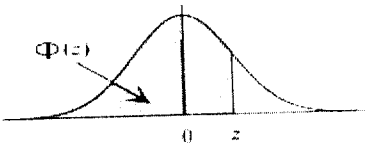
The put-call parity relationship is given by: $c_t + Ke^{-r(T-t)} = p_t + S_t$

(e) Explain how swaps arrangements can be used to manage risks faced by Zambia borrowers and investors in any two circumstances. Include diagrams where possible. [7 marks]

************END OF EXAMINATION***********

MBDC 100/2[illegible] EXAM Page 4 of 4

TABLE 1: AREAS UNDER THE NORMAL CURVE



z	.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
-3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
-3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
-3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
-2.9	0.0019	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014
-2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
-2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
-2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
-2.5	0.0062	0.0060	0.0059	0.0057	0.0055	0.0054	0.0052	0.0051	0.0049	0.0048
-2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0068	0.0066	0.0064
-2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
-2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
-2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
-2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
-1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823
-1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
-1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170
-1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
-0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
-0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867
-0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
-0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
-0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
-0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
-0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
-0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
-0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998

$\alpha = 1 - \phi(z_\alpha)$

α	z_α
0.10	1.2816
0.05	1.6449
0.025	1.9600
0.010	2.3263
0.005	2.5758

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA/MSc Sessional Examination
Wednesday 16th December 2020

MBF6561 – DERIVATIVES AND ALTERNATIVE INVESTMENTS

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Special Requirements: - A non-programmable scientific calculator

Instructions to candidates

1. This Question Paper consists of FOUR Questions
2. Answer Question ONE and Choose ANY TWO other questions
3. Start the answer to each full question on a fresh page of the answer booklet.
4. Questions may be written in any order, but must be legibly numbered.
5. Write neatly and legibly, showing ALL your workings were necessary

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question One **[Total 50 Marks] - COMPULSORY**

Consider the case of a MAPSA offshore fund that seeks to improve the risk adjusted investment returns from its assets by investing in long-term liquid **off-shore** assets. Assuming that NAPSA currently directly manage all of its assets. NAPSA has been presented with two options:

Option 1: Invest up to K1bn in commercial mortgage loans. Under a commercial mortgage loan money is lent to a special purpose company that owns one or more properties that provides collateral for the loan. The income after expenses produced by the one or more properties of the special purpose company funds the loan payments.

Option 2: Invest in a local assets through Alternative Investment structures

(i) Outline the advantages and disadvantages of owning physical properties compared to commercial mortgage loans **Option 1**. [9 marks]

(ii) Identify the benefits and constraints that offshore investments presents to NAPSA. [8 marks]

(iii) Describe how NAPSA may implement any **three** the following alternative investment portfolios.

(a) Private equity [5 marks]

(b) Venture capital [5 marks]

(c) Exchange traded funds [5 marks]

(d) Infrastructure [5 marks]

(e) Commodities [5 marks]

(iv) Alternative investment has matured over the last 30 years and is gradually becoming part of the mainstream financial industry, garnering greater attention and acceptance from both regulators and the general public. However, it is also entering a period of considerable growth and change due to the influence of macroeconomic drivers, post-crisis financial industry regulation, and two critical industry trends: the increasing sophistication of institutional investors and the rise of retail investors as an important source of capital.

Explain how the above factors have impacted on any three of the above alternative investments. [10 marks]

(v) Consider an option on a non-dividend-paying stock when the stock price is K500, the exercise price is K490, the continuously compounded risk-free rate of interest is 5% per annum, the volatility is 25% per annum, and the time to maturity is six months.

(a) State any four assumptions underlying the Black-Scholes formula for pricing options. [2 marks]

The Black-Scholes formula for a call and put option on a non-dividend paying security is

$c_t = S_t \times \Phi(d_1) - K \times (\exp(-r \times (T-t))) \times \Phi(d_2)$
$p_t = K \times (\exp(-r \times (T-t))) \times \Phi(-d_2) - S_t \times \Phi(-d_1)$

where $d_1 = \{\ln(S_t/K) + (r + (\frac{1}{2}\sigma^2)) \times (T-t)\} / (\sigma \times \sqrt{(T-t)})$
$d_2 = d_1 - (\sigma \times \sqrt{(T-t)})$
and
S_t = current price
σ = volatility
$T - t$ = time to expiry
K = strike price
r = risk free rate

(b) Calculate the price of the option using the Black-Scholes formula, if the option is a European call. [6 marks]

Question Two **[Total 25 Marks]**

(i) Over the next two years, a particular equity, currently priced at K700, will pay two cash dividends: interim one of K15 in three months and then a final dividend in nine months of K25, next year's dividends are expected to be 15% and 25% higher respectively. The one-year risk-free rate is 14%, continuously compounded.

Given that: $K = (S_0 - I)e^{rT}$

(a) Draw a clearly labelled time lime for this transaction. [3 marks]

(b) Calculate the forward price of this contract over a one-year horizon. [5 marks]

(ii) A chooser option is an option where, after a specified period of time, the holder can choose whether the option is a call or a put.

A chooser option is written on an underlying asset of a stock that does not pay dividends, with a price S_t at time t. The time when the choice is made is in T_1 years from the current time. The underlying option is assumed to be vanilla, with strike price K and European, with a time to

maturity in T_2 years ($T_2 > T_1$) from the current time. Let r be the risk-free interest rate and c the value of the underlying call option in time T_1 years.

(a) Outline the circumstances under which the chooser option will be profitable for exercise. [5 marks]

(b) Draw the possible payoff diagram for a chooser option given a premium of K15 and strike price of K200. [3 marks]

A company has announced that it is bidding for a large government contract and will find out whether or not it has been successful in 2 months' time.

(c) Suggest how a chooser option could be useful to a shareholder in the company. [5 marks]

(d) A non-dividend paying share is currently priced at K100 and the volatility implied by one year term to maturity option on the share is 10%. The force of interest is 5%.

Given that the Black – Scholes option price for the option is 0.46 for a strike price of 120.

Calculate the prices for the corresponding put options given the same strike prices as the call option. [4 marks]

The put-call parity relationship is given by: $c_t + Ke^{-r(T-t)} = p_t + S_t$

Question Three **[Total 25 Marks]**

(i) A European airline is reviewing its fuel hedging policy. It has historically used heating oil futures contracts forwards to hedge this risk.

A proposal is being made to the management board to increase fuel hedging and currency hedging to 100% of expected demand over the next 12 months using heating oil futures.

(a) Describe the differences between futures and forward contracts. [4 marks]

(b) Outline the challenges faced in trying to achieve a perfect hedge in the above cases. [4 marks]

Having reviewed the proposal, the board has queried the use of longer-dated contracts to hedge the expected exposure and the lower levels of liquidity in these contracts.

(c) Recommend, with reasons, an alternative trading strategy that could be used to address this concern. [4 marks]

The airline's main competitor has chosen not to hedge any of its fuel costs.

(d) Discuss why the competitor may have chosen this strategy. [4 marks]

(e) In light of the Covid-19 market outcomes evaluate which of the above airlines will have better performance.

(a) For the festive season, the Airline knows that it will need to purchase 820,000 gallons of fuel. Oil futures contracts are currently traded for delivery every month and the contract size is 42,000 gallons. The company therefore decides to use the December contract for hedging and takes a short position in December contracts. The futures price in March is $1.67 per gallon. The company finds that it is ready to purchase the fuel in September. It therefore closes out its futures contract on that date. The spot price and futures price on September 31 are $1.58 per gallon and $1.52 per gallon.

(i) Find the gain on futures contract. [1 mark]

(ii) Calculate the BASIS when the contract is closed out. [2 marks]

(iii) Determine the final effective price paid by the company for the oil purchased on September 31. [3 marks]

(iv) Given that for every $0.82 change in the futures price, the cash market changes by $1.00.

(v) Calculate the risk minimizing hedge for the above case. [3 marks]

Hint: you are given:

$$N_F^* = \frac{Q_S}{Q_F}\frac{\Delta S}{\Delta F}$$

Question Four **[Total 25 Marks]**

(i) Write short notes outlining the meanings and applications of the following of terms.

(a) Over the counter [4 marks]

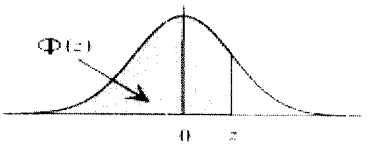
(a) Market making [3 marks]

(a) Clearing house [3 marks]

(ii) Explain how swaps arrangements can be used to manage risks in any three circumstances. Include diagrams and cashflows where possible. [15 marks]

************END OF EXAMINATION***********

TABLE 1: AREAS UNDER THE NORMAL CURVE



z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
-3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
-3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
-3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
-2.9	0.0019	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014
-2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
-2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
-2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
-2.5	0.0062	0.0060	0.0059	0.0057	0.0055	0.0054	0.0052	0.0051	0.0049	0.0048
-2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0068	0.0066	0.0064
-2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
-2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
-2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
-2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
-1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823
-1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
-1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170
-1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
-0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
-0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867
-0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
-0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
-0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
-0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
-0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
-0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
-0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998

$\alpha = 1 - \phi(z_\alpha)$

α	z_α
0.10	1.2816
0.05	1.6449
0.025	1.9600
0.010	2.3263
0.005	2.5758

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THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA/MSc Deferred / Supplementary Examinations
Tuesday 8th September 2020

MBS5012 – QUANTITATIVE METHODS FOR BUSINESS

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Mark allocations are shown in brackets
4. Special Requirements: - A non-programmable scientific calculator

Instructions to Candidates

1. This Question Paper consists of FIVE Questions each carrying 25 marks
2. Choose ANY FOUR questions
3. Start the answer to each full question on a fresh page of the answer booklet.
4. Questions may be written in any order, but must be legibly numbered.
5. Write neatly and legibly, showing ALL your workings were necessary

Statistical tables are attached at the end of this paper

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

1. (a) A woman who has won a prize is offered a lump sum of K600,000 to invest now, or K350,000 to invest at the end of this year and another K350,000 to invest at the end of the following year.

   If all investments are assumed to earn 20% *pa*, which should she choose if she intends to withdraw the money after

   (i) 6 years,

   (ii) 2 years.

   (b) A 90-day government bill was bought by an investor for K95 per K100 nominal. After 30 days the investor sold the bill to a second investor for K97.50 per K100 nominal. The second investor held the bill to maturity when it was redeemed at par.

   Determine which investor obtained the higher annual effective rate of return.

   (c) Mr Mweene is struggling to repay his loan of K400,000 with payments of K7,200 made monthly in arrears for 6 years.

   (i) Calculate the flat rate of interest per annum.

   (ii) Hence, or otherwise, calculate the APR of Mr Mweene's loan.

   After exactly one year, a loan company offers to "help" Mr Mweene by restructuring his loan with new monthly payments of K4,000 made in arrears.

   (iii) Assuming the company charges the same APR as Mr Mweene's original loan, calculate the term of the new loan.

   (iv) Calculate how much more interest in total Mr Mweene will pay on his restructured loan than on his original loan.

   (d) A businessman wishes to borrow an amount of K3 million for a term of 5 years. The agreed rate of interest is 5% per annum effective for the first 3 years, and 7% per annum effective for the final year.

   Repayments on the loan are made annually in arrears.

   The amount of the level annual repayment is **K700,103.27**.

   (i) Draw up the loan schedule for the full three-year period.

   (ii) Calculate what percentage of the loan has been repaid by the end of year 2.

   (iii) Without doing any further calculations, explain how this percentage figure would alter if the rate of interest had instead been 7% for the first three years and 5% thereafter.

2. (a) (i) State what is meant by the "conditional probability" of event A given event B.

   (ii) State Baye's theorem, given that events $B_1, B_2, \ldots, B_n$ forms a partition of a sample space S and A is any event on S

   (b) Consider an insurer that offers 2 types of policy: home insurance and car insurance. 87% of all customers have a home insurance policy, and 96% of all customers have a car insurance policy. Every customer has at least one of the two types of policies.

   Calculate the probability that a randomly selected customer

   (i) does not have a car insurance policy,

   (ii) has car insurance and home insurance,

   (iii) has home insurance, given that he has car insurance,

   (iv) does not have car insurance, given that he has home insurance.

   (c) Consider the number of days to maturity of 10 short-term investments below.

   79 62 75 68 62 73 76 81 73 61

   (i) Make a stem-and-leaf plot for the days-to-maturity data.

   (ii) Hence, or otherwise, compute the interquartile range of the data.

   (iii) Are there any outliers in the data.

   (d) In the claims department of an insurance office various quantities are computed at the end of each day's business. On Monday, 20 claims are received for a particular class of policy. The mean claim amount is calculated to be K4,500 and the standard deviation to be K2,540. On Tuesday, the claims are reviewed and one claim which was incorrectly recorded as K13,000 is now corrected to K3,000.

   Determine the mean and standard deviation of the corrected set of claims.

3. (a) Consider each of the following variables. For each one, state whether it is quantitative or qualitative. State whether the quantitative ones are continuous or discrete. State what type of scale the continuous ones are measured on. State whether the qualitative ones are nominal or ordinal.

   (i) The weight of a baby at birth, given in kilograms.

   (ii) Answers to the question "*What country were you born in?*"

   (iii) For each member of the Zambia national football team, their total number of appearances at the Africa Cup of Nations.

(b) A statistician is examining the survey methodology of a country's national statistics department. It conducts much of its data collection by telephoning individuals selected at random and asking them questions.

(i) Comment on whether this methodology will give a random sample.

(ii) Comment on whether this methodology will give a representative sample of the population.

(c) An industry survey of people in sales management positions gave the number of years of experience in sales related positions as shown below.

	Males	Females
Sample size	90	80
Mean years	25.7	22.5
Standard deviation years	8.2	3.5

(i) Perform a z-test to determine if the mean number of years for males in sales related positions is more than one year larger than that of females?

(ii) What error may have been made in the conclusion to part (i)?

(d) Consider again the data in part (c) above.

(i) Construct a 95% confidence interval for the difference of population means.

(ii) Based on this confidence interval, is the mean number of years for males in sales related positions is more than one year larger than that of females?

4. The promoter of a touring dance show wishes to analyse how the price per ticket affects the size of its audiences. She tests two prices, K150 and K200, over 10 shows each which give rise to the following attendances.

Price										
K150	117	112	127	124	121	107	118	126	115	119
K200	108	104	98	112	108	102	96	101	107	95

(a) Calculate the mean and standard deviation of the attendance for each sample.

(b) Perform a statistical test to determine whether the variances of the attendance are equal under the two prices.

(c) Perform a t-test to determine whether the mean attendance is the same under the two prices.

(d) Calculate a 95% confidence interval for the difference between the mean show revenue under each price.

(e) Without doing any further calculations, comment on which price the promoter should choose.

5. An analyst is instructed to investigate the relationship between the size of a bond issue y and its trading volumes (value traded) x. Consider the data for 7 bonds

x	10	20	30	40	50	60	70
y	5	10	23	34	40	54	75

with the following summary statistics:

$$\overline{x} = 40, \quad \overline{y} = 34.4, \quad S_{xx} = \sum x^2 - \frac{\left(\sum x\right)^2}{n} = 2,800, \quad S_{xy} = \sum xy - \frac{\left(\sum x\right)\left(\sum y\right)}{n} = 3,150$$

(a) (i) Construct a scatterplot of these data.

(ii) What does the scatter plot suggest about the relationship between x and y?

(b) A linear model of the form $y = \alpha + \beta x + \varepsilon$ is fitted to the data, where the error terms (ε) independently follow a $N(0, \sigma^2)$ distribution with the variance σ^2 being an unknown parameter.

(i) Determine the fitted line of the regression model.

(ii) Predict y when $x = 100$.

(c) A partially completed ANOVA table for this regression analysis is given below.

Source of variation	*Sums of squares*	*Degrees of freedom*	*Mean squares*	*F-value*
Regression	3,543.7	A	D	E
Error	110	B	C	
Total	3,653.7	5		

(i) Determine the missing values A, B, C, D and E in the table.

(ii) Determine an estimate of the variance σ^2 based on the above table.

(iii) Perform an F-test to test the null hypothesis that there is no linear relationship between x and y, based on the above table.

(d) (i) Dertemine the percentage of variation in y explained by x.

(ii) Calculate the coefficient of correlation and give an interpretation.

END OF PAPER

FORMULA SHEET FOR MBS5012 2019 EXAMINATION

$$\text{FV} = C(1+r)^n$$

$$\text{PV} = C(1+r)^{-n}$$

$$\text{PVA} = C\left(\frac{1-(1+r)^{-n}}{r^{(p)}}\right)$$

$$r^{(p)} = p\left[(1+r)^{1/p} - 1\right]$$

$$\frac{r - r_1}{r_2 - r_1} = \frac{C - C_1}{C_2 - C_1}$$

$$\overline{x} = \frac{\sum x}{n}$$

$$S^2 = \frac{n\sum x^2 - \left(\sum x\right)^2}{n(n-1)}$$

$$t = \frac{(\overline{x} - \overline{y}) - (\mu_1 - \mu_2)}{S_{\text{pooled}}\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$\text{CI} = \left((\overline{x} - \overline{y}) \pm t_{\frac{\alpha}{2}, n_1+n_2-2}\, S_{\text{pooled}} \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}\right)$$

$$S^2_{\text{pooled}} = \frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{n_1 + n_2 - 2}$$

$$Z = \frac{(\overline{x} - \overline{y}) - (\mu_1 - \mu_2)}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

$$\text{CI} = \left((\overline{x} - \overline{y}) \pm Z_{\frac{\alpha}{2}} \sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}\right)$$

$$\hat{y} = \hat{\alpha} + \hat{\beta}x$$

$$\hat{\alpha} = \overline{y} - \hat{\beta}\overline{x}$$

$$\hat{\beta} = \frac{S_{xy}}{S_{xx}}$$

$$S_{xx} = \sum x^2 - \frac{\left(\sum x\right)^2}{n}$$

$$S_{xy} = \sum xy - \frac{\left(\sum x\right)\left(\sum y\right)}{n}$$

$$S_{yy} = \sum y^2 - \frac{\left(\sum y\right)^2}{n}$$

$$r^2 = \frac{SSR}{SST}$$

$$F = \frac{S_1^2}{S_2^2}$$

$$F = \frac{MSR}{MSE}$$

$$Z = \frac{\overline{x} - \mu}{\sigma}$$

$$Z = \frac{\overline{x} - \mu}{\sigma/\sqrt{n}}$$

$$t = \frac{\overline{x} - \mu}{s/\sqrt{n}}$$

STANDARD NORMAL DISTRIBUTION: Table Values Represent AREA to the LEFT of the Z score.

Z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.
-3.9	.00005	.00005	.00004	.00004	.00004	.00004	.00004	.00004	.00003	.00
-3.8	.00007	.00007	.00007	.00006	.00006	.00006	.00006	.00005	.00005	.00
-3.7	.00011	.00010	.00010	.00010	.00009	.00009	.00008	.00008	.00008	.00
-3.6	.00016	.00015	.00015	.00014	.00014	.00013	.00013	.00012	.00012	.00
-3.5	.00023	.00022	.00022	.00021	.00020	.00019	.00019	.00018	.00017	.00
-3.4	.00034	.00032	.00031	.00030	.00029	.00028	.00027	.00026	.00025	.00
-3.3	.00048	.00047	.00045	.00043	.00042	.00040	.00039	.00038	.00036	.00
-3.2	.00069	.00066	.00064	.00062	.00060	.00058	.00056	.00054	.00052	.00
-3.1	.00097	.00094	.00090	.00087	.00084	.00082	.00079	.00076	.00074	.00
-3.0	.00135	.00131	.00126	.00122	.00118	.00114	.00111	.00107	.00104	.00
-2.9	.00187	.00181	.00175	.00169	.00164	.00159	.00154	.00149	.00144	.00
-2.8	.00256	.00248	.00240	.00233	.00226	.00219	.00212	.00205	.00199	.00
-2.7	.00347	.00336	.00326	.00317	.00307	.00298	.00289	.00280	.00272	.00
-2.6	.00466	.00453	.00440	.00427	.00415	.00402	.00391	.00379	.00368	.00
-2.5	.00621	.00604	.00587	.00570	.00554	.00539	.00523	.00508	.00494	.00
-2.4	.00820	.00798	.00776	.00755	.00734	.00714	.00695	.00676	.00657	.00
-2.3	.01072	.01044	.01017	.00990	.00964	.00939	.00914	.00889	.00866	.00
-2.2	.01390	.01355	.01321	.01287	.01255	.01222	.01191	.01160	.01130	.01
-2.1	.01786	.01743	.01700	.01659	.01618	.01578	.01539	.01500	.01463	.01
-2.0	.02275	.02222	.02169	.02118	.02068	.02018	.01970	.01923	.01876	.01
-1.9	.02872	.02807	.02743	.02680	.02619	.02559	.02500	.02442	.02385	.02
-1.8	.03593	.03515	.03438	.03362	.03288	.03216	.03144	.03074	.03005	.02
-1.7	.04457	.04363	.04272	.04182	.04093	.04006	.03920	.03836	.03754	.03
-1.6	.05480	.05370	.05262	.05155	.05050	.04947	.04846	.04746	.04648	.04
-1.5	.06681	.06552	.06426	.06301	.06178	.06057	.05938	.05821	.05705	.05
-1.4	.08076	.07927	.07780	.07636	.07493	.07353	.07215	.07078	.06944	.06
-1.3	.09680	.09510	.09342	.09176	.09012	.08851	.08691	.08534	.08379	.08
-1.2	.11507	.11314	.11123	.10935	.10749	.10565	.10383	.10204	.10027	.09
-1.1	.13567	.13350	.13136	.12924	.12714	.12507	.12302	.12100	.11900	.11
-1.0	.15866	.15625	.15386	.15151	.14917	.14686	.14457	.14231	.14007	.13
-0.9	.18406	.18141	.17879	.17619	.17361	.17106	.16853	.16602	.16354	.16
-0.8	.21186	.20897	.20611	.20327	.20045	.19766	.19489	.19215	.18943	.18
-0.7	.24196	.23885	.23576	.23270	.22965	.22663	.22363	.22065	.21770	.21
-0.6	.27425	.27093	.26763	.26435	.26109	.25785	.25463	.25143	.24825	.24
-0.5	.30854	.30503	.30153	.29806	.29460	.29116	.28774	.28434	.28096	.27
-0.4	.34458	.34090	.33724	.33360	.32997	.32636	.32276	.31918	.31561	.31
-0.3	.38209	.37828	.37448	.37070	.36693	.36317	.35942	.35569	.35197	.34
-0.2	.42074	.41683	.41294	.40905	.40517	.40129	.39743	.39358	.38974	.38
-0.1	.46017	.45620	.45224	.44828	.44433	.44038	.43644	.43251	.42858	.42
-0.0	.50000	.49601	.49202	.48803	.48405	.48006	.47608	.47210	.46812	.46

STANDARD NORMAL DISTRIBUTION: Table Values Represent AREA to the LEFT of the Z score.

Z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.
0.0	.50000	.50399	.50798	.51197	.51595	.51994	.52392	.52790	.53188	.53
0.1	.53983	.54380	.54776	.55172	.55567	.55962	.56356	.56749	.57142	.57
0.2	.57926	.58317	.58706	.59095	.59483	.59871	.60257	.60642	.61026	.61
0.3	.61791	.62172	.62552	.62930	.63307	.63683	.64058	.64431	.64803	.65
0.4	.65542	.65910	.66276	.66640	.67003	.67364	.67724	.68082	.68439	.68
0.5	.69146	.69497	.69847	.70194	.70540	.70884	.71226	.71566	.71904	.72
0.6	.72575	.72907	.73237	.73565	.73891	.74215	.74537	.74857	.75175	.75
0.7	.75804	.76115	.76424	.76730	.77035	.77337	.77637	.77935	.78230	.78
0.8	.78814	.79103	.79389	.79673	.79955	.80234	.80511	.80785	.81057	.81
0.9	.81594	.81859	.82121	.82381	.82639	.82894	.83147	.83398	.83646	.83
1.0	.84134	.84375	.84614	.84849	.85083	.85314	.85543	.85769	.85993	.86
1.1	.86433	.86650	.86864	.87076	.87286	.87493	.87698	.87900	.88100	.88
1.2	.88493	.88686	.88877	.89065	.89251	.89435	.89617	.89796	.89973	.90
1.3	.90320	.90490	.90658	.90824	.90988	.91149	.91309	.91466	.91621	.91
1.4	.91924	.92073	.92220	.92364	.92507	.92647	.92785	.92922	.93056	.93
1.5	.93319	.93448	.93574	.93699	.93822	.93943	.94062	.94179	.94295	.94
1.6	.94520	.94630	.94738	.94845	.94950	.95053	.95154	.95254	.95352	.95
1.7	.95543	.95637	.95728	.95818	.95907	.95994	.96080	.96164	.96246	.96
1.8	.96407	.96485	.96562	.96638	.96712	.96784	.96856	.96926	.96995	.97
1.9	.97128	.97193	.97257	.97320	.97381	.97441	.97500	.97558	.97615	.97
2.0	.97725	.97778	.97831	.97882	.97932	.97982	.98030	.98077	.98124	.98
2.1	.98214	.98257	.98300	.98341	.98382	.98422	.98461	.98500	.98537	.98
2.2	.98610	.98645	.98679	.98713	.98745	.98778	.98809	.98840	.98870	.98
2.3	.98928	.98956	.98983	.99010	.99036	.99061	.99086	.99111	.99134	.99
2.4	.99180	.99202	.99224	.99245	.99266	.99286	.99305	.99324	.99343	.99
2.5	.99379	.99396	.99413	.99430	.99446	.99461	.99477	.99492	.99506	.99
2.6	.99534	.99547	.99560	.99573	.99585	.99598	.99609	.99621	.99632	.99
2.7	.99653	.99664	.99674	.99683	.99693	.99702	.99711	.99720	.99728	.99
2.8	.99744	.99752	.99760	.99767	.99774	.99781	.99788	.99795	.99801	.99
2.9	.99813	.99819	.99825	.99831	.99836	.99841	.99846	.99851	.99856	.99
3.0	.99865	.99869	.99874	.99878	.99882	.99886	.99889	.99893	.99896	.99
3.1	.99903	.99906	.99910	.99913	.99916	.99918	.99921	.99924	.99926	.99
3.2	.99931	.99934	.99936	.99938	.99940	.99942	.99944	.99946	.99948	.99
3.3	.99952	.99953	.99955	.99957	.99958	.99960	.99961	.99962	.99964	.99
3.4	.99966	.99968	.99969	.99970	.99971	.99972	.99973	.99974	.99975	.99
3.5	.99977	.99978	.99978	.99979	.99980	.99981	.99981	.99982	.99983	.99
3.6	.99984	.99985	.99985	.99986	.99986	.99987	.99987	.99988	.99988	.99
3.7	.99989	.99990	.99990	.99990	.99991	.99991	.99992	.99992	.99992	.99
3.8	.99993	.99993	.99993	.99994	.99994	.99994	.99994	.99995	.99995	.99
3.9	.99995	.99995	.99996	.99996	.99996	.99996	.99996	.99996	.99997	.99

Table entry for p is the critical value F^* with probability p lying to its right.

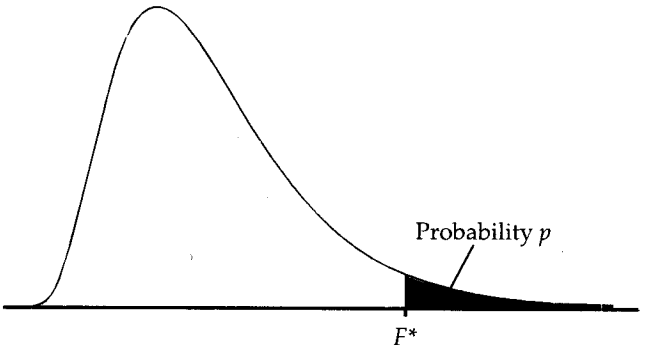


TABLE E

F critical values

Degrees of freedom in the denominator	p	Degrees of freedom in the numerator: 1	2	3	4	5	6	7	8	9
1	.100	39.86	49.50	53.59	55.83	57.24	58.20	58.91	59.44	59.86
	.050	161.45	199.50	215.71	224.58	230.16	233.99	236.77	238.88	240.54
	.025	647.79	799.50	864.16	899.58	921.85	937.11	948.22	956.66	963.28
	.010	4052.2	4999.5	5403.4	5624.6	5763.6	5859.0	5928.4	5981.1	6022.5
	.001	405284	500000	540379	562500	576405	585937	592873	598144	602284
2	.100	8.53	9.00	9.16	9.24	9.29	9.33	9.35	9.37	9.38
	.050	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38
	.025	38.51	39.00	39.17	39.25	39.30	39.33	39.36	39.37	39.39
	.010	98.50	99.00	99.17	99.25	99.30	99.33	99.36	99.37	99.39
	.001	998.50	999.00	999.17	999.25	999.30	999.33	999.36	999.37	999.39
3	.100	5.54	5.46	5.39	5.34	5.31	5.28	5.27	5.25	5.24
	.050	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81
	.025	17.44	16.04	15.44	15.10	14.88	14.73	14.62	14.54	14.47
	.010	34.12	30.82	29.46	28.71	28.24	27.91	27.67	27.49	27.35
	.001	167.03	148.50	141.11	137.10	134.58	132.85	131.58	130.62	129.86
4	.100	4.54	4.32	4.19	4.11	4.05	4.01	3.98	3.95	3.94
	.050	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00
	.025	12.22	10.65	9.98	9.60	9.36	9.20	9.07	8.98	8.90
	.010	21.20	18.00	16.69	15.98	15.52	15.21	14.98	14.80	14.66
	.001	74.14	61.25	56.18	53.44	51.71	50.53	49.66	49.00	48.47
5	.100	4.06	3.78	3.62	3.52	3.45	3.40	3.37	3.34	3.32
	.050	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77
	.025	10.01	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68
	.010	16.26	13.27	12.06	11.39	10.97	10.67	10.46	10.29	10.16
	.001	47.18	37.12	33.20	31.09	29.75	28.83	28.16	27.65	27.24
6	.100	3.78	3.46	3.29	3.18	3.11	3.05	3.01	2.98	2.96
	.050	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10
	.025	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52
	.010	13.75	10.92	9.78	9.15	8.75	8.47	8.26	8.10	7.98
	.001	35.51	27.00	23.70	21.92	20.80	20.03	19.46	19.03	18.69
7	.100	3.59	3.26	3.07	2.96	2.88	2.83	2.78	2.75	2.72
	.050	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68
	.025	8.07	6.54	5.89	5.52	5.29	5.12	4.99	4.90	4.82
	.010	12.25	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72
	.001	29.25	21.69	18.77	17.20	16.21	15.52	15.02	14.63	14.33

t Table

cum. prob	$t_{.50}$	$t_{.75}$	$t_{.80}$	$t_{.85}$	$t_{.90}$	$t_{.95}$	$t_{.975}$	$t_{.99}$	$t_{.995}$	$t_{.999}$	$t_{.9995}$
one-tail	0.50	0.25	0.20	0.15	0.10	0.05	0.025	0.01	0.005	0.001	0.0005
two-tails	1.00	0.50	0.40	0.30	0.20	0.10	0.05	0.02	0.01	0.002	0.001
df											
1	0.000	1.000	1.376	1.963	3.078	6.314	12.71	31.82	63.66	318.31	636.62
2	0.000	0.816	1.061	1.386	1.886	2.920	4.303	6.965	9.925	22.327	31.599
3	0.000	0.765	0.978	1.250	1.638	2.353	3.182	4.541	5.841	10.215	12.924
4	0.000	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	0.000	0.727	0.920	1.156	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	0.000	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	0.000	0.711	0.896	1.119	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	0.000	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	0.000	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.250	4.297	4.781
10	0.000	0.700	0.879	1.093	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	0.000	0.697	0.876	1.088	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	0.000	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	0.000	0.694	0.870	1.079	1.350	1.771	2.160	2.650	3.012	3.852	4.221
14	0.000	0.692	0.868	1.076	1.345	1.761	2.145	2.624	2.977	3.787	4.140
15	0.000	0.691	0.866	1.074	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	0.000	0.690	0.865	1.071	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	0.000	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	0.000	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.878	3.610	3.922
19	0.000	0.688	0.861	1.066	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	0.000	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.845	3.552	3.850
21	0.000	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831	3.527	3.819
22	0.000	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819	3.505	3.792
23	0.000	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807	3.485	3.768
24	0.000	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797	3.467	3.745
25	0.000	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787	3.450	3.725
26	0.000	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779	3.435	3.707
27	0.000	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771	3.421	3.690
28	0.000	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763	3.408	3.674
29	0.000	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756	3.396	3.659
30	0.000	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750	3.385	3.646
40	0.000	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704	3.307	3.551
60	0.000	0.679	0.848	1.045	1.296	1.671	2.000	2.390	2.660	3.232	3.460
80	0.000	0.678	0.846	1.043	1.292	1.664	1.990	2.374	2.639	3.195	3.416
100	0.000	0.677	0.845	1.042	1.290	1.660	1.984	2.364	2.626	3.174	3.390
1000	0.000	0.675	0.842	1.037	1.282	1.646	1.962	2.330	2.581	3.098	3.300
z	0.000	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576	3.090	3.291
	0%	50%	60%	70%	80%	90%	95%	98%	99%	99.8%	99.9%
	Confidence Level										

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA/MSc Sessional Examination
Thursday 10th December 2020

MBS5012 – QUANTITATIVE METHODS FOR BUSINESS

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Mark allocations are shown in brackets
4. Special Requirements: - A non-programmable scientific calculator

Instructions to Candidates

1. This Question Paper consists of FOUR questions each carrying 25 marks.
2. Answer ALL FOUR questions.
3. Start the answer to each full question on a fresh page of the answer booklet.
4. Questions may be written in any order, but must be legibly numbered.
5. Write neatly and legibly, showing ALL your workings were necessary.

Statistical tables and a formula sheet are attached at the end of this paper

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

1. (a) A company's directors have decided to provide senior managers with a performance bonus scheme. The bonus scheme entitles the managers to a cash payment of K300,000 should the company share price have increased by more than 18% at the end of the next 6 months. In addition, the managers will be entitled to 6,000 free shares each, should the share price have increased by more than 12% at the end of the next 6 months. You are given the following data:

Current share price	K94.50
Continuously-compounded risk-free rate	4% pa
Share price volatility	22% pa

No dividends to be paid over the next 6 months.

(i) Explain three disadvantages of this bonus scheme as an incentive for managers to perform.

(ii) Some shareholders are concerned that this scheme might cause an undesirable distortion to the managers' behaviour.

Suggest three modifications to the scheme that will ensure that the managers' aims coincide with the long-term objectives of the shareholders.

(b) Dr Musonda is struggling to repay his loan of K600,000 with payments of K12,800 made monthly in arrears for 5 years.

After exactly one year, a loan company offers to "help" Dr Musonda by restructuring his loan with new monthly payments of K9,000 made in arrears.

(i) Assuming the company charges the same APR as Dr Musonda's original loan, calculate the term of the new loan.

(ii) Calculate how much more interest in total Dr Musonda will pay on his restructured loan than on his original loan.

(c) A businessman wishes to borrow an amount of K4 million for a term of 3 years. The agreed rate of interest is 10% per annum effective for the first 2 years, and 6% per annum effective for the final year.

Repayments on the loan are made annually in arrears.

The amount of the level annual repayment is **K1,590,328.58**.

(i) Draw up the loan schedule for the full three-year period.

(ii) Calculate what percentage of the loan has been repaid by the end of year 2.

(iii) Explain how this percentage figure would alter if the rate of interest had instead been 6% for the first two years and 10% for the final year.

2. (a) Consider an insurer that offers 2 types of policy: home insurance and car insurance. 20% of all customers have a home insurance policy, and 92% of all customers have a car insurance policy. Every customer has at least one of the two types of policies.

   Calculate the probability that a randomly selected customer

   (i) has home insurance, given that he has car insurance,

   (ii) does not have car insurance, given that he has home insurance.

   (b) Consider the number of days to maturity of 10 short-term investments below:

   85 77 88 78 65 78 57 81 36 90

   (i) Make a stem-and-leaf plot for the days-to-maturity data.

   (ii) Hence, or otherwise, compute the interquartile range of the data.

   (iii) Are there any outliers in the data.

   (c) An insurance company has a portfolio of 12,000 policies. Based on past data, the company estimates that the probability of a claim on any one policy in a year is 0.0045. It assumes no policy will generate more than one claim in a year.

   (i) Determine the approximate probability of more than 64 claims from the portfolio of 12,000 policies in a year.

   (ii) Determine an approximate equal-tailed interval into which the number of claims per year will fall with probability 0.95.

   (iii) In practice 70 claims were received in a particular year. A Director of the company complains about the range of estimates in part (ii) being wrong. Comment on the Director's complaint.

3. The promoter of a touring dance show wishes to analyse how the price per ticket affects the size of its audiences. She tests two prices, K170 and K200, over 10 shows each which give rise to the following attendances.

Price										
K170	115	110	125	120	120	105	115	125	115	120
K200	105	100	95	110	105	100	95	100	105	93

   (a) Calculate the mean and standard deviation of the attendance for each sample.

   (b) Perform a statistical test to determine whether the variances of the attendance are equal under the two prices.

(c) Perform a t-test to determine whether the mean attendance is the same under the two prices. (7

(d) Calculate a 95% confidence interval for the difference between the mean show revenue under each price. (5

(e) Without doing any further calculations, comment on which price the promoter should choose. (3

4. A quant is instructed to investigate the relationship between the size of a bond issue y and its trading volumes (value traded) x. Consider the data for 7 bonds:

x	20	30	40	50	60	70	80
y	10	12	30	40	48	60	75

(a) (i) Construct a scatterplot of these data. (2

(ii) What does the scatter plot suggest about the relationship between x and y? (2

(b) A linear model of the form $y = \alpha + \beta x + \varepsilon$ is fitted to the data, where the error terms (ε) independently follow a $N(0, \sigma^2)$ distribution with the variance σ^2 being an unknown parameter.

(i) Determine the fitted line of the regression model. (4

(ii) Predict y when $x = 250$. (1

(c) A partially completed ANOVA table for this regression analysis is given below.

Source of variation	*Sums of squares*	*Degrees of freedom*	*Mean squares*	*F-value*
Regression	3,410	A	D	E
Error	59	B	C	
Total	3,469	6		

(i) Determine the missing values A, B, C, D and E in the table. (5

(ii) Determine an estimate of the variance σ^2 based on the above table. (1

(iii) Perform an F-test to test the null hypothesis that there is no linear relationship between x and y, based on the above table. (6

(d) (i) Dertemine the percentage of variation in y explained by x. (2

(ii) Calculate the coefficient of correlation and give an interpretation. (2

END OF PAPER

FORMULA SHEET FOR MBS5012 2020 EXAMINATION

$$\text{FV} = C(1+r)^n$$

$$\text{PV} = C(1+r)^{-n}$$

$$\text{PVA} = C\left(\frac{1-(1+r)^{-n}}{r^{(p)}}\right)$$

$$r^{(p)} = p\left[(1+r)^{1/p} - 1\right]$$

$$\frac{r - r_1}{r_2 - r_1} = \frac{C - C_1}{C_2 - C_1}$$

$$\overline{x} = \frac{\sum x}{n}$$

$$S^2 = \frac{n\sum x^2 - \left(\sum x\right)^2}{n(n-1)}$$

$$t = \frac{(\overline{x} - \overline{y}) - (\mu_1 - \mu_2)}{S_{\text{pooled}}\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$\text{CI} = \left((\overline{x} - \overline{y}) \pm t_{\frac{\alpha}{2}, n_1+n_2-2}\, S_{\text{pooled}} \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}\right)$$

$$S^2_{\text{pooled}} = \frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{n_1 + n_2 - 2}$$

$$Z = \frac{(\overline{x} - \overline{y}) - (\mu_1 - \mu_2)}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

$$\text{CI} = \left((\overline{x} - \overline{y}) \pm Z_{\frac{\alpha}{2}} \sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}\right)$$

$$\hat{y} = \hat{\alpha} + \hat{\beta}x$$

$$\hat{\alpha} = \overline{y} - \hat{\beta}\overline{x}$$

$$\hat{\beta} = \frac{S_{xy}}{S_{xx}}$$

$$S_{xx} = \sum x^2 - \frac{\left(\sum x\right)^2}{n}$$

$$S_{xy} = \sum xy - \frac{\left(\sum x\right)\left(\sum y\right)}{n}$$

$$S_{yy} = \sum y^2 - \frac{\left(\sum y\right)^2}{n}$$

$$r^2 = \frac{SSR}{SST}$$

$$F = \frac{S_1^2}{S_2^2}$$

$$F = \frac{MSR}{MSE}$$

$$Z = \frac{\overline{x} - \mu}{\sigma}$$

$$Z = \frac{\overline{x} - \mu}{\sigma/\sqrt{n}}$$

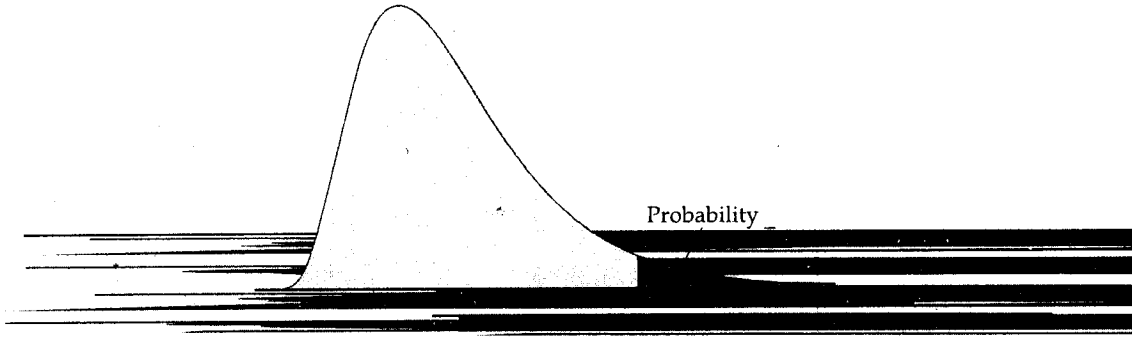
$$t = \frac{\overline{x} - \mu}{s/\sqrt{n}}$$

STANDARD NORMAL DISTRIBUTION: Table Values Represent AREA to the LEFT of the Z score.

Z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.0
-3.9	.00005	.00005	.00004	.00004	.00004	.00004	.00004	.00004	.00003	.00
-3.8	.00007	.00007	.00007	.00006	.00006	.00006	.00006	.00005	.00005	.00
-3.7	.00011	.00010	.00010	.00010	.00009	.00009	.00008	.00008	.00008	.00
-3.6	.00016	.00015	.00015	.00014	.00014	.00013	.00013	.00012	.00012	.00
-3.5	.00023	.00022	.00022	.00021	.00020	.00019	.00019	.00018	.00017	.00
-3.4	.00034	.00032	.00031	.00030	.00029	.00028	.00027	.00026	.00025	.00
-3.3	.00048	.00047	.00045	.00043	.00042	.00040	.00039	.00038	.00036	.00
-3.2	.00069	.00066	.00064	.00062	.00060	.00058	.00056	.00054	.00052	.00
-3.1	.00097	.00094	.00090	.00087	.00084	.00082	.00079	.00076	.00074	.00
-3.0	.00135	.00131	.00126	.00122	.00118	.00114	.00111	.00107	.00104	.0
-2.9	.00187	.00181	.00175	.00169	.00164	.00159	.00154	.00149	.00144	.00
-2.8	.00256	.00248	.00240	.00233	.00226	.00219	.00212	.00205	.00199	.00
-2.7	.00347	.00336	.00326	.00317	.00307	.00298	.00289	.00280	.00272	.00
-2.6	.00466	.00453	.00440	.00427	.00415	.00402	.00391	.00379	.00368	.00
-2.5	.00621	.00604	.00587	.00570	.00554	.00539	.00523	.00508	.00494	.00
-2.4	.00820	.00798	.00776	.00755	.00734	.00714	.00695	.00676	.00657	.00
-2.3	.01072	.01044	.01017	.00990	.00964	.00939	.00914	.00889	.00866	.00
-2.2	.01390	.01355	.01321	.01287	.01255	.01222	.01191	.01160	.01130	.01
-2.1	.01786	.01743	.01700	.01659	.01618	.01578	.01539	.01500	.01463	.01
-2.0	.02275	.02222	.02169	.02118	.02068	.02018	.01970	.01923	.01876	.01
-1.9	.02872	.02807	.02743	.02680	.02619	.02559	.02500	.02442	.02385	.02
-1.8	.03593	.03515	.03438	.03362	.03288	.03216	.03144	.03074	.03005	.02
-1.7	.04457	.04363	.04272	.04182	.04093	.04006	.03920	.03836	.03754	.03
-1.6	.05480	.05370	.05262	.05155	.05050	.04947	.04846	.04746	.04648	.04
-1.5	.06681	.06552	.06426	.06301	.06178	.06057	.05938	.05821	.05705	.05
-1.4	.08076	.07927	.07780	.07636	.07493	.07353	.07215	.07078	.06944	.06
-1.3	.09680	.09510	.09342	.09176	.09012	.08851	.08691	.08534	.08379	.08
-1.2	.11507	.11314	.11123	.10935	.10749	.10565	.10383	.10204	.10027	.0
-1.1	.13567	.13350	.13136	.12924	.12714	.12507	.12302	.12100	.11900	.11
-1.0	.15866	.15625	.15386	.15151	.14917	.14686	.14457	.14231	.14007	.13
-0.9	.18406	.18141	.17879	.17619	.17361	.17106	.16853	.16602	.16354	.16
-0.8	.21186	.20897	.20611	.20327	.20045	.19766	.19489	.19215	.18943	.18
-0.7	.24196	.23885	.23576	.23270	.22965	.22663	.22363	.22065	.21770	.21
-0.6	.27425	.27093	.26763	.26435	.26109	.25785	.25463	.25143	.24825	.24
-0.5	.30854	.30503	.30153	.29806	.29460	.29116	.28774	.28434	.28096	.27
-0.4	.34458	.34090	.33724	.33360	.32997	.32636	.32276	.31918	.31561	.31
-0.3	.38209	.37828	.37448	.37070	.36693	.36317	.35942	.35569	.35197	.34
-0.2	.42074	.41683	.41294	.40905	.40517	.40129	.39743	.39358	.38974	.38
-0.1	.46017	.45620	.45224	.44828	.44433	.44038	.43644	.43251	.42858	.42
-0.0	.50000	.49601	.49202	.48803	.48405	.48006	.47608	.47210	.46812	.46

STANDARD NORMAL DISTRIBUTION: Table Values Represent AREA to the LEFT of the Z score.

Z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.
0.0	.50000	.50399	.50798	.51197	.51595	.51994	.52392	.52790	.53188	.53
0.1	.53983	.54380	.54776	.55172	.55567	.55962	.56356	.56749	.57142	.57
0.2	.57926	.58317	.58706	.59095	.59483	.59871	.60257	.60642	.61026	.61
0.3	.61791	.62172	.62552	.62930	.63307	.63683	.64058	.64431	.64803	.65
0.4	.65542	.65910	.66276	.66640	.67003	.67364	.67724	.68082	.68439	.68
0.5	.69146	.69497	.69847	.70194	.70540	.70884	.71226	.71566	.71904	.72
0.6	.72575	.72907	.73237	.73565	.73891	.74215	.74537	.74857	.75175	.75
0.7	.75804	.76115	.76424	.76730	.77035	.77337	.77637	.77935	.78230	.78
0.8	.78814	.79103	.79389	.79673	.79955	.80234	.80511	.80785	.81057	.81
0.9	.81594	.81859	.82121	.82381	.82639	.82894	.83147	.83398	.83646	.83
1.0	.84134	.84375	.84614	.84849	.85083	.85314	.85543	.85769	.85993	.86
1.1	.86433	.86650	.86864	.87076	.87286	.87493	.87698	.87900	.88100	.88
1.2	.88493	.88686	.88877	.89065	.89251	.89435	.89617	.89796	.89973	.90
1.3	.90320	.90490	.90658	.90824	.90988	.91149	.91309	.91466	.91621	.91
1.4	.91924	.92073	.92220	.92364	.92507	.92647	.92785	.92922	.93056	.93
1.5	.93319	.93448	.93574	.93699	.93822	.93943	.94062	.94179	.94295	.94
1.6	.94520	.94630	.94738	.94845	.94950	.95053	.95154	.95254	.95352	.95
1.7	.95543	.95637	.95728	.95818	.95907	.95994	.96080	.96164	.96246	.96
1.8	.96407	.96485	.96562	.96638	.96712	.96784	.96856	.96926	.96995	.97
1.9	.97128	.97193	.97257	.97320	.97381	.97441	.97500	.97558	.97615	.97
2.0	.97725	.97778	.97831	.97882	.97932	.97982	.98030	.98077	.98124	.98
2.1	.98214	.98257	.98300	.98341	.98382	.98422	.98461	.98500	.98537	.98
2.2	.98610	.98645	.98679	.98713	.98745	.98778	.98809	.98840	.98870	.98
2.3	.98928	.98956	.98983	.99010	.99036	.99061	.99086	.99111	.99134	.99
2.4	.99180	.99202	.99224	.99245	.99266	.99286	.99305	.99324	.99343	.99
2.5	.99379	.99396	.99413	.99430	.99446	.99461	.99477	.99492	.99506	.99
2.6	.99534	.99547	.99560	.99573	.99585	.99598	.99609	.99621	.99632	.99
2.7	.99653	.99664	.99674	.99683	.99693	.99702	.99711	.99720	.99728	.99
2.8	.99744	.99752	.99760	.99767	.99774	.99781	.99788	.99795	.99801	.99
2.9	.99813	.99819	.99825	.99831	.99836	.99841	.99846	.99851	.99856	.99
3.0	.99865	.99869	.99874	.99878	.99882	.99886	.99889	.99893	.99896	.99
3.1	.99903	.99906	.99910	.99913	.99916	.99918	.99921	.99924	.99926	.99
3.2	.99931	.99934	.99936	.99938	.99940	.99942	.99944	.99946	.99948	.99
3.3	.99952	.99953	.99955	.99957	.99958	.99960	.99961	.99962	.99964	.99
3.4	.99966	.99968	.99969	.99970	.99971	.99972	.99973	.99974	.99975	.99
3.5	.99977	.99978	.99978	.99979	.99980	.99981	.99981	.99982	.99983	.99
3.6	.99984	.99985	.99985	.99986	.99986	.99987	.99987	.99988	.99988	.99
3.7	.99989	.99990	.99990	.99990	.99991	.99991	.99992	.99992	.99992	.99
3.8	.99993	.99993	.99993	.99994	.99994	.99994	.99994	.99995	.99995	.99
3.9	.99995	.99995	.99996	.99996	.99996	.99996	.99996	.99996	.99997	.99



Degrees of freedom in the denominator	p	Degrees of freedom in the numerator: 1	2	3	4	5	6	7	8	9
1	.100	39.86	49.50	53.59	55.83	57.24	58.20	58.91	59.44	59.86
	.050	161.45	199.50	215.71	224.58	230.16	233.99	236.77	238.88	240.54
	.025	647.79	799.50	864.16	899.58	921.85	937.11	948.22	956.66	963.28
	.010	4052.2	4999.5	5403.4	5624.6	5763.6	5859.0	5928.4	5981.1	6022.5
	.001	405284	500000	540379	562500	576405	585937	592873	598144	602284
2	.100	8.53	9.00	9.16	9.24	9.29	9.33	9.35	9.37	9.38
	.050	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38
	.025	38.51	39.00	39.17	39.25	39.30	39.33	39.36	39.37	39.39
	.010	98.50	99.00	99.17	99.25	99.30	99.33	99.36	99.37	99.39
	.001	998.50	999.00	999.17	999.25	999.30	999.33	999.36	999.37	999.39
3	.100	5.54	5.46	5.39	5.34	5.31	5.28	5.27	5.25	5.24
	.050	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81
	.025	17.44	16.04	15.44	15.10	14.88	14.73	14.62	14.54	14.47
	.010	34.12	30.82	29.46	28.71	28.24	27.91	27.67	27.49	27.35
	.001	167.03	148.50	141.11	137.10	134.58	132.85	131.58	130.62	129.86
4	.100	4.54	4.32	4.19	4.11	4.05	4.01	3.98	3.95	3.94
	.050	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00
	.025	12.22	10.65	9.98	9.60	9.36	9.20	9.07	8.98	8.90
	.010	21.20	18.00	16.69	15.98	15.52	15.21	14.98	14.80	14.66
	.001	74.14	61.25	56.18	53.44	51.71	50.53	49.66	49.00	48.47
5	.100	4.06	3.78	3.62	3.52	3.45	3.40	3.37	3.34	3.32
	.050	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77
	.025	10.01	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68
	.010	16.26	13.27	12.06	11.39	10.97	10.67	10.46	10.29	10.16
	.001	47.18	37.12	33.20	31.09	29.75	28.83	28.16	27.65	27.24
6	.100	3.78	3.46	3.29	3.18	3.11	3.05	3.01	2.98	2.96
	.050	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10
	.025	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52
	.010	13.75	10.92	9.78	9.15	8.75	8.47	8.26	8.10	7.98
	.001	35.51	27.00	23.70	21.92	20.80	20.03	19.46	19.03	18.69
7	.100	3.59	3.26	3.07	2.96	2.88	2.83	2.78	2.75	2.72
	.050	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68
	.025	8.07	6.54	5.89	5.52	5.29	5.12	4.99	4.90	4.82
	.010	12.25	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72
	.001	29.25	21.69	18.77	17.20	16.21	15.52	15.02	14.63	14.33

(continued)

Degrees of freedom in the denominator		Degrees of freedom in the numerator								
	p	1	2	3	4	5	6	7	8	9
8	.100	3.46	3.11	2.92	2.81	2.73	2.67	2.62	2.59	2.56
	.050	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39
	.025	7.57	6.06	5.42	5.05	4.82	4.65	4.53	4.43	4.36
	.010	11.26	8.65	7.59	7.01	6.63	6.37	6.18	6.03	5.91
	.001	25.41	18.49	15.83	14.39	13.48	12.86	12.40	12.05	11.77
9	.100	3.36	3.01	2.81	2.69	2.61	2.55	2.51	2.47	2.44
	.050	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18
	.025	7.21	5.71	5.08	4.72	4.48	4.32	4.20	4.10	4.03
	.010	10.56	8.02	6.99	6.42	6.06	5.80	5.61	5.47	5.35
	.001	22.86	16.39	13.90	12.56	11.71	11.13	10.70	10.37	10.11
10	.100	3.29	2.92	2.73	2.61	2.52	2.46	2.41	2.38	2.35
	.050	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02
	.025	6.94	5.46	4.83	4.47	4.24	4.07	3.95	3.85	3.78
	.010	10.04	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94
	.001	21.04	14.91	12.55	11.28	10.48	9.93	9.52	9.20	8.96
11	.100	3.23	2.86	2.66	2.54	2.45	2.39	2.34	2.30	2.27
	.050	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90
	.025	6.72	5.26	4.63	4.28	4.04	3.88	3.76	3.66	3.59
	.010	9.65	7.21	6.22	5.67	5.32	5.07	4.89	4.74	4.63
	.001	19.69	13.81	11.56	10.35	9.58	9.05	8.66	8.35	8.12
12	.100	3.18	2.81	2.61	2.48	2.39	2.33	2.28	2.24	2.21
	.050	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80
	.025	6.55	5.10	4.47	4.12	3.89	3.73	3.61	3.51	3.44
	.010	9.33	6.93	5.95	5.41	5.06	4.82	4.64	4.50	4.39
	.001	18.64	12.97	10.80	9.63	8.89	8.38	8.00	7.71	7.48
13	.100	3.14	2.76	2.56	2.43	2.35	2.28	2.23	2.20	2.16
	.050	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71
	.025	6.41	4.97	4.35	4.00	3.77	3.60	3.48	3.39	3.31
	.010	9.07	6.70	5.74	5.21	4.86	4.62	4.44	4.30	4.19
	.001	17.82	12.31	10.21	9.07	8.35	7.86	7.49	7.21	6.98
14	.100	3.10	2.73	2.52	2.39	2.31	2.24	2.19	2.15	2.12
	.050	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65
	.025	6.30	4.86	4.24	3.89	3.66	3.50	3.38	3.29	3.21
	.010	8.86	6.51	5.56	5.04	4.69	4.46	4.28	4.14	4.03
	.001	17.14	11.78	9.73	8.62	7.92	7.44	7.08	6.80	6.58
15	.100	3.07	2.70	2.49	2.36	2.27	2.21	2.16	2.12	2.09
	.050	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59
	.025	6.20	4.77	4.15	3.80	3.58	3.41	3.29	3.20	3.12
	.010	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.89
	.001	16.59	11.34	9.34	8.25	7.57	7.09	6.74	6.47	6.26
16	.100	3.05	2.67	2.46	2.33	2.24	2.18	2.13	2.09	2.06
	.050	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54
	.025	6.12	4.69	4.08	3.73	3.50	3.34	3.22	3.12	3.05
	.010	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78
	.001	16.12	10.97	9.01	7.94	7.27	6.80	6.46	6.19	5.98
17	.100	3.03	2.64	2.44	2.31	2.22	2.15	2.10	2.06	2.03
	.050	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49
	.025	6.04	4.62	4.01	3.66	3.44	3.28	3.16	3.06	2.98
	.010	8.40	6.11	5.19	4.67	4.34	4.10	3.93	3.79	3.68
	.001	15.72	10.66	8.73	7.68	7.02	6.56	6.22	5.96	5.75

t Table

cum. prob	$t_{.50}$	$t_{.75}$	$t_{.80}$	$t_{.85}$	$t_{.90}$	$t_{.95}$	$t_{.975}$	$t_{.99}$	$t_{.995}$	$t_{.999}$	$t_{.9995}$
one-tail	0.50	0.25	0.20	0.15	0.10	0.05	0.025	0.01	0.005	0.001	0.0005
two-tails	1.00	0.50	0.40	0.30	0.20	0.10	0.05	0.02	0.01	0.002	0.001
df											
1	0.000	1.000	1.376	1.963	3.078	6.314	12.71	31.82	63.66	318.31	636.62
2	0.000	0.816	1.061	1.386	1.886	2.920	4.303	6.965	9.925	22.327	31.599
3	0.000	0.765	0.978	1.250	1.638	2.353	3.182	4.541	5.841	10.215	12.924
4	0.000	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	0.000	0.727	0.920	1.156	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	0.000	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	0.000	0.711	0.896	1.119	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	0.000	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	0.000	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.250	4.297	4.781
10	0.000	0.700	0.879	1.093	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	0.000	0.697	0.876	1.088	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	0.000	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	0.000	0.694	0.870	1.079	1.350	1.771	2.160	2.650	3.012	3.852	4.221
14	0.000	0.692	0.868	1.076	1.345	1.761	2.145	2.624	2.977	3.787	4.140
15	0.000	0.691	0.866	1.074	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	0.000	0.690	0.865	1.071	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	0.000	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	0.000	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.878	3.610	3.922
19	0.000	0.688	0.861	1.066	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	0.000	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.845	3.552	3.850
21	0.000	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831	3.527	3.819
22	0.000	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819	3.505	3.792
23	0.000	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807	3.485	3.768
24	0.000	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797	3.467	3.745
25	0.000	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787	3.450	3.725
26	0.000	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779	3.435	3.707
27	0.000	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771	3.421	3.690
28	0.000	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763	3.408	3.674
29	0.000	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756	3.396	3.659
30	0.000	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750	3.385	3.646
40	0.000	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704	3.307	3.551
60	0.000	0.679	0.848	1.045	1.296	1.671	2.000	2.390	2.660	3.232	3.460
80	0.000	0.678	0.846	1.043	1.292	1.664	1.990	2.374	2.639	3.195	3.416
100	0.000	0.677	0.845	1.042	1.290	1.660	1.984	2.364	2.626	3.174	3.390
1000	0.000	0.675	0.842	1.037	1.282	1.646	1.962	2.330	2.581	3.098	3.300
z	0.000	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576	3.090	3.291
	0%	50%	60%	70%	80%	90%	95%	98%	99%	99.8%	99.9%
	Confidence Level										

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA/MSc Sessional Examination
Thursday 23rd September 2021

MBS5012 – QUANTITATIVE METHODS FOR BUSINESS

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Mark allocations are shown in brackets
4. Special Requirements: - A non-programmable scientific calculator

Instructions to Candidates

1. This Question Paper consists of FOUR questions each carrying 25 marks.
2. Answer ALL FOUR questions.
3. Start the answer to each full question on a fresh page of the answer booklet.
4. Questions may be written in any order, but must be legibly numbered.
5. Write neatly and legibly, showing ALL your workings were necessary.

Statistical tables and a formula sheet are attached at the end of this paper

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

1. (a) A woman who has won a prize is offered a lump sum of K1,700,000 to invest now, or K900,000 to invest at the end of this year and another K900,000 to invest at the end of the following year.

   If all investments are assumed to earn an effective interest rate of 10% per annum, which should she choose if she intends to withdraw the money after

   (i) 7 years

   (ii) 3 years **(3)**

   (b) A 90-day government bill was bought by an investor for K92 per K100 nominal. After 30 days the investor sold the bill to a second investor for K94.90 per K100 nominal. The second investor held the bill to maturity when it was redeemed at par.

   Determine which investor obtained the higher annual effective rate of return. **(3)**

   (c) Mr Mweene is struggling to repay his loan of K300,000 with payments of K6,400 made monthly in arrears for 5 years.

   (i) Calculate the flat rate of interest per annum. **(2)**

   (ii) Hence, or otherwise, calculate the APR of Mr Mweene's loan. **(3)**

   After exactly one year, a loan company offers to "help" Mr Mweene by restructuring his loan with new monthly payments of K3,500 made in arrears.

   (iii) Assuming the company charges the same APR as Mr Mweene's original loan, calculate the term of the new loan. **(4)**

   (iv) Calculate how much more interest in total Mr Mweene will pay on his restructured loan than on his original loan. **(2)**

   (d) A businessman wishes to borrow an amount of K2 million for a term of 3 years. The agreed rate of interest is 9% per annum effective for the first 2 years, and 7% per annum effective for the final year.

   Repayments on the loan are made annually in arrears.

   The amount of the level annual repayment is **K785,629.89**.

   (i) Draw up the loan schedule for the full three-year period. **(5)**

   (ii) Calculate what percentage of the loan has been repaid by the end of year 2. **(1)**

   (iii) Without doing any further calculations, explain how this percentage figure would alter if the rate of interest had instead been 7% for the first three years and 9% for the final year. **(2)**

2. (a) (i) State what is meant by the "conditional probability" of event A given event B. (2)

   (ii) State Baye's theorem, given that events $B_1, B_2, \ldots, B_n$ forms a partition of a sample space S and A is any event on S (2)

   (b) Consider an insurer that offers 2 types of policy: home insurance and car insurance. 50% of all customers have a home insurance policy, and 70% of all customers have a car insurance policy. Every customer has at least one of the two types of policies.

   Calculate the probability that a randomly selected customer

   (i) has home insurance, given that he has car insurance, (4)

   (ii) does not have car insurance, given that he has home insurance. (4)

   (c) The random variable X has probability function

$$\mathrm{P}(X = x) = \begin{cases} kx, & x = 1, 2, 3, \\ k(x+1), & x = 4, 5, \end{cases}$$

   where k is a constant.

   (i) Find the value of k. (2)

   (ii) Find the exact value of $\mathrm{E}(X)$. (2)

   (iii) Find, to 1 decimal place, $\mathrm{Var}(4 - 3X)$. (4)

   (d) In the claims department of an insurance office various quantities are computed at the end of each day's business. On Monday, 10 claims are received for a particular class of policy. The mean claim amount is calculated to be K4,000 and the standard deviation to be K500.

   On Tuesday it is found that one of Monday's claims for K6,000, was classified wrongly and it is removed from the set of 10 claims. Calculate the resulting mean and standard deviation of the reduced set of 9 claims. (5)

3. The promoter of a touring dance show wishes to analyse how the price per ticket affects the size of its audiences. She tests two prices, K130 and K150, over 5 shows each which give rise to the following attendances.

Price					
K130	110	121	129	118	122
K150	105	99	104	110	98

(a) Calculate the mean and standard deviation of the attendance for each sample. (4)

(b) Perform a statistical test to determine whether the variances of the attendance are equal under the two prices. (6)

(c) Perform a t-test to determine whether the mean attendance is the same under the two prices. (7)

(d) Calculate a 95% confidence interval for the difference between the mean show revenue under each price. (5)

(e) Without doing any further calculations, comment on which price the promoter should choose. (3)

4. Consider the pairs of measurements

x	5	3	−1	2	7	6	4
y	4	3	0	1	8	5	3

with the following summary statistics:

$$\overline{x} = 3.71, \quad \overline{y} = 3.43, \quad S_{xx} = \sum x^2 - \frac{\left(\sum x\right)^2}{n} = 43.43, \quad S_{xy} = \sum xy - \frac{\left(\sum x\right)\left(\sum y\right)}{n} = 39.86$$

(a) (i) Construct a scatterplot of these data. (2)

(ii) What does the scatter plot suggest about the relationship between x and y? (2)

(b) A linear model of the form $y = \alpha + \beta x + \varepsilon$ is fitted to the data, where the error terms (ε) independently follow a $N(0, \sigma^2)$ distribution with the variance σ^2 being an unknown parameter.

(i) Determine the fitted line of the regression model. (4)

(ii) Predict y when $x = 9$. (1)

(c) (i) Write down the ANOVA table. (6)

(ii) Perform an F-test to test the null hypothesis that there is no linear relationship between x and y, based on the ANOVA table. (6)

(d) (i) Dertemine the percentage of variation in y explained by x. (2)

(ii) Calculate the coefficient of correlation and give an interpretation. (2)

END OF PAPER

SOME USEFUL FORMULAE

$$\mathrm{FV} = C(1+r)^n$$

$$\mathrm{PV} = C(1+r)^{-n}$$

$$\mathrm{PVA} = C\left(\frac{1-(1+r)^{-n}}{r^{(p)}}\right)$$

$$r^{(p)} = p\left[(1+r)^{1/p} - 1\right]$$

$$\frac{r-r_1}{r_2-r_1} = \frac{C-C_1}{C_2-C_1}$$

$$\overline{x} = \frac{\sum x}{n}$$

$$S^2 = \frac{n\sum x^2 - \left(\sum x\right)^2}{n(n-1)}$$

$$\overline{x} = \frac{\sum fx}{\sum f}$$

$$t = \frac{(\overline{x}-\overline{y}) - (\mu_1-\mu_2)}{S_{\text{pooled}}\sqrt{\frac{1}{n_1}+\frac{1}{n_2}}}$$

$$\mathrm{CI} = \left((\overline{x}-\overline{y}) \pm t_{\frac{\alpha}{2},n_1+n_2-2}\, S_{\text{pooled}}\sqrt{\frac{1}{n_1}+\frac{1}{n_2}}\right)$$

$$S^2_{\text{pooled}} = \frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{n_1+n_2-2}$$

$$Z = \frac{(\overline{x}-\overline{y}) - (\mu_1-\mu_2)}{\sqrt{\frac{S_1^2}{n_1}+\frac{S_2^2}{n_2}}}$$

$$\mathrm{CI} = \left((\overline{x}-\overline{y}) \pm Z_{\frac{\alpha}{2}}\sqrt{\frac{S_1^2}{n_1}+\frac{S_2^2}{n_2}}\right)$$

$$\hat{y} = \hat{\alpha} + \hat{\beta}x$$

$$\hat{\alpha} = \overline{y} - \hat{\beta}\overline{x}$$

$$\hat{\beta} = \frac{S_{xy}}{S_{xx}}$$

$$S_{xx} = \sum x^2 - \frac{\left(\sum x\right)^2}{n}$$

$$S_{xy} = \sum xy - \frac{\left(\sum x\right)\left(\sum y\right)}{n}$$

$$S_{yy} = \sum y^2 - \frac{\left(\sum y\right)^2}{n}$$

$$r^2 = \frac{SSR}{SST}$$

$$S^2 = \frac{\sum fx^2}{\sum f} - \left(\frac{\sum fx}{\sum f}\right)^2$$

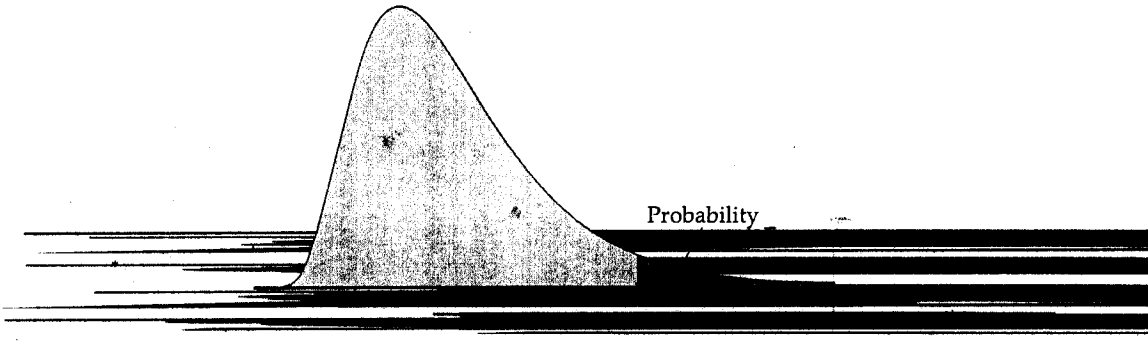
$$F = \frac{S_1^2}{S_2^2}$$

$$F = \frac{MSR}{MSE}$$

$$Z = \frac{\overline{x}-\mu}{\sigma}$$

$$Z = \frac{\overline{x}-\mu}{\sigma/\sqrt{n}}$$

$$t = \frac{\overline{x}-\mu}{s/\sqrt{n}}$$



Degrees of freedom in the denominator	p	Degrees of freedom in the numerator: 1	2	3	4	5	6	7	8	9
	.100	39.86	49.50	53.59	55.83	57.24	58.20	58.91	59.44	59.86
	.050	161.45	199.50	215.71	224.58	230.16	233.99	236.77	238.88	240.54
1	.025	647.79	799.50	864.16	899.58	921.85	937.11	948.22	956.66	963.28
	.010	4052.2	4999.5	5403.4	5624.6	5763.6	5859.0	5928.4	5981.1	6022.5
	.001	405284	500000	540379	562500	576405	585937	592873	598144	602284
	.100	8.53	9.00	9.16	9.24	9.29	9.33	9.35	9.37	9.38
	.050	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38
2	.025	38.51	39.00	39.17	39.25	39.30	39.33	39.36	39.37	39.39
	.010	98.50	99.00	99.17	99.25	99.30	99.33	99.36	99.37	99.39
	.001	998.50	999.00	999.17	999.25	999.30	999.33	999.36	999.37	999.39
	.100	5.54	5.46	5.39	5.34	5.31	5.28	5.27	5.25	5.24
	.050	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81
3	.025	17.44	16.04	15.44	15.10	14.88	14.73	14.62	14.54	14.47
	.010	34.12	30.82	29.46	28.71	28.24	27.91	27.67	27.49	27.35
	.001	167.03	148.50	141.11	137.10	134.58	132.85	131.58	130.62	129.86
	.100	4.54	4.32	4.19	4.11	4.05	4.01	3.98	3.95	3.94
	.050	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00
4	.025	12.22	10.65	9.98	9.60	9.36	9.20	9.07	8.98	8.90
	.010	21.20	18.00	16.69	15.98	15.52	15.21	14.98	14.80	14.66
	.001	74.14	61.25	56.18	53.44	51.71	50.53	49.66	49.00	48.47
	.100	4.06	3.78	3.62	3.52	3.45	3.40	3.37	3.34	3.32
	.050	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77
5	.025	10.01	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68
	.010	16.26	13.27	12.06	11.39	10.97	10.67	10.46	10.29	10.16
	.001	47.18	37.12	33.20	31.09	29.75	28.83	28.16	27.65	27.24
	.100	3.78	3.46	3.29	3.18	3.11	3.05	3.01	2.98	2.96
	.050	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10
6	.025	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52
	.010	13.75	10.92	9.78	9.15	8.75	8.47	8.26	8.10	7.98
	.001	35.51	27.00	23.70	21.92	20.80	20.03	19.46	19.03	18.69
	.100	3.59	3.26	3.07	2.96	2.88	2.83	2.78	2.75	2.72
	.050	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68
7	.025	8.07	6.54	5.89	5.52	5.29	5.12	4.99	4.90	4.82
	.010	12.25	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72
	.001	29.25	21.69	18.77	17.20	16.21	15.52	15.02	14.63	14.33

(continued)

Degrees of freedom in the denominator	p	Degrees of freedom in the numerator: 1	2	3	4	5	6	7	8	9
	.100	3.46	3.11	2.92	2.81	2.73	2.67	2.62	2.59	2.56
	.050	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39
8	.025	7.57	6.06	5.42	5.05	4.82	4.65	4.53	4.43	4.36
	.010	11.26	8.65	7.59	7.01	6.63	6.37	6.18	6.03	5.91
	.001	25.41	18.49	15.83	14.39	13.48	12.86	12.40	12.05	11.77
	.100	3.36	3.01	2.81	2.69	2.61	2.55	2.51	2.47	2.44
	.050	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18
9	.025	7.21	5.71	5.08	4.72	4.48	4.32	4.20	4.10	4.03
	.010	10.56	8.02	6.99	6.42	6.06	5.80	5.61	5.47	5.35
	.001	22.86	16.39	13.90	12.56	11.71	11.13	10.70	10.37	10.11
	.100	3.29	2.92	2.73	2.61	2.52	2.46	2.41	2.38	2.35
	.050	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02
10	.025	6.94	5.46	4.83	4.47	4.24	4.07	3.95	3.85	3.78
	.010	10.04	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94
	.001	21.04	14.91	12.55	11.28	10.48	9.93	9.52	9.20	8.96
	.100	3.23	2.86	2.66	2.54	2.45	2.39	2.34	2.30	2.27
	.050	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90
11	.025	6.72	5.26	4.63	4.28	4.04	3.88	3.76	3.66	3.59
	.010	9.65	7.21	6.22	5.67	5.32	5.07	4.89	4.74	4.63
	.001	19.69	13.81	11.56	10.35	9.58	9.05	8.66	8.35	8.12
	.100	3.18	2.81	2.61	2.48	2.39	2.33	2.28	2.24	2.21
	.050	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80
12	.025	6.55	5.10	4.47	4.12	3.89	3.73	3.61	3.51	3.44
	.010	9.33	6.93	5.95	5.41	5.06	4.82	4.64	4.50	4.39
	.001	18.64	12.97	10.80	9.63	8.89	8.38	8.00	7.71	7.48
	.100	3.14	2.76	2.56	2.43	2.35	2.28	2.23	2.20	2.16
	.050	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71
13	.025	6.41	4.97	4.35	4.00	3.77	3.60	3.48	3.39	3.31
	.010	9.07	6.70	5.74	5.21	4.86	4.62	4.44	4.30	4.19
	.001	17.82	12.31	10.21	9.07	8.35	7.86	7.49	7.21	6.98
	.100	3.10	2.73	2.52	2.39	2.31	2.24	2.19	2.15	2.12
	.050	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65
14	.025	6.30	4.86	4.24	3.89	3.66	3.50	3.38	3.29	3.21
	.010	8.86	6.51	5.56	5.04	4.69	4.46	4.28	4.14	4.03
	.001	17.14	11.78	9.73	8.62	7.92	7.44	7.08	6.80	6.58
	.100	3.07	2.70	2.49	2.36	2.27	2.21	2.16	2.12	2.09
	.050	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59
15	.025	6.20	4.77	4.15	3.80	3.58	3.41	3.29	3.20	3.12
	.010	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.89
	.001	16.59	11.34	9.34	8.25	7.57	7.09	6.74	6.47	6.26
	.100	3.05	2.67	2.46	2.33	2.24	2.18	2.13	2.09	2.06
	.050	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54
16	.025	6.12	4.69	4.08	3.73	3.50	3.34	3.22	3.12	3.05
	.010	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78
	.001	16.12	10.97	9.01	7.94	7.27	6.80	6.46	6.19	5.98
	.100	3.03	2.64	2.44	2.31	2.22	2.15	2.10	2.06	2.03
	.050	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49
17	.025	6.04	4.62	4.01	3.66	3.44	3.28	3.16	3.06	2.98
	.010	8.40	6.11	5.19	4.67	4.34	4.10	3.93	3.79	3.68
	.001	15.72	10.66	8.73	7.68	7.02	6.56	6.22	5.96	5.75

(continued)

Degrees of freedom in the numerator										
10	12	15	20	25	30	40	50	60	120	1000
2.54	2.50	2.46	2.42	2.40	2.38	2.36	2.35	2.34	2.32	2.30
3.35	3.28	3.22	3.15	3.11	3.08	3.04	3.02	3.01	2.97	2.93
4.30	4.20	4.10	4.00	3.94	3.89	3.84	3.81	3.78	3.73	3.68
5.81	5.67	5.52	5.36	5.26	5.20	5.12	5.07	5.03	4.95	4.87
11.54	11.19	10.84	10.48	10.26	10.11	9.92	9.80	9.73	9.53	9.36
2.42	2.38	2.34	2.30	2.27	2.25	2.23	2.22	2.21	2.18	2.16
3.14	3.07	3.01	2.94	2.89	2.86	2.83	2.80	2.79	2.75	2.71
3.96	3.87	3.77	3.67	3.60	3.56	3.51	3.47	3.45	3.39	3.34
5.26	5.11	4.96	4.81	4.71	4.65	4.57	4.52	4.48	4.40	4.32
9.89	9.57	9.24	8.90	8.69	8.55	8.37	8.26	8.19	8.00	7.84
2.32	2.28	2.24	2.20	2.17	2.16	2.13	2.12	2.11	2.08	2.06
2.98	2.91	2.85	2.77	2.73	2.70	2.66	2.64	2.62	2.58	2.54
3.72	3.62	3.52	3.42	3.35	3.31	3.26	3.22	3.20	3.14	3.09
4.85	4.71	4.56	4.41	4.31	4.25	4.17	4.12	4.08	4.00	3.92
8.75	8.45	8.13	7.80	7.60	7.47	7.30	7.19	7.12	6.94	6.78
2.25	2.21	2.17	2.12	2.10	2.08	2.05	2.04	2.03	2.00	1.98
2.85	2.79	2.72	2.65	2.60	2.57	2.53	2.51	2.49	2.45	2.41
3.53	3.43	3.33	3.23	3.16	3.12	3.06	3.03	3.00	2.94	2.89
4.54	4.40	4.25	4.10	4.01	3.94	3.86	3.81	3.78	3.69	3.61
7.92	7.63	7.32	7.01	6.81	6.68	6.52	6.42	6.35	6.18	6.02
2.19	2.15	2.10	2.06	2.03	2.01	1.99	1.97	1.96	1.93	1.91
2.75	2.69	2.62	2.54	2.50	2.47	2.43	2.40	2.38	2.34	2.30
3.37	3.28	3.18	3.07	3.01	2.96	2.91	2.87	2.85	2.79	2.73
4.30	4.16	4.01	3.86	3.76	3.70	3.62	3.57	3.54	3.45	3.37
7.29	7.00	6.71	6.40	6.22	6.09	5.93	5.83	5.76	5.59	5.44
2.14	2.10	2.05	2.01	1.98	1.96	1.93	1.92	1.90	1.88	1.85
2.67	2.60	2.53	2.46	2.41	2.38	2.34	2.31	2.30	2.25	2.21
3.25	3.15	3.05	2.95	2.88	2.84	2.78	2.74	2.72	2.66	2.60
4.10	3.96	3.82	3.66	3.57	3.51	3.43	3.38	3.34	3.25	3.18
6.80	6.52	6.23	5.93	5.75	5.63	5.47	5.37	5.30	5.14	4.99
2.10	2.05	2.01	1.96	1.93	1.91	1.89	1.87	1.86	1.83	1.80
2.60	2.53	2.46	2.39	2.34	2.31	2.27	2.24	2.22	2.18	2.14
3.15	3.05	2.95	2.84	2.78	2.73	2.67	2.64	2.61	2.55	2.50
3.94	3.80	3.66	3.51	3.41	3.35	3.27	3.22	3.18	3.09	3.02
6.40	6.13	5.85	5.56	5.38	5.25	5.10	5.00	4.94	4.77	4.62
2.06	2.02	1.97	1.92	1.89	1.87	1.85	1.83	1.82	1.79	1.76
2.54	2.48	2.40	2.33	2.28	2.25	2.20	2.18	2.16	2.11	2.07
3.06	2.96	2.86	2.76	2.69	2.64	2.59	2.55	2.52	2.46	2.40
3.80	3.67	3.52	3.37	3.28	3.21	3.13	3.08	3.05	2.96	2.88
6.08	5.81	5.54	5.25	5.07	4.95	4.80	4.70	4.64	4.47	4.33
2.03	1.99	1.94	1.89	1.86	1.84	1.81	1.79	1.78	1.75	1.72
2.49	2.42	2.35	2.28	2.23	2.19	2.15	2.12	2.11	2.06	2.02
2.99	2.89	2.79	2.68	2.61	2.57	2.51	2.47	2.45	2.38	2.32
3.69	3.55	3.41	3.26	3.16	3.10	3.02	2.97	2.93	2.84	2.76
5.81	5.55	5.27	4.99	4.82	4.70	4.54	4.45	4.39	4.23	4.08
2.00	1.96	1.91	1.86	1.83	1.81	1.78	1.76	1.75	1.72	1.69
2.45	2.38	2.31	2.23	2.18	2.15	2.10	2.08	2.06	2.01	1.97
2.92	2.82	2.72	2.62	2.55	2.50	2.44	2.41	2.38	2.32	2.26
3.59	3.46	3.31	3.16	3.07	3.00	2.92	2.87	2.83	2.75	2.66
5.58	5.32	5.05	4.78	4.60	4.48	4.33	4.24	4.18	4.02	3.87

(*Continued*)

t Table

cum. prob	$t_{.50}$	$t_{.75}$	$t_{.80}$	$t_{.85}$	$t_{.90}$	$t_{.95}$	$t_{.975}$	$t_{.99}$	$t_{.995}$	$t_{.999}$	$t_{.9995}$
one-tail	0.50	0.25	0.20	0.15	0.10	0.05	0.025	0.01	0.005	0.001	0.0005
two-tails	1.00	0.50	0.40	0.30	0.20	0.10	0.05	0.02	0.01	0.002	0.001
df											
1	0.000	1.000	1.376	1.963	3.078	6.314	12.71	31.82	63.66	318.31	636.62
2	0.000	0.816	1.061	1.386	1.886	2.920	4.303	6.965	9.925	22.327	31.599
3	0.000	0.765	0.978	1.250	1.638	2.353	3.182	4.541	5.841	10.215	12.924
4	0.000	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	0.000	0.727	0.920	1.156	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	0.000	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	0.000	0.711	0.896	1.119	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	0.000	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	0.000	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.250	4.297	4.781
10	0.000	0.700	0.879	1.093	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	0.000	0.697	0.876	1.088	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	0.000	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	0.000	0.694	0.870	1.079	1.350	1.771	2.160	2.650	3.012	3.852	4.221
14	0.000	0.692	0.868	1.076	1.345	1.761	2.145	2.624	2.977	3.787	4.140
15	0.000	0.691	0.866	1.074	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	0.000	0.690	0.865	1.071	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	0.000	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	0.000	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.878	3.610	3.922
19	0.000	0.688	0.861	1.066	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	0.000	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.845	3.552	3.850
21	0.000	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831	3.527	3.819
22	0.000	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819	3.505	3.792
23	0.000	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807	3.485	3.768
24	0.000	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797	3.467	3.745
25	0.000	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787	3.450	3.725
26	0.000	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779	3.435	3.707
27	0.000	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771	3.421	3.690
28	0.000	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763	3.408	3.674
29	0.000	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756	3.396	3.659
30	0.000	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750	3.385	3.646
40	0.000	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704	3.307	3.551
60	0.000	0.679	0.848	1.045	1.296	1.671	2.000	2.390	2.660	3.232	3.460
80	0.000	0.678	0.846	1.043	1.292	1.664	1.990	2.374	2.639	3.195	3.416
100	0.000	0.677	0.845	1.042	1.290	1.660	1.984	2.364	2.626	3.174	3.390
1000	0.000	0.675	0.842	1.037	1.282	1.646	1.962	2.330	2.581	3.098	3.300
Z	0.000	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576	3.090	3.291
	0%	50%	60%	70%	80%	90%	95%	98%	99%	99.8%	99.9%
	Confidence Level										

STANDARD NORMAL DISTRIBUTION: Table Values Represent AREA to the LEFT of the Z score.

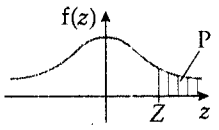
Z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.0
-3.9	.00005	.00005	.00004	.00004	.00004	.00004	.00004	.00004	.00003	.000
-3.8	.00007	.00007	.00007	.00006	.00006	.00006	.00006	.00005	.00005	.000
-3.7	.00011	.00010	.00010	.00010	.00009	.00009	.00008	.00008	.00008	.000
-3.6	.00016	.00015	.00015	.00014	.00014	.00013	.00013	.00012	.00012	.000
-3.5	.00023	.00022	.00022	.00021	.00020	.00019	.00019	.00018	.00017	.000
-3.4	.00034	.00032	.00031	.00030	.00029	.00028	.00027	.00026	.00025	.000
-3.3	.00048	.00047	.00045	.00043	.00042	.00040	.00039	.00038	.00036	.000
-3.2	.00069	.00066	.00064	.00062	.00060	.00058	.00056	.00054	.00052	.000
-3.1	.00097	.00094	.00090	.00087	.00084	.00082	.00079	.00076	.00074	.000
-3.0	.00135	.00131	.00126	.00122	.00118	.00114	.00111	.00107	.00104	.0
-2.9	.00187	.00181	.00175	.00169	.00164	.00159	.00154	.00149	.00144	.001
-2.8	.00256	.00248	.00240	.00233	.00226	.00219	.00212	.00205	.00199	.001
-2.7	.00347	.00336	.00326	.00317	.00307	.00298	.00289	.00280	.00272	.002
-2.6	.00466	.00453	.00440	.00427	.00415	.00402	.00391	.00379	.00368	.003
-2.5	.00621	.00604	.00587	.00570	.00554	.00539	.00523	.00508	.00494	.004
-2.4	.00820	.00798	.00776	.00755	.00734	.00714	.00695	.00676	.00657	.006
-2.3	.01072	.01044	.01017	.00990	.00964	.00939	.00914	.00889	.00866	.008
-2.2	.01390	.01355	.01321	.01287	.01255	.01222	.01191	.01160	.01130	.011
-2.1	.01786	.01743	.01700	.01659	.01618	.01578	.01539	.01500	.01463	.014
-2.0	.02275	.02222	.02169	.02118	.02068	.02018	.01970	.01923	.01876	.018
-1.9	.02872	.02807	.02743	.02680	.02619	.02559	.02500	.02442	.02385	.023
-1.8	.03593	.03515	.03438	.03362	.03288	.03216	.03144	.03074	.03005	.029
-1.7	.04457	.04363	.04272	.04182	.04093	.04006	.03920	.03836	.03754	.036
-1.6	.05480	.05370	.05262	.05155	.05050	.04947	.04846	.04746	.04648	.045
-1.5	.06681	.06552	.06426	.06301	.06178	.06057	.05938	.05821	.05705	.055
-1.4	.08076	.07927	.07780	.07636	.07493	.07353	.07215	.07078	.06944	.068
-1.3	.09680	.09510	.09342	.09176	.09012	.08851	.08691	.08534	.08379	.082
-1.2	.11507	.11314	.11123	.10935	.10749	.10565	.10383	.10204	.10027	.0
-1.1	.13567	.13350	.13136	.12924	.12714	.12507	.12302	.12100	.11900	.117
-1.0	.15866	.15625	.15386	.15151	.14917	.14686	.14457	.14231	.14007	.137
-0.9	.18406	.18141	.17879	.17619	.17361	.17106	.16853	.16602	.16354	.161
-0.8	.21186	.20897	.20611	.20327	.20045	.19766	.19489	.19215	.18943	.186
-0.7	.24196	.23885	.23576	.23270	.22965	.22663	.22363	.22065	.21770	.214
-0.6	.27425	.27093	.26763	.26435	.26109	.25785	.25463	.25143	.24825	.245
-0.5	.30854	.30503	.30153	.29806	.29460	.29116	.28774	.28434	.28096	.277
-0.4	.34458	.34090	.33724	.33360	.32997	.32636	.32276	.31918	.31561	.312
-0.3	.38209	.37828	.37448	.37070	.36693	.36317	.35942	.35569	.35197	.348
-0.2	.42074	.41683	.41294	.40905	.40517	.40129	.39743	.39358	.38974	.385
-0.1	.46017	.45620	.45224	.44828	.44433	.44038	.43644	.43251	.42858	.424
-0.0	.50000	.49601	.49202	.48803	.48405	.48006	.47608	.47210	.46812	.464

STANDARD NORMAL DISTRIBUTION: Table Values Represent AREA to the LEFT of the Z score.

Z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.50000	.50399	.50798	.51197	.51595	.51994	.52392	.52790	.53188	.535
0.1	.53983	.54380	.54776	.55172	.55567	.55962	.56356	.56749	.57142	.575
0.2	.57926	.58317	.58706	.59095	.59483	.59871	.60257	.60642	.61026	.614
0.3	.61791	.62172	.62552	.62930	.63307	.63683	.64058	.64431	.64803	.651
0.4	.65542	.65910	.66276	.66640	.67003	.67364	.67724	.68082	.68439	.687
0.5	.69146	.69497	.69847	.70194	.70540	.70884	.71226	.71566	.71904	.722
0.6	.72575	.72907	.73237	.73565	.73891	.74215	.74537	.74857	.75175	.754
0.7	.75804	.76115	.76424	.76730	.77035	.77337	.77637	.77935	.78230	.785
0.8	.78814	.79103	.79389	.79673	.79955	.80234	.80511	.80785	.81057	.813
0.9	.81594	.81859	.82121	.82381	.82639	.82894	.83147	.83398	.83646	.838
1.0	.84134	.84375	.84614	.84849	.85083	.85314	.85543	.85769	.85993	.862
1.1	.86433	.86650	.86864	.87076	.87286	.87493	.87698	.87900	.88100	.882
1.2	.88493	.88686	.88877	.89065	.89251	.89435	.89617	.89796	.89973	.901
1.3	.90320	.90490	.90658	.90824	.90988	.91149	.91309	.91466	.91621	.917
1.4	.91924	.92073	.92220	.92364	.92507	.92647	.92785	.92922	.93056	.931
1.5	.93319	.93448	.93574	.93699	.93822	.93943	.94062	.94179	.94295	.944
1.6	.94520	.94630	.94738	.94845	.94950	.95053	.95154	.95254	.95352	.954
1.7	.95543	.95637	.95728	.95818	.95907	.95994	.96080	.96164	.96246	.963
1.8	.96407	.96485	.96562	.96638	.96712	.96784	.96856	.96926	.96995	.970
1.9	.97128	.97193	.97257	.97320	.97381	.97441	.97500	.97558	.97615	.976
2.0	.97725	.97778	.97831	.97882	.97932	.97982	.98030	.98077	.98124	.981
2.1	.98214	.98257	.98300	.98341	.98382	.98422	.98461	.98500	.98537	.985
2.2	.98610	.98645	.98679	.98713	.98745	.98778	.98809	.98840	.98870	.988
2.3	.98928	.98956	.98983	.99010	.99036	.99061	.99086	.99111	.99134	.991
2.4	.99180	.99202	.99224	.99245	.99266	.99286	.99305	.99324	.99343	.993
2.5	.99379	.99396	.99413	.99430	.99446	.99461	.99477	.99492	.99506	.995
2.6	.99534	.99547	.99560	.99573	.99585	.99598	.99609	.99621	.99632	.996
2.7	.99653	.99664	.99674	.99683	.99693	.99702	.99711	.99720	.99728	.997
2.8	.99744	.99752	.99760	.99767	.99774	.99781	.99788	.99795	.99801	.998
2.9	.99813	.99819	.99825	.99831	.99836	.99841	.99846	.99851	.99856	.998
3.0	.99865	.99869	.99874	.99878	.99882	.99886	.99889	.99893	.99896	.999
3.1	.99903	.99906	.99910	.99913	.99916	.99918	.99921	.99924	.99926	.999
3.2	.99931	.99934	.99936	.99938	.99940	.99942	.99944	.99946	.99948	.999
3.3	.99952	.99953	.99955	.99957	.99958	.99960	.99961	.99962	.99964	.999
3.4	.99966	.99968	.99969	.99970	.99971	.99972	.99973	.99974	.99975	.999
3.5	.99977	.99978	.99978	.99979	.99980	.99981	.99981	.99982	.99983	.999
3.6	.99984	.99985	.99985	.99986	.99986	.99987	.99987	.99988	.99988	.999
3.7	.99989	.99990	.99990	.99990	.99991	.99991	.99992	.99992	.99992	.999
3.8	.99993	.99993	.99993	.99994	.99994	.99994	.99994	.99995	.99995	.999
3.9	.99995	.99995	.99996	.99996	.99996	.99996	.99996	.99996	.99997	.999

Percentage points of the normal distribution

The values z in the table are those which a random variable $Z \sim N(0,1)$ exceeds with probability p; that is, $P(Z > z) = p$.



p	z	p	z
0.5000	0.0000	0.0500	1.6449
0.4000	0.2533	0.0250	1.9600
0.3	0.5244	0.0100	2.3263
0.2000	0.8416	0.0050	2.5758
0.1500	1.0364	0.0010	3.0902
0.1000	1.2816	0.0005	3.2905

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA/MSc Deferred / Supplementary Examinations
Thursday 2th December 2021

MBS5012 – QUANTITATIVE METHODS FOR BUSINESS

Information for Candidates

1. Time Allowed: **3 hours**
2. Total Marks: 100
3. Mark allocations are shown in brackets
4. Special Requirements: - A non-programmable scientific calculator

Instructions to Candidates

1. This Question Paper consists of FOUR questions each carrying 25 marks.
2. Answer ALL FOUR questions.
3. Start the answer to each full question on a fresh page of the answer booklet.
4. Questions may be written in any order, but must be legibly numbered.
5. Write neatly and legibly, showing ALL your workings were necessary.

Statistical tables and a formula sheet are attached at the end of this paper

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

1. (a) An insurance company believes that claim amounts in a certain portfolio of policies follow a normal distribution. An analyst chose 61 policies at random which gave a sample mean of K5,230 and a sample standard deviation of K810.

   (i) Construct a 95% confidence interval for the mean claim amount in the portfolio. (3)

   (ii) The company has changed its loss assessment processes in order to reduce claim sizes on average, targeting a reduction of K200 compared to the current mean. It does not expect a change to the variability of claim amounts. The company intends to verify whether the target has been met by using a sample of claims to test the null hypothesis that there is no change, against a one-sided alternative hypothesis. Company policy is to perform statistical tests at a significance level of 5%.

   Determine the smallest number of claims that would need to be sampled under the new processes for a K200 reduction to be statistically significant in the test. (5)

(b) Mr Mwansa is struggling to repay his loan of K300,000 with payments of K6,200 made monthly in arrears for 5 years.

   (i) Calculate the flat rate of interest per annum. (2)

   (ii) Hence, or otherwise, calculate the APR of Mr Mwansa's loan. (3)

   After exactly one year, a loan company offers to "help" Mr Mwansa by restructuring his loan with new monthly payments of K3,000 made in arrears.

   (i) Assuming the company charges the same APR as Mr Mwansa's original loan, calculate the term of the new loan. (4)

   (ii) Calculate how much more interest in total Mr Mwansa will pay on his restructured loan than on his original loan. (2)

(c) A businessman wishes to borrow an amount of K1 million for a term of 5 years. The agreed rate of interest is 6% per annum effective for the first 3 years, and 8% per annum effective thereafter.

   Repayments on the loan are made annually in arrears.

   The amount of the level annual repayment is **K239,792.32**.

   (i) Draw up the loan schedule for the full five-year period. (3)

   (ii) Calculate what percentage of the loan has been repaid by the end of year 3. (1)

   (iii) Without doing any further calculations, explain how this percentage figure would alter if the rate of interest had instead been 8% for the first three years and 6% thereafter. (2)

2. (a) A company employs 90 administrators. The length of time that they have been employed by the company and their gender are summarised in the table below.

Length of time employed, x years	Female	Male
$x < 4$	9	16
$4 \leqslant x < 10$	14	20
$10 \leqslant x$	7	24

One of the 90 administrators is selected at random.

(i) Find the probability that the administrator is female. (1)

(ii) Given that the administrator has been employed by the company for less than 4 years, find the probability that this administrator is male. (1)

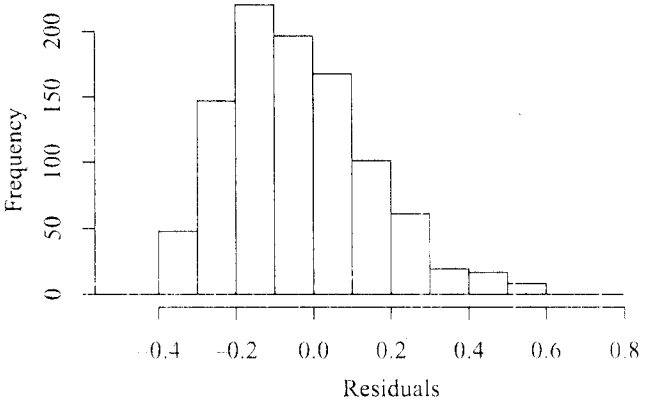
(iii) Given that the administrator has been employed by the company for less than 10 years, find the probability that this administrator is male. (1)

(iv) State, with a reason, whether or not the event "selecting a male" is independent of the event "selecting an administrator who has been employed by the company for less than 4 years". (2)

(b) A statistician is asked to check a linear regression calculation performed by a trainee. The trainee reports a least squares slope parameter estimate of $\hat{\beta} = 13.7$ and a sample correlation coefficient $r = -0.89$.

(i) Justify why this suggests that the trainee has made an error. (2)

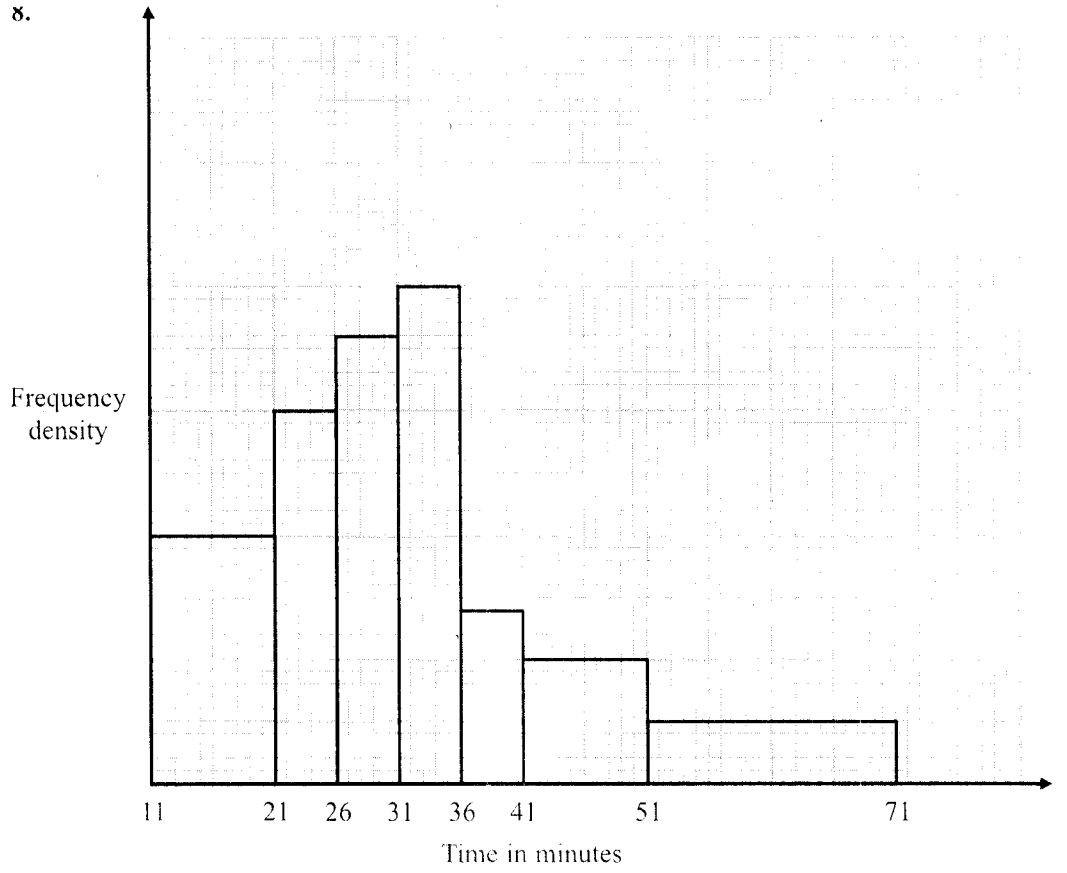
(ii) In a different simple linear regression model, a histogram of the residuals is shown below.



Comment on the validity of the assumptions of the linear model. (2)

(c) The histogram below summarises the times, in minutes, that 200 people spent shopping in a supermarket

8.



(i) Give a reason to justify the use of a histogram to represent these date. (1)

(ii) Given that 40 people spent between 11 and 21 minutes shopping in the supermarket, estimate the number of people that spent between 18 and 25 minutes shopping in the supermarket. (3)

(iii) Given that 40 people spent between 11 and 21 minutes shopping in the supermarket, estimate the median time spent shopping in the supermarket by these 200 people. (2)

(iv) The mid-point of each bar is represented by x and the corresponding frequency by f. Show that $\sum fx = 6390$ (2)

(v) Given that $\sum fx^2 = 238430$, for the data shown in the histogram, calculate estimates of the mean and the standard deviation. (3)

(vi) The manager of the supermarket decides to model these data with a normal distribution. Comment on the manager's decision, justify your answer. (1)

(d) A survey showed that 40% of investors invest in at least two companies in order to diversify their risk.

Calculate an approximate probability that more than 100 investors have invested in at least two companies in a random sample of 300 investors. (2)

(e) A recruitment company places adverts in three publications with probabilities of 0.2, 0.3 and 0.5 respectively.

The probability that the recruitment company gets an enquiry from an advert in the first publication is 0.001. The probabilities for the other two publications are 0.002 and 0.004 respectively.

Given that the company has just received an enquiry, calculate the probability that it came from an advert in the first publication. (2)

3. The promoter of a touring dance show wishes to analyse how the price per ticket affects the size of its audiences. She tests two prices, K40 and K50, over 11 shows each which give rise to the following attendances.

Price											
K40	21	22	28	27	20	23	26	32	25	21	30
K50	19	18	38	33	24	39	22	20	28	26	30

(a) Enter the data into your calculator, and calculate the mean and standard deviation of the attendance for each sample. (4)

(b) Perform a statistical test to determine whether the variances of the attendance are equal under the two prices. (6)

(c) Perform a t-test to determine whether the mean attendance is the same under the two prices. (7)

(d) Calculate a 95% confidence interval for the difference between the mean show revenue under each price. (5)

(e) Without doing any further calculations, comment on which price the promoter should choose. (3)

4. It is thought that house prices in certain areas are correlated with the quality of schools in the same areas. A study has been carried out in the ten provinces of Zambia where average house prices (in thousands of dollars) and school quality indices ranging from 1 (very poor) to 10 (excellent) have been recorded:

Province	1	2	3	4	5	6	7	8	9	10
School index x	9	5	7	6	4	9	7	8	5	6
House prices y	210	185	190	190	170	195	180	195	160	150

$$\sum xy = 12,240, \quad \sum x^2 = 462, \quad \sum y^2 = 335,975$$

(a) (i) Construct a scatterplot of the data. (2)

(ii) Comment on the relationship between school quality index and house price. (2)

(b) A linear model of the form $y = \alpha + \beta x + \varepsilon$ is fitted to the data, where the error terms (ε) independently follow a $N(0, \sigma^2)$ distribution with the variance σ^2 being an unknown parameter.

(i) Determine the fitted line of the regression model. (4)

(ii) Predict the average house price in Zambia when school index is 10. (1)

(c) (i) Write down the ANOVA table. (6)

(ii) Perform an F-test to test the null hypothesis that there is no linear relationship between house prices and school indices, based on the ANOVA table. (6)

(d) (i) Dertemine the percentage of variation in the average house prices in Zambia as explained by school index. (2)

(ii) Calculate the coefficient of correlation and give an interpretation. (2)

END OF PAPER

FORMULA SHEET FOR MBS5012 2020 EXAMINATION

$$\mathrm{FV} = C(1+r)^{n}$$

$$\mathrm{PV} = C(1+r)^{-n}$$

$$\mathrm{PVA} = C\left(\frac{1-(1+r)^{-n}}{r^{(p)}}\right)$$

$$r^{(p)} = p\left[(1+r)^{1/p}-1\right]$$

$$\frac{r-r_1}{r_2-r_1} = \frac{C-C_1}{C_2-C_1}$$

$$\overline{x} = \frac{\sum x}{n}$$

$$S^2 = \frac{n\sum x^2 - \left(\sum x\right)^2}{n(n-1)}$$

$$\overline{x} = \frac{\sum fx}{\sum f}$$

$$t = \frac{(\overline{x}-\overline{y})-(\mu_1-\mu_2)}{S_{\text{pooled}}\sqrt{\frac{1}{n_1}+\frac{1}{n_2}}}$$

$$\mathrm{CI} = \left((\overline{x}-\overline{y}) \pm t_{\frac{\alpha}{2},n_1+n_2-2}\, S_{\text{pooled}}\sqrt{\frac{1}{n_1}+\frac{1}{n_2}}\right)$$

$$S^2_{\text{pooled}} = \frac{(n_1-1)S_1^2+(n_2-1)S_2^2}{n_1+n_2-2}$$

$$Z = \frac{(\overline{x}-\overline{y})-(\mu_1-\mu_2)}{\sqrt{\frac{S_1^2}{n_1}+\frac{S_2^2}{n_2}}}$$

$$\mathrm{CI} = \left((\overline{x}-\overline{y}) \pm Z_{\frac{\alpha}{2}}\sqrt{\frac{S_1^2}{n_1}+\frac{S_2^2}{n_2}}\right)$$

$$\hat{y} = \hat{\alpha}+\hat{\beta}x$$

$$\hat{\alpha} = \overline{y}-\hat{\beta}\overline{x}$$

$$\hat{\beta} = \frac{S_{xy}}{S_{xx}}$$

$$S_{xx} = \sum x^2 - \frac{\left(\sum x\right)^2}{n}$$

$$S_{xy} = \sum xy - \frac{\left(\sum x\right)\left(\sum y\right)}{n}$$

$$S_{yy} = \sum y^2 - \frac{\left(\sum y\right)^2}{n}$$

$$r^2 = \frac{SSR}{SST}$$

$$S^2 = \frac{\sum fx^2}{\sum f} - \left(\frac{\sum fx}{\sum f}\right)^2$$

$$F = \frac{S_1^2}{S_2^2}$$

$$F = \frac{MSR}{MSE}$$

$$Z = \frac{\overline{x}-\mu}{\sigma}$$

$$Z = \frac{\overline{x}-\mu}{\sigma/\sqrt{n}}$$

$$t = \frac{\overline{x}-\mu}{s/\sqrt{n}}$$

Table entry for p is the critical value F^* with probability p lying to its right.

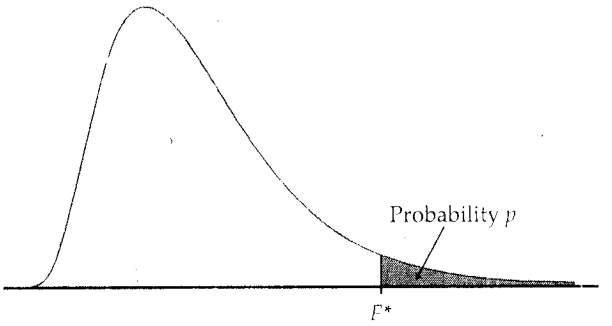


TABLE E

F critical values

Degrees of freedom in the denominator		Degrees of freedom in the numerator								
	p	1	2	3	4	5	6	7	8	9
1	.100	39.86	49.50	53.59	55.83	57.24	58.20	58.91	59.44	59.86
	.050	161.45	199.50	215.71	224.58	230.16	233.99	236.77	238.88	240.54
	.025	647.79	799.50	864.16	899.58	921.85	937.11	948.22	956.66	963.28
	.010	4052.2	4999.5	5403.4	5624.6	5763.6	5859.0	5928.4	5981.1	6022.5
	.001	405284	500000	540379	562500	576405	585937	592873	598144	602284
2	.100	8.53	9.00	9.16	9.24	9.29	9.33	9.35	9.37	9.38
	.050	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38
	.025	38.51	39.00	39.17	39.25	39.30	39.33	39.36	39.37	39.39
	.010	98.50	99.00	99.17	99.25	99.30	99.33	99.36	99.37	99.39
	.001	998.50	999.00	999.17	999.25	999.30	999.33	999.36	999.37	999.39
3	.100	5.54	5.46	5.39	5.34	5.31	5.28	5.27	5.25	5.24
	.050	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81
	.025	17.44	16.04	15.44	15.10	14.88	14.73	14.62	14.54	14.47
	.010	34.12	30.82	29.46	28.71	28.24	27.91	27.67	27.49	27.35
	.001	167.03	148.50	141.11	137.10	134.58	132.85	131.58	130.62	129.86
4	.100	4.54	4.32	4.19	4.11	4.05	4.01	3.98	3.95	3.94
	.050	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00
	.025	12.22	10.65	9.98	9.60	9.36	9.20	9.07	8.98	8.90
	.010	21.20	18.00	16.69	15.98	15.52	15.21	14.98	14.80	14.66
	.001	74.14	61.25	56.18	53.44	51.71	50.53	49.66	49.00	48.47
5	.100	4.06	3.78	3.62	3.52	3.45	3.40	3.37	3.34	3.32
	.050	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77
	.025	10.01	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68
	.010	16.26	13.27	12.06	11.39	10.97	10.67	10.46	10.29	10.16
	.001	47.18	37.12	33.20	31.09	29.75	28.83	28.16	27.65	27.24
6	.100	3.78	3.46	3.29	3.18	3.11	3.05	3.01	2.98	2.96
	.050	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10
	.025	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52
	.010	13.75	10.92	9.78	9.15	8.75	8.47	8.26	8.10	7.98
	.001	35.51	27.00	23.70	21.92	20.80	20.03	19.46	19.03	18.69
7	.100	3.59	3.26	3.07	2.96	2.88	2.83	2.78	2.75	2.72
	.050	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68
	.025	8.07	6.54	5.89	5.52	5.29	5.12	4.99	4.90	4.82
	.010	12.25	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72
	.001	29.25	21.69	18.77	17.20	16.21	15.52	15.02	14.63	14.33

TABLE E

F critical values (continued)

Degrees of freedom in the denominator	*p*	Degrees of freedom in the numerator: 1	2	3	4	5	6	7	8	9
8	.100	3.46	3.11	2.92	2.81	2.73	2.67	2.62	2.59	2.56
	.050	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39
	.025	7.57	6.06	5.42	5.05	4.82	4.65	4.53	4.43	4.36
	.010	11.26	8.65	7.59	7.01	6.63	6.37	6.18	6.03	5.91
	.001	25.41	18.49	15.83	14.39	13.48	12.86	12.40	12.05	11.77
9	.100	3.36	3.01	2.81	2.69	2.61	2.55	2.51	2.47	2.44
	.050	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18
	.025	7.21	5.71	5.08	4.72	4.48	4.32	4.20	4.10	4.03
	.010	10.56	8.02	6.99	6.42	6.06	5.80	5.61	5.47	5.35
	.001	22.86	16.39	13.90	12.56	11.71	11.13	10.70	10.37	10.11
10	.100	3.29	2.92	2.73	2.61	2.52	2.46	2.41	2.38	2.35
	.050	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02
	.025	6.94	5.46	4.83	4.47	4.24	4.07	3.95	3.85	3.78
	.010	10.04	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94
	.001	21.04	14.91	12.55	11.28	10.48	9.93	9.52	9.20	8.96
11	.100	3.23	2.86	2.66	2.54	2.45	2.39	2.34	2.30	2.27
	.050	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90
	.025	6.72	5.26	4.63	4.28	4.04	3.88	3.76	3.66	3.59
	.010	9.65	7.21	6.22	5.67	5.32	5.07	4.89	4.74	4.63
	.001	19.69	13.81	11.56	10.35	9.58	9.05	8.66	8.35	8.12
12	.100	3.18	2.81	2.61	2.48	2.39	2.33	2.28	2.24	2.21
	.050	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80
	.025	6.55	5.10	4.47	4.12	3.89	3.73	3.61	3.51	3.44
	.010	9.33	6.93	5.95	5.41	5.06	4.82	4.64	4.50	4.39
	.001	18.64	12.97	10.80	9.63	8.89	8.38	8.00	7.71	7.48
13	.100	3.14	2.76	2.56	2.43	2.35	2.28	2.23	2.20	2.16
	.050	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71
	.025	6.41	4.97	4.35	4.00	3.77	3.60	3.48	3.39	3.31
	.010	9.07	6.70	5.74	5.21	4.86	4.62	4.44	4.30	4.19
	.001	17.82	12.31	10.21	9.07	8.35	7.86	7.49	7.21	6.98
14	.100	3.10	2.73	2.52	2.39	2.31	2.24	2.19	2.15	2.12
	.050	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65
	.025	6.30	4.86	4.24	3.89	3.66	3.50	3.38	3.29	3.21
	.010	8.86	6.51	5.56	5.04	4.69	4.46	4.28	4.14	4.03
	.001	17.14	11.78	9.73	8.62	7.92	7.44	7.08	6.80	6.58
15	.100	3.07	2.70	2.49	2.36	2.27	2.21	2.16	2.12	2.09
	.050	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59
	.025	6.20	4.77	4.15	3.80	3.58	3.41	3.29	3.20	3.12
	.010	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.89
	.001	16.59	11.34	9.34	8.25	7.57	7.09	6.74	6.47	6.26
16	.100	3.05	2.67	2.46	2.33	2.24	2.18	2.13	2.09	2.06
	.050	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54
	.025	6.12	4.69	4.08	3.73	3.50	3.34	3.22	3.12	3.05
	.010	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78
	.001	16.12	10.97	9.01	7.94	7.27	6.80	6.46	6.19	5.98
17	.100	3.03	2.64	2.44	2.31	2.22	2.15	2.10	2.06	2.03
	.050	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49
	.025	6.04	4.62	4.01	3.66	3.44	3.28	3.16	3.06	2.98
	.010	8.40	6.11	5.19	4.67	4.34	4.10	3.93	3.79	3.68
	.001	15.72	10.66	8.73	7.68	7.02	6.56	6.22	5.96	5.75

TABLE E

F critical values (continued)

Degrees of freedom in the numerator										
10	12	15	20	25	30	40	50	60	120	1000
2.54	2.50	2.46	2.42	2.40	2.38	2.36	2.35	2.34	2.32	2.30
3.35	3.28	3.22	3.15	3.11	3.08	3.04	3.02	3.01	2.97	2.93
4.30	4.20	4.10	4.00	3.94	3.89	3.84	3.81	3.78	3.73	3.68
5.81	5.67	5.52	5.36	5.26	5.20	5.12	5.07	5.03	4.95	4.87
11.54	11.19	10.84	10.48	10.26	10.11	9.92	9.80	9.73	9.53	9.36
2.42	2.38	2.34	2.30	2.27	2.25	2.23	2.22	2.21	2.18	2.16
3.14	3.07	3.01	2.94	2.89	2.86	2.83	2.80	2.79	2.75	2.71
3.96	3.87	3.77	3.67	3.60	3.56	3.51	3.47	3.45	3.39	3.34
5.26	5.11	4.96	4.81	4.71	4.65	4.57	4.52	4.48	4.40	4.32
9.89	9.57	9.24	8.90	8.69	8.55	8.37	8.26	8.19	8.00	7.84
2.32	2.28	2.24	2.20	2.17	2.16	2.13	2.12	2.11	2.08	2.06
2.98	2.91	2.85	2.77	2.73	2.70	2.66	2.64	2.62	2.58	2.54
3.72	3.62	3.52	3.42	3.35	3.31	3.26	3.22	3.20	3.14	3.09
4.85	4.71	4.56	4.41	4.31	4.25	4.17	4.12	4.08	4.00	3.92
8.75	8.45	8.13	7.80	7.60	7.47	7.30	7.19	7.12	6.94	6.78
2.25	2.21	2.17	2.12	2.10	2.08	2.05	2.04	2.03	2.00	1.98
2.85	2.79	2.72	2.65	2.60	2.57	2.53	2.51	2.49	2.45	2.41
3.53	3.43	3.33	3.23	3.16	3.12	3.06	3.03	3.00	2.94	2.89
4.54	4.40	4.25	4.10	4.01	3.94	3.86	3.81	3.78	3.69	3.61
7.92	7.63	7.32	7.01	6.81	6.68	6.52	6.42	6.35	6.18	6.02
2.19	2.15	2.10	2.06	2.03	2.01	1.99	1.97	1.96	1.93	1.91
2.75	2.69	2.62	2.54	2.50	2.47	2.43	2.40	2.38	2.34	2.30
3.37	3.28	3.18	3.07	3.01	2.96	2.91	2.87	2.85	2.79	2.73
4.30	4.16	4.01	3.86	3.76	3.70	3.62	3.57	3.54	3.45	3.37
7.29	7.00	6.71	6.40	6.22	6.09	5.93	5.83	5.76	5.59	5.44
2.14	2.10	2.05	2.01	1.98	1.96	1.93	1.92	1.90	1.88	1.85
2.67	2.60	2.53	2.46	2.41	2.38	2.34	2.31	2.30	2.25	2.21
3.25	3.15	3.05	2.95	2.88	2.84	2.78	2.74	2.72	2.66	2.60
4.10	3.96	3.82	3.66	3.57	3.51	3.43	3.38	3.34	3.25	3.18
6.80	6.52	6.23	5.93	5.75	5.63	5.47	5.37	5.30	5.14	4.99
2.10	2.05	2.01	1.96	1.93	1.91	1.89	1.87	1.86	1.83	1.80
2.60	2.53	2.46	2.39	2.34	2.31	2.27	2.24	2.22	2.18	2.14
3.15	3.05	2.95	2.84	2.78	2.73	2.67	2.64	2.61	2.55	2.50
3.94	3.80	3.66	3.51	3.41	3.35	3.27	3.22	3.18	3.09	3.02
6.40	6.13	5.85	5.56	5.38	5.25	5.10	5.00	4.94	4.77	4.62
2.06	2.02	1.97	1.92	1.89	1.87	1.85	1.83	1.82	1.79	1.76
2.54	2.48	2.40	2.33	2.28	2.25	2.20	2.18	2.16	2.11	2.07
3.06	2.96	2.86	2.76	2.69	2.64	2.59	2.55	2.52	2.46	2.40
3.80	3.67	3.52	3.37	3.28	3.21	3.13	3.08	3.05	2.96	2.88
6.08	5.81	5.54	5.25	5.07	4.95	4.80	4.70	4.64	4.47	4.33
2.03	1.99	1.94	1.89	1.86	1.84	1.81	1.79	1.78	1.75	1.72
2.49	2.42	2.35	2.28	2.23	2.19	2.15	2.12	2.11	2.06	2.02
2.99	2.89	2.79	2.68	2.61	2.57	2.51	2.47	2.45	2.38	2.32
3.69	3.55	3.41	3.26	3.16	3.10	3.02	2.97	2.93	2.84	2.76
5.81	5.55	5.27	4.99	4.82	4.70	4.54	4.45	4.39	4.23	4.08
2.00	1.96	1.91	1.86	1.83	1.81	1.78	1.76	1.75	1.72	1.69
2.45	2.38	2.31	2.23	2.18	2.15	2.10	2.08	2.06	2.01	1.97
2.92	2.82	2.72	2.62	2.55	2.50	2.44	2.41	2.38	2.32	2.26
3.59	3.46	3.31	3.16	3.07	3.00	2.92	2.87	2.83	2.75	2.66
5.58	5.32	5.05	4.78	4.60	4.48	4.33	4.24	4.18	4.02	3.87

(Continued)

t Table

cum. prob	$t_{.50}$	$t_{.75}$	$t_{.80}$	$t_{.85}$	$t_{.90}$	$t_{.95}$	$t_{.975}$	$t_{.99}$	$t_{.995}$	$t_{.999}$	$t_{.9995}$
one-tail	0.50	0.25	0.20	0.15	0.10	0.05	0.025	0.01	0.005	0.001	0.0005
two-tails	1.00	0.50	0.40	0.30	0.20	0.10	0.05	0.02	0.01	0.002	0.001
df											
1	0.000	1.000	1.376	1.963	3.078	6.314	12.71	31.82	63.66	318.31	636.62
2	0.000	0.816	1.061	1.386	1.886	2.920	4.303	6.965	9.925	22.327	31.599
3	0.000	0.765	0.978	1.250	1.638	2.353	3.182	4.541	5.841	10.215	12.924
4	0.000	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	0.000	0.727	0.920	1.156	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	0.000	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	0.000	0.711	0.896	1.119	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	0.000	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	0.000	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.250	4.297	4.781
10	0.000	0.700	0.879	1.093	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	0.000	0.697	0.876	1.088	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	0.000	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	0.000	0.694	0.870	1.079	1.350	1.771	2.160	2.650	3.012	3.852	4.221
14	0.000	0.692	0.868	1.076	1.345	1.761	2.145	2.624	2.977	3.787	4.140
15	0.000	0.691	0.866	1.074	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	0.000	0.690	0.865	1.071	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	0.000	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	0.000	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.878	3.610	3.922
19	0.000	0.688	0.861	1.066	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	0.000	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.845	3.552	3.850
21	0.000	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831	3.527	3.819
22	0.000	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819	3.505	3.792
23	0.000	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807	3.485	3.768
24	0.000	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797	3.467	3.745
25	0.000	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787	3.450	3.725
26	0.000	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779	3.435	3.707
27	0.000	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771	3.421	3.690
28	0.000	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763	3.408	3.674
29	0.000	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756	3.396	3.659
30	0.000	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750	3.385	3.646
40	0.000	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704	3.307	3.551
60	0.000	0.679	0.848	1.045	1.296	1.671	2.000	2.390	2.660	3.232	3.460
80	0.000	0.678	0.846	1.043	1.292	1.664	1.990	2.374	2.639	3.195	3.416
100	0.000	0.677	0.845	1.042	1.290	1.660	1.984	2.364	2.626	3.174	3.390
1000	0.000	0.675	0.842	1.037	1.282	1.646	1.962	2.330	2.581	3.098	3.300
z	0.000	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576	3.090	3.291
	0%	50%	60%	70%	80%	90%	95%	98%	99%	99.8%	99.9%
	Confidence Level										

STANDARD NORMAL DISTRIBUTION: Table Values Represent AREA to the LEFT of the Z score.

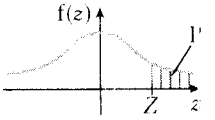
Z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
-3.9	.00005	.00005	.00004	.00004	.00004	.00004	.00004	.00004	.00003	.0000
-3.8	.00007	.00007	.00007	.00006	.00006	.00006	.00006	.00005	.00005	.0000
-3.7	.00011	.00010	.00010	.00010	.00009	.00009	.00008	.00008	.00008	.0000
-3.6	.00016	.00015	.00015	.00014	.00014	.00013	.00013	.00012	.00012	.0001
-3.5	.00023	.00022	.00022	.00021	.00020	.00019	.00019	.00018	.00017	.0001
-3.4	.00034	.00032	.00031	.00030	.00029	.00028	.00027	.00026	.00025	.0002
-3.3	.00048	.00047	.00045	.00043	.00042	.00040	.00039	.00038	.00036	.0003
-3.2	.00069	.00066	.00064	.00062	.00060	.00058	.00056	.00054	.00052	.0005
-3.1	.00097	.00094	.00090	.00087	.00084	.00082	.00079	.00076	.00074	.0007
-3.0	.00135	.00131	.00126	.00122	.00118	.00114	.00111	.00107	.00104	.0010
-2.9	.00187	.00181	.00175	.00169	.00164	.00159	.00154	.00149	.00144	.0013
-2.8	.00256	.00248	.00240	.00233	.00226	.00219	.00212	.00205	.00199	.0019
-2.7	.00347	.00336	.00326	.00317	.00307	.00298	.00289	.00280	.00272	.0026
-2.6	.00466	.00453	.00440	.00427	.00415	.00402	.00391	.00379	.00368	.0035
-2.5	.00621	.00604	.00587	.00570	.00554	.00539	.00523	.00508	.00494	.0048
-2.4	.00820	.00798	.00776	.00755	.00734	.00714	.00695	.00676	.00657	.0063
-2.3	.01072	.01044	.01017	.00990	.00964	.00939	.00914	.00889	.00866	.0084
-2.2	.01390	.01355	.01321	.01287	.01255	.01222	.01191	.01160	.01130	.0110
-2.1	.01786	.01743	.01700	.01659	.01618	.01578	.01539	.01500	.01463	.0142
-2.0	.02275	.02222	.02169	.02118	.02068	.02018	.01970	.01923	.01876	.0183
-1.9	.02872	.02807	.02743	.02680	.02619	.02559	.02500	.02442	.02385	.0233
-1.8	.03593	.03515	.03438	.03362	.03288	.03216	.03144	.03074	.03005	.0293
-1.7	.04457	.04363	.04272	.04182	.04093	.04006	.03920	.03836	.03754	.0367
-1.6	.05480	.05370	.05262	.05155	.05050	.04947	.04846	.04746	.04648	.0455
-1.5	.06681	.06552	.06426	.06301	.06178	.06057	.05938	.05821	.05705	.0559
-1.4	.08076	.07927	.07780	.07636	.07493	.07353	.07215	.07078	.06944	.0681
-1.3	.09680	.09510	.09342	.09176	.09012	.08851	.08691	.08534	.08379	.0822
-1.2	.11507	.11314	.11123	.10935	.10749	.10565	.10383	.10204	.10027	.0985
-1.1	.13567	.13350	.13136	.12924	.12714	.12507	.12302	.12100	.11900	.1170
-1.0	.15866	.15625	.15386	.15151	.14917	.14686	.14457	.14231	.14007	.1378
-0.9	.18406	.18141	.17879	.17619	.17361	.17106	.16853	.16602	.16354	.1610
-0.8	.21186	.20897	.20611	.20327	.20045	.19766	.19489	.19215	.18943	.1867
-0.7	.24196	.23885	.23576	.23270	.22965	.22663	.22363	.22065	.21770	.2147
-0.6	.27425	.27093	.26763	.26435	.26109	.25785	.25463	.25143	.24825	.2451
-0.5	.30854	.30503	.30153	.29806	.29460	.29116	.28774	.28434	.28096	.2776
-0.4	.34458	.34090	.33724	.33360	.32997	.32636	.32276	.31918	.31561	.3120
-0.3	.38209	.37828	.37448	.37070	.36693	.36317	.35942	.35569	.35197	.3482
-0.2	.42074	.41683	.41294	.40905	.40517	.40129	.39743	.39358	.38974	.3859
-0.1	.46017	.45620	.45224	.44828	.44433	.44038	.43644	.43251	.42858	.4246
-0.0	.50000	.49601	.49202	.48803	.48405	.48006	.47608	.47210	.46812	.4641

STANDARD NORMAL DISTRIBUTION: Table Values Represent AREA to the LEFT of the Z score.

Z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.50000	.50399	.50798	.51197	.51595	.51994	.52392	.52790	.53188	.53580
0.1	.53983	.54380	.54776	.55172	.55567	.55962	.56356	.56749	.57142	.57535
0.2	.57926	.58317	.58706	.59095	.59483	.59871	.60257	.60642	.61026	.61409
0.3	.61791	.62172	.62552	.62930	.63307	.63683	.64058	.64431	.64803	.65173
0.4	.65542	.65910	.66276	.66640	.67003	.67364	.67724	.68082	.68439	.68793
0.5	.69146	.69497	.69847	.70194	.70540	.70884	.71226	.71566	.71904	.72240
0.6	.72575	.72907	.73237	.73565	.73891	.74215	.74537	.74857	.75175	.75490
0.7	.75804	.76115	.76424	.76730	.77035	.77337	.77637	.77935	.78230	.78524
0.8	.78814	.79103	.79389	.79673	.79955	.80234	.80511	.80785	.81057	.81327
0.9	.81594	.81859	.82121	.82381	.82639	.82894	.83147	.83398	.83646	.83891
1.0	.84134	.84375	.84614	.84849	.85083	.85314	.85543	.85769	.85993	.86214
1.1	.86433	.86650	.86864	.87076	.87286	.87493	.87698	.87900	.88100	.88298
1.2	.88493	.88686	.88877	.89065	.89251	.89435	.89617	.89796	.89973	.90147
1.3	.90320	.90490	.90658	.90824	.90988	.91149	.91309	.91466	.91621	.91774
1.4	.91924	.92073	.92220	.92364	.92507	.92647	.92785	.92922	.93056	.93189
1.5	.93319	.93448	.93574	.93699	.93822	.93943	.94062	.94179	.94295	.94408
1.6	.94520	.94630	.94738	.94845	.94950	.95053	.95154	.95254	.95352	.95448
1.7	.95543	.95637	.95728	.95818	.95907	.95994	.96080	.96164	.96246	.96327
1.8	.96407	.96485	.96562	.96638	.96712	.96784	.96856	.96926	.96995	.97062
1.9	.97128	.97193	.97257	.97320	.97381	.97441	.97500	.97558	.97615	.97670
2.0	.97725	.97778	.97831	.97882	.97932	.97982	.98030	.98077	.98124	.98169
2.1	.98214	.98257	.98300	.98341	.98382	.98422	.98461	.98500	.98537	.98574
2.2	.98610	.98645	.98679	.98713	.98745	.98778	.98809	.98840	.98870	.98899
2.3	.98928	.98956	.98983	.99010	.99036	.99061	.99086	.99111	.99134	.99158
2.4	.99180	.99202	.99224	.99245	.99266	.99286	.99305	.99324	.99343	.99361
2.5	.99379	.99396	.99413	.99430	.99446	.99461	.99477	.99492	.99506	.99520
2.6	.99534	.99547	.99560	.99573	.99585	.99598	.99609	.99621	.99632	.99643
2.7	.99653	.99664	.99674	.99683	.99693	.99702	.99711	.99720	.99728	.99736
2.8	.99744	.99752	.99760	.99767	.99774	.99781	.99788	.99795	.99801	.99807
2.9	.99813	.99819	.99825	.99831	.99836	.99841	.99846	.99851	.99856	.99861
3.0	.99865	.99869	.99874	.99878	.99882	.99886	.99889	.99893	.99896	.99900
3.1	.99903	.99906	.99910	.99913	.99916	.99918	.99921	.99924	.99926	.99929
3.2	.99931	.99934	.99936	.99938	.99940	.99942	.99944	.99946	.99948	.99950
3.3	.99952	.99953	.99955	.99957	.99958	.99960	.99961	.99962	.99964	.99965
3.4	.99966	.99968	.99969	.99970	.99971	.99972	.99973	.99974	.99975	.99976
3.5	.99977	.99978	.99978	.99979	.99980	.99981	.99981	.99982	.99983	.99983
3.6	.99984	.99985	.99985	.99986	.99986	.99987	.99987	.99988	.99988	.99989
3.7	.99989	.99990	.99990	.99990	.99991	.99991	.99992	.99992	.99992	.99992
3.8	.99993	.99993	.99993	.99994	.99994	.99994	.99994	.99995	.99995	.99995
3.9	.99995	.99995	.99996	.99996	.99996	.99996	.99996	.99996	.99997	.99997

Percentage points of the normal distribution

The values z in the table are those which a random variable $Z \sim N(0,1)$ exceeds with probability p; that is, $P(Z > z) = p$.



p	z	p	z
0.5000	0.0000	0.0500	1.6449
0.4000	0.2533	0.0250	1.9600
0.3000	0.5244	0.0100	2.3263
0.2000	0.8416	0.0050	2.5758
0.1500	1.0364	0.0010	3.0902
0.1000	1.2816	0.0005	3.2905

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THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Postgraduate Sessional Examination

Monday 29th June 2020

MBS 5022: STRATEGIC MANAGEMENT

Instructions

Time Allowed: **3 hours**

There **Seven (7)** questions in this paper

You are required to answer **five (5)** questions

Section **A**: **Compulsory**

Section **B:** Answer any three **(3)** questions

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

SECTION A: COMPULSORY

READ THE CASE BELOW AND ANSWER THE QUESTIONS THAT FOLLOW

ZODIAC: INFLATABLE DIVERSIFICATIONS

An organisation may seek the benefits of synergies by building a portfolio of businesses through related diversification

The Zodiac Company was founded near Paris, France, in 1896 by Maurice Mallet just after his first hot-air balloon ascent. For 40 years, Zodiac manufactured only dirigible airships. In 1937, the German Zeppelin Hindenburg crashed near New York, which abruptly stopped the development of the market for airships. Because of the extinction of its traditional activity, Zodiac decided to leverage its technical expertise and moved from dirigibles to inflatable boats. This diversification proved to be very successful: in 2004, with over 1 million units sold in 50 years, the Zodiac rubber dinghy (priced at approximately A10, 000 (£7,000)) was extremely popular worldwide. However, because of increasing competition, especially from Italian manufacturers, Zodiac diversified its business interests. In 1978, it took over Aerazur, a company specialising in parachutes, but also in life vests and inflatable life rafts. These products had strong market and technical synergies with rubber boats and their main customers were aircraft manufacturers. Zodiac confirmed this move to a new market in 1987 by the takeover of Air Cruisers, a manufacturer of inflatable escape slides for aircraft. As a consequence, Zodiac became a key supplier to Boeing, McDonnell Douglas and Airbus. Zodiac strengthened this position through the takeover of the two leading manufacturers of aircraft seats: Sicma Aero Seats from France and Weber Aircraft from the USA. In 1997, Zodiac also took over, for A150m, MAG Aerospace, the world leader for aircraft vacuum waste systems. Finally, in 1999, Zodiac took over Inter-technique, a leading player in active components for aircraft (fuel circulation, hydraulics, oxygen and life support, electrical power, flight-deck controls and displays, systems monitoring, etc.). By combining these competences with its traditional expertise in inflatable products, Zodiac launched a new business unit: airbags for the automobile industry. In parallel to these diversifications, Zodiac strengthened its position in inflatable boats by the takeover of several competitors: Bombard L'Angevinière in 1980, Sevylor in 1981, Hurricane and Metzeler in 1987. Finally, Zodiac developed a swimming-pool business. The first product line, back in 1981, was based on inflatable structure technology, and Zodiac later moved – again through takeovers – to rigid above-ground pools, modular in-ground pools, pool cleaners and water purification systems, inflatable beach gear and air mattresses. In 2003, total sales of the

Zodiac group reached A1.48bn with a net profit of A115m. Zodiac was a very international company, with a strong presence in the USA. It was listed on the Paris Stock Exchange and rumours of takeovers from powerful US groups were frequent. However, the family of the founder, institutional investors, the management and the employees together held 55 per cent of the stocks. Far above the marine and the leisure businesses, aircraft products accounted for almost 75 per cent of the total turnover of the group. Zodiac held a 40 per cent market share of the world market for some airline equipment: for instance, the electrical power systems of the new Airbus A380 were Zodiac products. In 2004, Zodiac even reached Mars: NASA Mars probes Spirit and Opportunity were equipped with Zodiac equipment, developed by its US subsidiary Pioneer Aerospace.

Question One

a) What were the bases of the synergies underlying each of Zodiac's diversifications? (12 marks)

b) What are the advantages and potential dangers of such a basis of diversification? (8 marks)

Question Two

a) Outline the benefits and risks of Acquisitions and Mergers. (8 marks)

b) Describe any four (4) external environmental factors that can have an influence on Zodiac. (12 marks)

Total: 40 marks

SECTION B: ANSWER ANY THREE (3) QUESTIONS

Question Three

Describe the strategic directions a company can pursue using Ansolf matrix (intensive strategies), use practical examples of businesses that have used these strategies successfully. (20 marks)

Question Four

There are a number of options for structuring an organisation, depending on a number of factors, such as, the nature of product offering or the size of the organisation.

Identify any four (4) of these structures and for each of these outline advantages and disadvantages, and a graphical illustration. (20 marks)

Question Five

The product lifecycle is a model that shows how sales volume changes over the life of products. Understanding the four stages in the product life cycle helps managers recognize that strategies need to evolve over time.

a) Describe any four (4) stages of the product life cycle. (8 marks)
b) Identify and explain strategies appropriate at each stage of the life cycle that managers can adopt. (12 marks)

Total: 20 marks

Question Six

a) Outline any three (3) pitfalls in strategic planning that all managers should watch out for. (6 marks)
b) Explain any four (4) issues in strategy implementation and give any two (2) reasons why implementation may fail. (14 marks)

Total: 20 marks

Question Seven

The world is fast shrinking into one big global market and most business firms are aligning their strategies in order to gain or increase their share on the global market.

a) Explain any four (4) factors that a business needs to take into consideration as it plans to enter international markets. (12 marks)
b) What is environmental sustainability? And why is it a strategic issue? (8 marks)

Total: 20 marks

End of exam!

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Postgraduate Sessional Examination

Tuesday 8 December 2020

MBS 5022: STRATEGIC MANAGEMENT

Instructions

Time Allowed: **3 hours**

There **six (6)** questions in this paper

Section A is **compulsory:** answer **both** questions

Section B: **answer any two (2) questions**

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

SECTION A: COMPULSORY

Read the case and answer question one

Evolution of Strategy at Procter & Gamble

Founded in 1837, Cincinnati-based Procter & Gamble has long been one of the world's most international companies. Today P&G is a global colossus in the consumer products business with annual sales in excess of $50 billion, some 54 percent of which are generated outside of the United States. P&G sells more than 300 brands including Ivory soap, Tide, Pampers, IAM pet food, Crisco, and Folgers-to consumers in 160 countries. Historically the strategy at P&G was well established.

The company developed new products in Cincinnati and then relied on semi-autonomous foreign subsidiaries to manufacture, market, and distribute those products in different nations. In many cases, foreign subsidiaries had their own production facilities and tailored the packaging, brand name, and marketing message to local tastes and preferences. For years this strategy delivered a steady stream of new products and reliable growth in sales and profits. By the 1990s, however, profit growth at P&G was slowing. The essence of the problem was simple; P&G's costs were too high because of extensive duplication of manufacturing, marketing, and administrative facilities in different national subsidiaries. The duplication of assets made sense in the world of the 1960s, when national markets were segmented from each other by barriers to cross-border trade. Products produced in Great Britain, for example, could not be sold economically in Germany due to high tariff duties levied on imports into Germany. By the 1980s, however, barriers to cross-border trade were falling rapidly worldwide and fragmented national markets were merging into larger regional or global markets. Also, the retailers through which P&G distributed its products were growing larger and more global, such as Wal-Mart, Tesco from the United Kingdom, and Carrefour from France. These emerging global retailers were demanding price discounts from P&G.

In the 1990s P&G embarked on a major reorganization in an attempt to control its cost structure and recognize the new reality of emerging global markets. The company shut down some 30 manufacturing plants around the globe, laid off 13,000 employees, and concentrated production in fewer plants that could better realize economies of scale and serve regional markets. It wasn't enough! Profit growth remained sluggish so in 1999 P&G launched its second reorganization of the decade. Named "Organization 2005;' the goal was to transform P&G into a truly global

company. The company tore up its old organization, which was based on countries and regions, and replaced it with one based on seven self-contained global business units, ranging from baby care to food products. Each business unit was given complete responsibility for generating profits from its products, and for manufacturing, marketing, and product development. Each business unit was told to rationalize production, concentrating it in fewer larger facilities; to try to build global brands wherever possible, thereby eliminating marketing difference between countries; and to accelerate the development and launch of new products. P&G announced that as a result of this initiative, it would close another 10 factories and lay off 15,000 employees, mostly in Europe where there was still extensive duplication of assets. The annual cost savings were estimated to be about $800 million. P&G planned to use the savings to cut prices and increase marketing spending in an effort to gain market share, and thus further lower costs through the attainment of scale economies. This time the strategy seemed to be working. For most of the 2000s P&G reported strong growth in both sales and profits. Significantly, P&G's global competitors, such as Unilever, Kimberly-Clark, and Colgate-Palmolive, were struggling during the same time period.

Question One

a) What strategy was Procter & Gamble pursuing when it first entered foreign markets in the period up until the 1980s? (10 marks)

b) Why do you think this strategy became less viable in the 1990s? (6 marks)

c) What strategy does P&G appear to be moving toward? What are the benefits of this strategy? What are the potential risks associated with it? (14 marks)

Question Two

a) Explain the rational for pursuing an international market strategy. (5 marks)

b) Explain any three (3) international market entry strategies. (15 marks)

Total: 50 marks

SECTION B: ANSWER ANY TWO (2) QUESTIONS

Question Three

a) According to Michael Porter's five forces, 'The threat of new entrants depends on the barriers to entry.' Explain any five (5) factors that may act as barriers to entry for new firms. (10 marks)

b) Explain how the PESTLE factors can influence Organisational performance. (15 marks)

Total: 25 marks

Question Four

Discuss Ansoff's Intensive Strategies that a firm can use for its competitive position. Give examples of firms that have successfully used the strategies. (25 marks)

Question Five

a) Discuss any four (4) issues that should be addressed during strategy implementation. (20 marks)

b) Outline any four (4) barriers that might impede successful implementation of strategy. (5 marks)

Total: 25 marks

Question Six

a) Describe the steps in strategic planning. (12 marks)

b) Crafting a company's strategy cannot be a one-time, once-and-for-all managerial exercise. With this in mind, explain why a company's strategy cannot be completely planned out in advance. (13 marks)

Total: 25 marks

End!

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

MBS 5022: STRATEGIC MANAGEMENT

FINAL EXAMINATION

Instructions

Answer all **THREE** questions.

Three hours' time allocation.

Do not turn this page uncles told so.

Question One (40 marks)

ADVERTISEMENT

BUSAKA PLC THE CLEANING COMPANY YOU CAN TRUST

The BKClean is a superb small office cleaning system which provides the ability to clean carpets, wooden floors, wall coverings and windows without having to assemble complicated attachments. It may cost a bit more than others, but this state-of-the-art machine now has a computerised monitoring system into which you program office details, and which remembers the optimum cleaning cycle and prompts you when necessary.

If you prefer a cleaning service, we provide that too with BKServe, and our experienced operatives will arrive with the BKClean containing your personalised computer chip. We can sell you the machine or we can deliver the service: take your choice.

The following discussion took place at a recent Busaka management meeting.

Accountant: I am concerned about the low profitability on our cleaning service business and the cost of servicing the debt incurred in setting up the infrastructure and buying vehicles. We make a lot more profit producing BKCleans.

Production manager: I have been in charge of making the BKClean for 20 years and I now have a smooth operation. Since we started the BKServe business two years ago, however, things have become more difficult to manage. We seem to have a lot of excess capacity; I estimate that our cleaning people and their equipment are idle for about 30% of the time, and I am really worried about the attrition rate of employees.

Human resource manager: We are now employing a different kind of person for the BKServe cleaning service; we have gone to a lot of trouble to generate good relations with our factory workforce, but the same spirit is difficult to achieve with the cleaning employees. For example, they are never all here, they work different hours and, of course, we pay them much less.

CEO: I can't see why things should be like this, given that we have expanded into the same type of business. I think our computerised BKClean system is a world beater. What does our new marketing manager have to say?

Marketing manager: The market for BKCleans has been stable for a long time but recently there are signs that this is changing. Far fewer offices want to organise their own cleaning and I am not sure what will happen to our market if the economy stops growing. At the same time the cleaning service business is booming and highly competitive and I am not sure that customers care that our operatives are using the BKClean so long as they get a good job done.

CEO: Here are a couple of thoughts. I wonder if we should be going into new markets such as cleaning specialised fabrics. I think we are probably spending too much money on marketing.

Busaka plc

Operating Account at end year: Cost, revenue, and gross profit ($000)

		SALES REVENUE	11 565
COST OF GOODS SOLD	8 789		
		GROSS PROFIT	2 776

Operating Account at end year: Overheads and Operating Surplus ($000)

Factory costs	500		
Corporate HQ	750		
TOTAL OVERHEAD	1250		
		OPERATING SURPLUS	526

Cash Flow for year ($000)

OUTLAY		INCOME	
Material purchase	1 393	Interest on assets	100
Long-term loan interest	560		
Wage cost	4500		
After sales support	329		
Assembly line cost	900		
Vehicles & Equipment	540		
Product development	525		
Product marketing	1091		
Hire & Fire	675		
Warehousing	187		
Total overhead	1250	Sales revenue	11665
Total outlay	11950	Total Income	11665
		NET CASH FLOW	–285

Balance Sheet at end year ($000)

FIXED ASSETS			
Factory 4000	4000		
Plant 10000	10000		
Vehicles and Equipment	5000		
TOTAL FIXED ASSETS		19000	
CURRENT ASSETS			
Raw materials	600		
Finished goods	1809		
Cash	2000		
TOTAL CURRENT ASSETS		4409	
TOTAL ASSETS			23409
OWNERS' EQUITY		15409	
Long-term debt	8000		
TOTAL DEBT		8000	
TOTAL LIABILITIES			23409

Report on Products for Year

	BKClean	BKServe		BKClean	BKServe
rket share (%)	30	Low			
			Composition of supply (units)		
ders	3000	4050	Output	3900	4050
Serve use	100	na			
rranty returns	90	na	Inventory (year beginning)	800	na
TAL DEMAND	3190	4050	TOTAL SUPPLY	4700	4050
			Distribution of supply		
			Warranty returns	90	na
			Sales to orders	3000	4050
			BKServe use 100	100	
rking time (%)	100	115	Inventory (year end)	1510	na
our attrition rate (%)	5	20			
ce ($/unit)	2100	1300	(Average price of a cleaning contract)		
mpeting price ($/unit)	1800	Similar			
count at end year					
ge cost ($000)	1500	3000			
sembly line cost ($000)	900				
hicles & Equipment ($000)		540			
er sales ($000)	329	na			
st of material used ($000)	488	405			
duct Development ($000)	525	na			
duct Marketing ($000)	670	421			
e/Fire ($000)	75	600			
rehousing ($000)	187	na	SALES REVENUE ($000)	6300	5265
			COST OF GOODS SOLD		
TAL COST ($000)	4673	4966	($000)	3823	4966
it cost ($/unit)	1198	1226	GROSS PROFIT ($000)	2477	299

Required:

1. Assess Busaka's diversification into cleaning services using strategy models, taking into account both supply chain and market factors. (30 marks)

2. Starting with a SWOT analysis, set out the strategic futures for Busaka PLC as you imagine it would be visualised by a) the CEO and b) the marketing manager. (10 marks)

Question Two (30 marks)

Vuitton – expensive success

Have you ever seen a Louis Vuitton bag marked down in price in a sale? The answer is no, and you never will. Have you ever had to pay for the repair of a Vuitton product? The answer is no, and you never will because repairs are free. Was Vuitton hit by the global downturn in the early 2000s like other luxury producers? The answer is no. In fact, Vuitton increased both profits and margins during that period and the share price almost doubled in 2003/04. So, does having one of the world's most famous brands guarantee success? The answer is no, because other equally famous brands have suffered during the recession. So perhaps there is something special about Vuitton's management.

Market position

Vuitton has the biggest market share in the luxury goods sector:

Brand	Sales ($billion)	Operating Margin (%)	Market Share (%)
Vuitton	3.8	45	37
Prada	1.95	13	19
Gucci	1.85	27	18
Hermes	1.57	25	15
Coach	1.2	30	12

The calculated market share is a rough indicator that takes the big five as the total market in prestige consumer goods. Vuitton probably has less than one-third of the total luxury goods market but in relative terms, it is twice as big as its nearest competitor.

Vuitton has focused on establishing brand loyalty and many customers have started with relatively cheap items and move up to lines such as Suhali, a goatskin bag costing about $2,000.

On the other hand, Vuitton is heavily dependent on certain markets: for example, 55% of sales are to Japanese customers. This dates back to before 1989 when Vuitton was owned by the Racamier family, which had targeted Japan, and by the time Vuitton was acquired by Bernhard Arnault, Japanese sales accounted for 75% of the total. The CEO of Louis Vuitton since 1990, Mr Yves Carcelle, is credited with masterminding Vuitton's growth and takes the view that as living standards grow internationally there is no constraint to Vuitton's continuing expansion. Growth under Mr Carcelle has been extraordinary: sales multiplied six times up to 2004, margins increased from 9% to 45%, and by 2004 the company was clocking up an annual growth rate of 16%.

Vuitton has not been afraid to take chances, for example, by employing the 'grunge' designer Jacobs, who has increased Vuitton's attraction to a younger clientele and now accounts for 15% of sales.

Making the goods

On the manufacturing side, Emmanuel Mathieu was appointed in 2000 to head the industrial operations and has increased productivity by 5% per year by introducing many efficiency improvements ranging from new leather cutting machines to quality-circles type teams. The launch time for a new product has been reduced from one year to six months in the space of five years. This type of managerial input has transformed Vuitton from being a large-scale cottage industry to a modern business. But it is still highly labour intensive, and the average bag output is five per day per employee.

It is clearly important to achieve the right balance between mechanisation and handmade production. One observer compared Vuitton with Hermes, where at Hermes it was like stepping back in time with rows of employees doing nothing but stitching. A Hermes bag is, in fact, more expensive than Vuitton but, as can be seen from the Table, Hermes' operating margin is much lower.

An example of how a new product launch can work is the Boulogne Multicolor, a shoulder bag costing about $1,500. When following up on the success of the Murakami line, marketing executives surveyed store managers and found that many customers were asking for a Murakami shoulder bag. Technicians in the marketing workshop took the classic Boulogne shoulder bag, reworked it and then had the prototype approved by the senior management team; this bypassed the normal design procedures. The bag then went straight into production using existing templates.

In Vuitton factories, teams are between 20 and 30 strong and take on one product at a time; members are encouraged to make suggestions and are kept informed about sales performance. The goal is for individuals to be multi-skilled and for teams to be autonomous. This has contributed to fast problem solving so that products such as the Boulogne Multicolor can pass through the system quickly in response to marketing needs. One result is that production has remained in France rather than in countries where labour costs are lower. Mr Mathieu states that French production is a guarantee of quality.

Going for growth

During the recession after 2000, Vuitton increased advertising by about 20% at a time when competitors were cutting advertising budgets; not only that, but a new global campaign was initiated featuring Jennifer Lopez and a series of supermodels. This has resulted in a higher brand profile, but because of Vuitton's size advertising spend is still only 5% of sales compared with the industry average of 10%.

During the course of ten years, Vuitton has expanded internationally and doubled its retail network to 318 stores in 51 countries by 2004. Vuitton was the first luxury group to open a

store in Shanghai in 1992, and mainland China accounted for 8% of sales by 2004. The first store in India was opened in 2004. Entering new markets is not taken lightly. Planning for the Indian enterprise, for example, started in 1999 when a Vuitton team visited India with a view to determining how the rich spent their money.

International expansion is about more than establishing stores in new locations. The worldwide brand awareness generated by presence in countries such as India and China means that when international travellers journey abroad they will be aware of the existence of the brand, and its cachet is introduced to the segment in new countries.

So, is Vuitton unstoppable?

A serious threat is counterfeiting, mainly from China. Oddly enough, the Chinese do not buy counterfeits, preferring the real thing, and most copies are sold to tourists or exported.

The drive for growth poses risks. In 2003, for example, Vuitton opened 18 new stores, double the number of openings ten years ago. This poses strains on the distribution network and means that the company has to increase its vigilance to ensure that quality standards are not compromised. It is imperative that discipline is maintained.

Louis Vuitton is only part of the LVMH holding company which extends over wines & spirits, perfumes & cosmetics, watches & jewellery and selective retailing, and includes such brands as the duty-free retail chain DFS, Christian Lacroix and Givenchy. It is estimated that 80% of LVMH profits come from Vuitton. This has been noted by analysts and in 2004 LVMH won a court ruling against a Morgan Stanley analyst on the basis that he had downgraded LVMH shares unfairly; in his view Vuitton was a mature business.

1) The fashion industry is usually regarded as highly competitive. How did Vuitton tackle this competitive environment? (Use the 5 forces.) (5 marks)

2) Explain Vuitton's success using the process model. (25 marks)

Question Three (30 marks)

IdealFuniture – the Zambian pride

IdealFuniture Limited Company is a growing indigenous Zambian company which manufactures high quality furniture for both office and home decor. Domestically *IdealFuniture* is a market leader supplying 83% of all the high-quality furniture in the industry. Mr Ng'andu Hankuku the current Chairman of the Board for *IdealFuniture* Limited Company is contemplating growth in other markets starting with other Southern African Countries before expanding to the whole of Africa and beyond. Mr. Hankuku has approached his long-time business mentor Mr. Chibamba Kanyama to seek advice on the prospects of turning *IdealFuniture* into an international company. Mr. Kanyama explains that: -

> "The impact of the national environment on the competitiveness of individual companies is largely determined by the Competitive Advantage of Nations. A company must understand if it has a country specific or a company specific advantage. If the advantage is country specific, then foreign markets can be exploited by exporting. If the advantage is company specific, it can invest in the country concerned provided that these advantages can be transferred from one country to another (management skills, production techniques). For us to have a decent conversation I'd like you to conduct IdealFuniture business competitiveness using Porter's Diamond Framework. Once done, come back for our usual analysis."

1) What is the relevance of Porter's Diamond Framework in analysing *IdealFuniture* competitive advantage internationally? (20 marks)

2) Will *IdealFuniture* succeed internationally? (10 marks)

TOTAL 100 MARKS

End of Examination

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THE UNIVERSITY OF ZAMBIA

Graduate School of Business

UNIVERSITY POST GRADUATE EXAMINATIONS (SUP/DEF)

MBS6021–PROJECT MANAGEMENT

JANUARY 2020

TIME : Three (3) hours

INSTRUCTIONS : : Answer Question 1 and any other four questions

All Questions Carry Equal Marks

QUESTION 1

1. The project life cycle is comprised of which of the following?

   A. Phases
   B. Milestones
   C. Estimates
   D. Activities

2. Marcy, the project manager for the ERP Project, is about to complete the Project Phase Review. The completion of a project phase is also known as which of the following?

   A. Lessons learned
   B. Kill points
   C. Earned Value Management
   D. Conditional advancement

3. Which of the following is not a key stakeholder in a project that creates a service internal to an organization?

   A. Project manager
   B. External customers
   C. Project vendors
   D. Project team members

4. Of the following management skills, which will a project manager use most?

   A. Leading
   B. Communication
   C. Influencing the organization
   D. Negotiations

5. Managing is best described as which one of the following?

   A. Establishing direction
   B. Functional controls over the project team and stakeholders
   C. Consistently producing key results expected by stakeholders
   D. Motivating and inspiring the project team to produce results that are expected by project stakeholders

6. The ongoing process of project planning is also known as _____.

   A. Constant integration planning
   B. Rolling wave planning
   C. Continuous planning
   D. Phase gates

7. You are the project manager for the AQA Project. You would like to include several

of the customers in the project planning sessions. Your project leader would like to know why the stakeholders should be involved-your project team will be determining the best method to reach the project objectives. You should include the stakeholders because _____.

A. It generates goodwill between the project team and the stakeholders
B. It allows the stakeholders to see the project manager as the authority of the project
C. It allows the project team to meet the stakeholders and express their concerns regarding project constraints
D. It allows the stakeholders to realize the shared ownership of the project

8. You have requested that several of the stakeholders participate in the different phases of the project. Why is this important?

A. It prevents scope creep.
B. It allows for scope constraints.
C. It improves the probability of satisfying the customer requirements.
D. It allows for effective communications.

9. The information from the planning phase is input into which of the following processes?

A. Initiating
B. Controlling
C. Executing
D. Closing

10. The information from the initiating phase is input into which of the following processes?

A. A. Planning
B. Executing
C. Controlling
D. All of the project phases

11. You are the project manager of the MMB Project. The president of the company has spoken to the project team and told them the confidence and respect he has in you to lead the project to a successful completion. The project manager has what type of power on this project?

A. Formal power
B. Coercive power
C. Expert power
D. Halo power

12. Management has approached Tyler, one of your project team members. Tyler is a database administrator and developer, whose work is always on time, accurate, and of quality. He also has a reputation of being a "good guy" and is well liked. Because of this,

management has decided to move Tyler into the role of a project manager for a new database administration project. This is an example of which of the following?

A. Management by exception
B. The halo effect
C. Management by objectives
D. McGregor's Theory of X and Y

13. Susan is the project manager for the PMG Project. She makes all decisions on the project team regardless of the project team objections. This is an example of which of the following management styles?

A. Autocratic
B. Democratic
C. Laissez faire
D. Exceptional

14. Which problem-solving technique is the best for most project management situations?

A. Confronting
B. Compromising
C. Forcing
D. Avoidance

15. Harold is a very outspoken project team member. All of the project team members respec Harold for his experience with the technology, but often things have to go in Harold's favor or things do not go well. During a discussion on a solution, a project team member waves her arms and says, "Fine, Harold, do it your way." This is an example of which of the following?

A. A win-win solution
B. A leave-lose solution
C. A lose-lose solution
D. A yield-lose solution

16. Which of the following is an output of scope change control?

A. Workarounds
B. Corrective action
C. Transference
D. Risk assessment

17. You are the project manager for the JHG Project. Your project is to create a new product for your industry. You have recently learned your competitor is also working on a similar project but their offering will include a computer-aided program and web-based tools, which the project does not offer. You have implemented a change request to update your project. This

is an example of which of the following?

A. A change due to an error and omission in the initiation phase
B. A change due to an external event
C. A change due to an error or omission in the planning phase
D. A change due to a legal issue

18. You are the project manager for a pharmaceuticals company. A new government regulation will change your project scope. For the project to move forward and be in accordance with the new regulation, your next action should be?

A. Prepare a new baseline to reflect the government changes
B. Notify management
C. Present the change to the CCB
D. Create a feasibility study

19. You have finished the project scope according to plan. For the customer to accept the project what must happen next?

A. Nothing. The plan is complete so the project is complete.
B. Scope verification should be conducted
C. Lessons learned should be finalized
D. Proof-of-concept should be implemented

20. You are the project manager for an airplane manufacturer. Your project concerns the development of lighter, stronger material for commercial jets. As the project moves towards completion, the material is defined in more detail after each phase of materials testing. This is an example of which of the following?

A. Program management
B. Progressive elaboration
C. Quality assurance
D. Regulatory guidelines

[20 MARKS]

QUESTION 2

a) Swanson Industries has a project with the following projected cash flows:

i. Initial Cost, Year 0: $240,000
ii. Cash flow year one: $25,000
iii. Cash flow year two: $75,000
iv. Cash flow year three: $150,000
v. Cash flow year four: $150,000

Using a 10% discount rate for this project and the NPV model should this project be accepted or rejected?

10 marks

b) For each row on the following chart, enter the letter of the project you would select based on the information provided.

	Project A	Project B	Which project would you pick
Net present value	$95,000	$75,000	
IRR	13 percent	17 percent	
Payback period	16 months	21 months	
Benefit cost ratio	2.79	1.3	

4 marks

c) Why should an organization not rely only on ROI to select projects?

6 marks

QUESTION 3

Mini-Case Study: Project Management at Kombs Engineering

In June 1993, Kombs Engineering had grown to a company with $25 million in sales. The business base consisted of two contracts with the U.S. Department of Energy (DOE), one for $15 million and one for $8 million. The remaining $2 million consisted of a variety of smaller jobs for $15,000 to $50,000 each

The larger contract with DOE was a five-year contract for $15 million per year. The contract was awarded in 1988 and was up for renewal in 1993. DOE had made it clear that, although they were very pleased with the technical performance of Kombs, the follow-on contract must go through competitive bidding by law. Marketing intelligence indicated that DOE intended to spend $10 million per year for five years on the follow-on contract with a tentative award date of October 1993

On June 21, 1993, the solicitation for proposal was received at Kombs. The technical requirements of the proposal request were not considered to be a problem for Kombs. There was no question in anyone's mind that on technical merit alone, Kombs would win the contract. The more serious problem was that DOE required a separate section in the proposal on how Kombs would manage the $10 million/year project as well as a complete description of how the project management system at Kombs functioned

When Kombs won the original bid in 1988, there was no project management requirement. All projects at Kombs were accomplished through the traditional organizational structure. Line managers acted as project leaders.

In July 1993, Kombs hired a consultant to train the entire organization in project management. The consultant also worked closely with the proposal team in responding to the DOE project management requirements. The proposal was submitted to DOE during the second week of August. In September 1993, DOE provided Kombs with a list of questions concerning its proposal. More than 95 percent of the questions involved project management. Kombs responded to all questions.

In October 1993, Kombs received notification that it would not be granted the contract. During a post-award conference, DOE stated that they had no "faith" in the Kombs project management system. Kombs Engineering is no longer in business.

QUESTIONS

Comment on the following aspects of the case study:

a) What was the reason for the loss of the contract?

[5 MARKS]

b) Could it have been averted? Justify your answer.

[7 MARKS]

c) Does it seem realistic that proposal evaluation committees could consider project management expertise to be as important as technical ability?

[8 MARKS]

QUESTION 4

The activities, their durations and precedences for designing, writing and installing a **Innovations** computer database are shown in Table Q4.

TableQ4 Innovations computer database activities

	Activity	*Duration in weeks*	*Activities that must be completed before it can start*
1	Contract negotiation	1	–
2	Discussions with main users	2	1
3	Review of current documentation	5	1
4	Review of current systems	6	2
5	Systems analysis (a)	4	3, 4
6	Systems analysis (b)	7	5
7	Programming	12	5
8	Testing (prelim)	2	7
9	Existing system review report	1	3, 4
10	System proposal report	2	5, 9
11	Documentation preparation	19	5, 8
12	Implementation	7	7, 11
13	System test	3	12
14	Debugging	4	12
15	Manual preparation	5	11

a) By use of network analysis determine is the earliest time that the operation might be completed?

[15 MARKS]

b) Which of the activities are on the critical path?

[5 MARKS]

QUESTION 5

CompuX Systems is a small information systems consulting firm located in Kabulonga, Lusaka. CompuX has just been hired to design and install a local area network (LAN) for the city of Lusaka's social welfare agency. You are the manager for the project, which includes one CompuX professional and two interns from a local university. You have just finished a preliminary scope statement for the project (see below).

PROJECT SCOPE STATEMENT

PROJECT OBJECTIVE

To design and install a new local area network (LAN) within one month with a budget not to exceed K900,000 for the Lusaka Social Service Agency with minimum disruption to ongoing operations.

DELIVERABLES

- Twenty workstations and twenty laptop computers.
- Server with dual-core processors.
- Two color laser printers.
- Windows R2 server and workstation operating system (Windows 10).
- Migration of existing databases and programs to new system.
- Four hours of introduction training for client's personnel.
- Sixteen hours of training for client network administrator.
- Fully operational LAN system.

MILESTONES

1. Hardware August 22.
2. Setting users' priority and authorization August 26.
3. In-house whole network test completed September 1.
4. Client site test completed September 2.
5. Training completed September 16.

TECHNICAL REQUIREMENTS

1. Workstations with 17-inch flat panel monitors, dual-core processors, 4 GB RAM, 8X DVD+RW, wireless card, Ethernet card, 500 GB hard drive.
2. Laptops with 12-inch display monitor, dual-core processors, 2GB RAM, 8X DVD+RW, wireless card, Ethernet card, 500 GB hard drive and weigh less than 2 kg.
3. Wireless network interface cards and Ethernet connections.
4. System must support Windows 11 platforms.

5. System must provide secure external access for field workers.

LIMITS AND EXCLUSIONS

1. On-site work to be done after 8:00 p.m. and before 7:00 a.m. Monday through Saturday.
2. System maintenance and repair only up to one month after final inspection.
3. Warranties transferred to client.
4. Only responsible for installing software designated by the client two weeks before the start of the project.
5. Client will be billed for additional training beyond that prescribed in the contract.

CUSTOMER REVIEW

Director of the city of Lusaka's Social Service Agency.

You are now brainstorming potential risks associated with the project.

a) 1. Identify potential risks associated with this project. Try to come up with at least four different risks.

[4 MARKS]

b) Draw a risk register (log) and populate it with the four perceived risks. Analyse these risks and rank them.

[16 MARKS]

QUESTION 6

You have a project to plant corn in 4 fields each having an area of 20 ha (200000 m^2). Each field is to take one day to plant, and $1,000 has been budgeted per field. The fields were planned to be planted one after the other. Today is the end of day 3. Using the following project status chart, calculate PV, EV, etc., in the spaces provided.

Activity	**Day1**	**Day 2**	**Day 3**	**Day4**	**Status at the end of day 3**
Field1	S-------F				Complete. spent $1000
Field 2		S------PF	-------F		Complete spent $1200
Field 3			PS--S--PF		50% done spent $600
Field 4				PS--PF	Not Yet Started
Key S Start PS planned start F Finish PF Planned Finish					

	What	Calculation	Answer	Interpretation of the answer
a	**PV**			
b	**EV**			
c	**AC**			
d	**BAC**			
e	**CV**			
f	**CPI**			
g	**SV**			
h	**SPI**			
i	**EAC**			
j	**ETC**			

[20 MARKS]

Answer Sheet section A

Computer No. _____

1	a	b	c	d	e
2	a	b	c	d	e
3	a	b	c	d	e
4	a	b	c	d	e
5	a	b	c	d	e
6	a	b	c	d	e
7	a	b	c	d	e
8	a	b	c	d	e
9	a	b	c	d	e
10	a	b	c	d	e
11	a	b	c	d	e
12	a	b	c	d	e
13	a	b	c	d	e
14	a	b	c	d	e
15	a	b	c	d	e
16	a	b	c	d	e
17	a	b	c	d	e
18	a	b	c	d	e
19	a	b	c	d	e
20	a	b	c	d	e

END OF EXAMINATION PAPER

THE UNIVERSITY OF ZAMBIA

Graduate School of Business

UNIVERSITY POST GRADUATE DEFERRED EXAMINATIONS

MBS6021–PROJECT MANAGEMENT

March 2021

TIME : Three (3) hours

INSTRUCTIONS : : Answer Question 1 and any other four questions

All Questions Carry Equal Marks

QUESTION 1

1) You are completing the work defined in the project scope statement of a new software development project when a team member points out that you have an opportunity to deliver enhanced capability to the client at no extra cost, time, or risk to the project. What should you do NEXT?

a) Decline to make the changes and proceed to deliver exactly what the scope statement sets out.

b) Assess the change via the change control process and, if approved, amend the project scope statement.

c) Go ahead and make the changes, and surprise the client with the extra capability.

d) Ask the team member to keep quiet about the changes and ignore her recommendation because it presents too many risks to the project.

2) You are new to a project that has been underway for some time. One of your first jobs as project manager is to familiarize yourself with and understand the scope baseline. What documents will you require in order to do this?

a) The project scope statement, the WBS, and the WBS dictionary

b) The project scope statement, the WBS, and the risk register

c) The WBS, the change register, and the project scope statement

d) The WBS, the project management plan, and the change register

3) You are a project manager and you are working with your sponsor to define and plan a complex project. You plan to complete your initiation and planning documents sequentially to make sure the organization really understands and supports the project. What key deliverables will you produce in the correct order?

a) First the project management plan, then then project charter, and then the project scope statement.

b) First the project charter, then the requirements documentation, and then the project scope statement.

c) First the project charter, then the project scope statement, and then the requirements documentation.

d) First the project management plan, then the requirements documentation, and then the project charter.

4) What is the name of the planning document that describes how requirements will be analyzed, documented, and managed?

a) Requirements traceability matrix

b) Scope management plan

c) Requirements management plan

d) Requirements scope statement

5) Customer satisfaction means that customer requirements are met. Meeting customer requirements requires a combination of what two factors?

a) Continuous improvement and prevention over inspection
b) Conformance to requirements and prevention over inspection
c) Continuous improvement and fitness for use
d) Conformance to requirements and fitness for use

6) Modern quality management complements project management very highly, with both disciplines recognizing the importance of all the following characteristics except?

a) Customer satisfaction

b) Prevention over inspection

c) Continuous improvement

d) Total quality management (TQM)

7) Quality is planned, designed, and built into your project instead of being inspected in. What is the main reason that prevention of mistakes in quality is preferred over finding the mistakes via inspection?

a) Because finding defects via inspection should be avoided at all costs.

b) Because if you are a good project manager and perform prevention well, you won't have to deal with inspection.

c) Because the cost of preventing mistakes is generally much less than the cost of correcting them when they are found by inspection.

d) Because your quality management plan focuses on prevention.

8) How would you best describe to your client the difference between precision and accuracy?

a) Precision means the degree to which there is conformance to requirements. Accuracy refers to fitness for use.

b) Precision means the values of the repeated measurements are clustered and have little scatter. Accuracy means that the measured value is very close to the true value.

c) Precision is the degree to which the project quality assurance processes are being met. Accuracy is the degree to which the product meets customer specifications.

d) Precision is the ability to provide information to a six sigma level. Accuracy is the process of ensuring that the six sigma target is met.

9) A member of your project team seems confused about the differences between quality approaches to the project and product. How would you best explain these differences?

a) Quality in relation to the project relates to the processes and procedures that run the project. Quality in relation to the product looks at conformance to requirements and fitness of use.

b) There is no difference between the two.

c) Quality in relation to the project is focused on ensuring the project control and reporting are accurate. Quality in relation to the product ensures that it stays within the upper and lower control limits.

d) Quality in relation to the project is focused on the preparation and execution of the quality management plan. Quality in relation to the product is set solely by the customer.

10) Your project is behind schedule and you have asked your project team to work longer hours to make up the time so that the customer's needs are met as planned. As project manager, you should monitor your quality management plan for what reason?

a) Meeting customer requirements by overworking the project team may result in increased employee attrition, errors, or rework.

b) The customer requirements and specifications can change rapidly during periods of rework as the customer sees opportunities to make changes.

c) Achieving customer needs is not the primary focus of the quality management plan, and you need to make sure your team is working on project quality, not product quality, at these times.

d) The overtime cost incurred will take away the project budget assigned to the implementation of the quality management plan.

11) Your team is confused because they use terminology and words in projectcommunications that appear to have interchangeable meanings, but other teams treatthese terms as though they have specific, unique meanings. How can your team find outwhat the terms mean?

a) Designing a new software solution.

b) Building a new house.

c) Regularly achieving 3% growth on last year's sales figures.

d) Implementing a new business process or procedure.

12) You are delivering an introduction to a project management trainingsession to new team members. One team member appears confused about the exactdefinition of a project. What is the BEST definition of a project?

a) A temporary endeavor undertaken to create a unique product, service, or result.

b) A body of work constrained by finances and time.

c) An organized effort of work by a team managed by a project manager.

d) The ongoing management of a business enterprise to achieve profitability.

13) Your team seems confused about whether the work they are doing meetsthe definition of a project. To help them understand the difference between projectizedand operational work you give them the following examples. Which of the following is notan example of a project?

a) Designing a new software solution.

b) Building a new house.

c) Regularly achieving 3% growth on last year's sales figures.

d) Implementing a new business process or procedure.

14) You are planning to sit the PMP ® examination and as part of your studyare referring to the PMBOK ® Guide for help in defining the project process groups.Which of the following is not one of the five process groups in the PMBOK ® Guide?

a) Closing

b) Checking

c) Initiating

d) Executing

15) You are the project manager on a project to develop a new piece ofcustomer management software for an external client. Through your approved changecontrol process you are considering a request to alter the scope of the project. Whileconsidering the impact of the request on the project scope, you must also consider theimpact on other areas of the project such as quality, schedule, budget, and risk. Theseother areas that you are considering represent what to the project?

a) Opportunities
b) Constraints
c) Constrictions
d) Risks

16) You are in the process of developing your project closure checklist andselecting those items and actions that need to be completed to ensure your project isclosed properly. A team member asks to help you do this work and asks how you knowa project can be closed. A project can be considered finished under all of the followingconditions except?

a) When the project manager resigns.
b) When the project objectives have been achieved.
c) When the project is terminated because its objectives will not or cannot be met.
d) When the need for the project no longer exists.

17) During the preparation of the business case for your project yououtline and document several different compelling reasons why your project shouldproceed. These reasons include the high ROI, delivering strategic value, and an increasein business value. What is the BEST definition of business value?

a) The value of company's tangible assets, which can be liquidated to provide working capital.
b) The value added to the business by projects that arecompleted successfully.
c) The value of the total sum of all tangible and intangible elements of the business.
d) The value of all of the projects that the company is currently completing.

18) You are explaining to your team that all changes on your project mustbe documented and assessed in relation to any extra costs incurred. This is particularlyimportant at what point in a project's timeline?

a) At the beginning of the project.

b) Towards the end of the project.

c) During the project execution.

d) It is equal throughout a project.

19) You are involved in making choices about resource allocation on yourproject, making trade-offs among competing objectives and alternatives, and managingthe interdependencies among the different project management knowledge areas. Ofwhich of the PMBOK ® Guide knowledge areas will it be most useful to have an in-depthunderstanding?

a) Develop Project Management Plan

b) Project Integration Management

c) Project Risk Management

d) Perform Integrated Change Control

20) The processes that describe the work required to ensure that the projectincludes all the work and only the work required to complete the project successfully arecollectively known as what?

a) Project scope management

b) Project baseline delivery

c) Project specification delivery

d) Project management execution

[20 MARKS]

QUESTION 2

a) Swanson Industries has a project with the following projected cash flows:

i. Initial Cost, Year 0: $240,000
ii. Cash flow year one: $25,000
iii. Cash flow year two: $75,000
iv. Cash flow year three: $150,000
v. Cash flow year four: $150,000

Using a 10% discount rate for this project and the NPV model should this project be accepted or rejected?

[10 MARKS]

b) For each row on the following chart, enter the letter of the project you would select based on the information provided.

	Project A	Project B	Which project would you pick
Net present value	$95,000	$75,000	
IRR	13 percent	17 percent	
Payback period	16 months	21 months	
Benefit cost ratio	2.79	1.3	

[4 MARKS]

c) Why should an organization not rely only on ROI to select projects?

[6 MARKS]

QUESTION 3

Mini-Case Study: Project Management at Global Green Books Publishing

Global Green Books Publishing was started two years ago by two friends, Mulenga Phiri and Bwalya Nyoni, who met in college while studying in Lusaka, Zambia. In the new business Mulenga focused on editing, sales and marketing while Bwalya Nyoni did the electronic assembly and publishing of books for Global Green Books. Their business was successful and profitable in the first two years, largely due to contracts from two big businesses.

In their third year they got very busy thanks to their third major customer, a local college that needed customized eBooks. They hired several part time employees to help them with their publishing business.

But by the end of third year of operation, Global Green Books started experiencing critical problems. They were:

- unable to leverage all the new employees effectively
- unable to deliver eBooks to their customers on schedule
- unable to provide quality texts—time and money was being spent fixing defects in their products
- unable to control costs—their business was not profitable in the third year.

Global Green Books saw a significant rise in issues, a lot of unpleasant "surprises" were cropping up; business was down as new resources were hired, also some of the projects were poorly estimated. The local university was unhappy as their eBook products reached campus late for use by professors and student. In some cases, the books were a week or two late. Since the courses must start on schedule and students need their books at the beginning of their courses, the new lucrative college customer was unhappy.

One of the new part-time employees hired by Mulenga and Bwalya, Samantha, had taken a project management course at college. Samantha was excited about the discipline of project management and had intentionally selected a job with Global Green Books Publishing as she saw an opportunity to polish her project management skills.

One fine day, Mulenga invited Samantha, for a lunch meeting. He was aware that Samantha was familiar with project management, and wanted to hear what she had to say about the problems he and Bwalya were facing. Over lunch he questioned why their small business which had operated and implemented projects so successfully over the first two years was being challenged significantly now. He specifically listed the problems they were facing and asked for input to solve them.

Samantha asked for more time to research all the issues but noted that Global Green Books, while being innovative, completed projects without a roadmap or a project plan and lacked a disciplined approach to project management. She noted that Mulenga and Bwalya did not use any project software for scheduling and they did not use tools or techniques to estimate, budget or to communicate with stakeholders. Finally, they had no processes in place to manage project risks and quality.

Impressed with this and other conversations, Mulenga Phiri asked Samantha if she would consider joining them as a project associate or project manager on a full-time basis to help them introduce project management practices and help them tide over their current crisis.

Samantha accepted the offer! She has several key skills—she is an excellent communicator with very good interpersonal skills and detail-oriented. Within the first three months in her new role as PM, she introduced formal project management processes, created a PM manual and trained the employees to get the work done well.

Within nine months Samantha had fully turned things around. Due to proactive risk analysis and risk response planning, surprises and issues reduced. Communication with stakeholders was enhanced. Bwalya and Mulenga noted that the company was delivering projects on schedule, the quality processes worked—and customers were happy with the products!

Comment on the following aspects of the case study:

a) What were the specific PM solutions that were introduced by Samantha that worked?

[10 MARKS]

b) What kind of suggestions would you give to Bwalya and Mulenga if you were the PM?

[10 MARKS]

QUESTION 4

A business is launching a new product. The launch will require a number of related activities as follows – hire a sales manager (5 weeks), require the sales manager to recruit sales people (4 weeks), train the sales people (7 weeks), select an advertising agency (2 weeks), plan an advertising campaign with the agency (4 weeks), conduct the advertising campaign (10 weeks), design the packaging of the product (4 weeks), set up packing operation (12 weeks), pack enough products for the launch stock (8 weeks), order the launch quantity of products from the manufacturer (13 weeks), select distributors for the product (9 weeks), take initial orders from the distributors (3 weeks), dispatch the initial orders to the distributors (2 weeks).

a) By use of network analysis determine is the earliest time that the new product can be introduced to the market?

[15 MARKS]

b) Which of the activities are on the critical path?

[5 MARKS]

QUESTION 5

a) Explain the risk management procedure. Set out the risks associated with attending the Engineers without Borders meeting in Malawi in September 2017. Draw a risk register (log) and populate it with at least four perceived risks. Analyse these risks and rank them.

[10 MARKS]

b) You are planning the manufacture of modification to an existing product. Your analysis has come up with the following information. What contingency reserve would you use?

Project data	**Cost contingency**
There is a 20 percent probability of a delay in the receipt of parts, with a cost to the project of ZMW90,000.	
There is a 20 percent probability that the parts will cost ZMW 100,000 less than expected.	
There is a 25 percent probability that two parts will not fit together when installed, costing an extra ZMW30,500.	
There is a 30 percent probability that the manufacture may be simpler than expected, saving ZMW20,500.	
There is a 5 percent probability of a design defect, causing ZMW 50,000 of rework.	
Total cost contingency	

[10 MARKS]

QUESTION 6

Your project is tasked with excavation of 30000 cubic meters of soil. According to the project management plan you need to excavate 1700 cubic meter of soil per week at a cost of K180 per cubic meter. According to the first month's progress report the project's EV was 1,000,000 and the AC was 1,200,000. According to the second month's progress report the project's EV was 2,200,000 and the AC was 2,400,000. After the 3rd month (12 weeks) you have 7000 cubic meters of soil remaining to

be excavated and you total cost to date is 4,000,000. Determine the current values for the project for each of the terms below:

Term	Value
Budget At Completion	K5 400 000
Planned Value	
Earned Value	
Actual Cost	
Cost Variance	
Schedule Variance	
Cost Performance Index	
Schedule Performance Index	
Estimate At Completion	
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Variance At Completion	

[20 MARKS]

Answer Sheet section A

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14	a	b	c	d	e
15	a	b	c	d	e
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17	a	b	c	d	e
18	a	b	c	d	e
19	a	b	c	d	e
20	a	b	c	d	e

END OF EXAMINATION PAPER

THE UNIVERSITY OF ZAMBIA

Graduate School of Business

UNIVERSITY POST GRADUATE EXAMINATIONS

MBS6021–PROJECT MANAGEMENT

JULY 2020

TIME : Three (3) hours

INSTRUCTIONS : : Answer Question 1 and any other four questions

All Questions Carry Equal Marks

QUESTION 1

1) Your team is confused because they use terminology and words in project communications that appear to have interchangeable meanings, but other teams treat these terms as though they have specific, unique meanings. How can your team find out what the terms mean?

   a) Designing a new software solution.

   b) Building a new house.

   c) Regularly achieving 3% growth on last year's sales figures.

   d) Implementing a new business process or procedure.

2) You are delivering an introduction to a project management training session to new team members. One team member appears confused about the exact definition of a project. What is the BEST definition of a project?

   a) A temporary endeavor undertaken to create a unique product, service, or result.

   b) A body of work constrained by finances and time.

   c) An organized effort of work by a team managed by a project manager.

   d) The ongoing management of a business enterprise to achieve profitability.

3) Your team seems confused about whether the work they are doing meets the definition of a project. To help them understand the difference between projectized and operational work you give them the following examples. Which of the following is not an example of a project?

   a) Designing a new software solution.

   b) Building a new house.

   c) Regularly achieving 3% growth on last year's sales figures.

   d) Implementing a new business process or procedure.

4) You are planning to sit the PMP ® examination and as part of your study are referring to the PMBOK ® Guide for help in defining the project process groups. Which of the following is not one of the five process groups in the PMBOK ® Guide?

   a) Closing

   b) Checking

   c) Initiating

   d) Executing

5) You are the project manager on a project to develop a new piece of customer management software for an external client. Through your approved change control process you are considering a request to alter the scope of the project. While considering the impact of the request on the project scope, you must also consider the impact on other areas of the project such as quality, schedule, budget, and risk. These other areas that you are considering represent what to the project?

a) Opportunities
b) Constraints
c) Constrictions
d) Risks

6) You are in the process of developing your project closure checklist and selecting those items and actions that need to be completed to ensure your project is closed properly. A team member asks to help you do this work and asks how you know a project can be closed. A project can be considered finished under all of the following conditions except?

a) When the project manager resigns.
b) When the project objectives have been achieved.
c) When the project is terminated because its objectives will not or cannot be met.
d) When the need for the project no longer exists.

7) During the preparation of the business case for your project you outline and document several different compelling reasons why your project should proceed. These reasons include the high ROI, delivering strategic value, and an increase in business value. What is the BEST definition of business value?

a) The value of company's tangible assets, which can be liquidated to provide working capital.
b) The value added to the business by projects that are completed successfully.
c) The value of the total sum of all tangible and intangible elements of the business.
d) The value of all of the projects that the company is currently completing.

8) You are explaining to your team that all changes on your project must be documented and assessed in relation to any extra costs incurred. This is particularly important at what point in a project's timeline?

a) At the beginning of the project.

b) Towards the end of the project.

c) During the project execution.

d) It is equal throughout a project.

9) You are involved in making choices about resource allocation on your project, making trade-offs among competing objectives and alternatives, and managing the interdependencies among the different project management knowledge areas. Of which of the PMBOK ® Guide knowledge areas will it be most useful to have an in-depth understanding?

a) Develop Project Management Plan

b) Project Integration Management

c) Project Risk Management

d) Perform Integrated Change Control

10) The processes that describe the work required to ensure that the project includes all the work and only the work required to complete the project successfully are collectively known as what?

a) Project scope management

b) Project baseline delivery

c) Project specification delivery

d) Project management execution

11) You are the project manager of the MMB Project. The president of the company has spoken to the project team and told them the confidence and respect he has in you to lead the project to a successful completion. The project manager has what type of power on this project?

a) Formal power
b) Coercive power
c) Expert power
d) Halo power

12) Management has approached Tyler, one of your project team members. Tyler is a database administrator and developer, whose work is always on time, accurate, and of quality. He also has a reputation of being a "good guy" and is well liked. Because of this, management has decided to move Tyler into the role of a project manager for a new database administration project. This is an example of which of the following?

a) Management by exception
b) The halo effect
c) Management by objectives
d) McGregor's Theory of X and Y

13) Susan is the project manager for the PMG Project. She makes all decisions on the project team regardless of the project team objections. This is an example of which of the following management styles?

a) Autocratic
b) Democratic
c) Laissez faire
d) Exceptional

14) Which problem-solving technique is the best for most project management situations?

a) Confronting
b) Compromising
c) Forcing
d) Avoidance

15) Harold is a very outspoken project team member. All of the project team members respec Harold for his experience with the technology, but often things have to go in Harold's favor or things do not go well. During a discussion on a solution, a project team member waves her arms and says, "Fine, Harold, do it your way." This is an example of which of the following?

a) A win-win solution
b) A leave-lose solution
c) A lose-lose solution
d) A yield-lose solution

16) Which of the following is an output of scope change control?

a) Workarounds
b) Corrective action
c) Transference
d) Risk assessment

17) You are the project manager for the JHG Project. Your project is to create a new product for your industry. You have recently learned your competitor is also working on a similar project but their offering will include a computer-aided program and web-based tools, which the project does not offer. You have implemented a change request to update your project. This is an example of which of the following?

a) A change due to an error and omission in the initiation phase
b) A change due to an external event
c) A change due to an error or omission in the planning phase
d) A change due to a legal issue

18) You are the project manager for a pharmaceuticals company. A new government regulation will change your project scope. For the project to move forward and be in accordance with the new regulation, your next action should be?

a) Prepare a new baseline to reflect the government changes
b) Notify management
c) Present the change to the CCB
d) Create a feasibility study

19) You have finished the project scope according to plan. For the customer to accept the project what must happen next?

a) Nothing. The plan is complete so the project is complete.
b) Scope verification should be conducted
c) Lessons learned should be finalized
d) Proof-of-concept should be implemented

20) You are the project manager for an airplane manufacturer. Your project concerns the development of lighter, stronger material for commercial jets. As the project moves towards completion, the material is defined in more detail after each phase of materials testing. This is an example of which of the following?

a) Program management
b) Progressive elaboration
c) Quality assurance
d) Regulatory guidelines

[20 MARKS]

QUESTION 2

Mulenga Incorporated uses discounted payback period (net present value) for projects under K25,000 and has a cut off period of 4 years for these small value projects. Two projects, R and S are under consideration. The anticipated cash flows for these two projects are listed below. If Mulenga Incorporated uses an 8% discount rate on these projects are they accepted or rejected? If they use a 16% discount rate? Why is it necessary to only look at the first four years of the projects' cash flows?

Cash Flows	Project R	Project S
Initial Cost	K24,000	K18,000
Cash flow year one	K6,000	K9,000
Cash flow year two	K8,000	K6,000
Cash flow year three	K10,000	K6,000
Cash flow year four	K12,000	K3,000

[15+5 MARKS]

QUESTION 3

The EIZ holds a national symposium every August of each year. However due to the COVID 19 it has been moved 15th December 2020. The symposium is organised by the EIZ secretariat. During the past three years, the attendance and quality of these National Symposia has being going down. An assessment has revealed that the main causes for this has been lack of communication, low quality of papers presented, absence of proceedings, and a reduction of paid up members. For this year's National Symposium, the EIZ Council has therefore decided to appoint a professional project manager to manage the National Symposium in this difficult period of COVID 19. It is also envisaged that a successful National Symposium would create awareness and contribute to membership building.

Project Brief

The EIZ contracted the project manager to manage the National Symposium and exhibition to be held over three days during the usual month of August. Specifically, the project manager will be responsible for planning, organising, coordinating and controlling the project.

The Institute has allocated an amount of K15,000,000 for initial expenditure, but this has to be paid back out of the Symposium and exhibition proceeds. Companies have been approached for sponsorship and K15,000,000 has been raised. Funding over and above these amounts is to be generated through the Symposium and exhibition fees.

The Institute expects the Symposium and exhibition to realize a net profit of at least K50,000,000.

To achieve this target, at least 100 Symposium delegates and 20 exhibitors are needed. A minimum of 20 new members are expected to enroll as a result of the proceedings. Over the three-day period, approximately 2,000 visitors are expected to visit the exhibition.

To attract both members and non-members, a quality professional programme highlighting nationally-known engineers as well as an international keynote speaker is planned. The project start date is 1 July and it is estimated to take 5 months.

a) As the project manager you are required to draws up a project charter capturing the above parameters, for the EIZ management to approve.

[15 MARKS]

b) What would the priorities likely be for this project?

[5 MARKS]

QUESTION 4

The activities, their durations and precedences for a generic project for testing a project management software are shown in Table Q4.

TableQ4generic project

Activity	**Preceding activity**	**Estimate in months**
Start		0
D	Start	4
A	Start	6
F	D, A	7
E	D	8
G	F, E	5
B	F	5
H	G	7
C	H	8
End	C, B	0

a) By use of network analysis determine is the earliest time that the operation might be completed?

[15 MARKS]

a) Which of the activities are on the critical path?

[5 MARKS]QUESTION 5

CompuX Systems is a small information systems consulting firm located in Kabulonga, Lusaka. CompuX has just been hired to design and install a local area network (LAN) for the city of Lusaka's social welfare agency. You are the manager for the project, which includes one CompuX professional and two interns from a local university. You have just finished a preliminary scope statement for the project (see below).

PROJECT SCOPE STATEMENT

PROJECT OBJECTIVE

To design and install a new local area network (LAN) within one month with a budget not to exceed K900,000 for the Lusaka Social Service Agency with minimum disruption to ongoing operations.

DELIVERABLES

- Twenty workstations and twenty laptop computers.
- Server with dual-core processors.
- Two color laser printers.
- Windows R2 server and workstation operating system (Windows 10).
- Migration of existing databases and programs to new system.
- Four hours of introduction training for client's personnel.
- Sixteen hours of training for client network administrator.
- Fully operational LAN system.

MILESTONES

1. Hardware August 22.
2. Setting users' priority and authorization August 26.
3. In-house whole network test completed September 1.
4. Client site test completed September 2.
5. Training completed September 16.

TECHNICAL REQUIREMENTS

1. Workstations with 17-inch flat panel monitors, dual-core processors, 4 GB RAM, 8X DVD+RW, wireless card, Ethernet card, 500 GB hard drive.
2. Laptops with 12-inch display monitor, dual-core processors, 2GB RAM, 8X DVD+RW, wireless card, Ethernet card, 500 GB hard drive and weigh less than 2 kg.
3. Wireless network interface cards and Ethernet connections.
4. System must support Windows 11 platforms.
5. System must provide secure external access for field workers.

LIMITS AND EXCLUSIONS

1. On-site work to be done after 8:00 p.m. and before 7:00 a.m. Monday through Saturday.
2. System maintenance and repair only up to one month after final inspection.
3. Warranties transferred to client.
4. Only responsible for installing software designated by the client two weeks before the start of the project.
5. Client will be billed for additional training beyond that prescribed in the contract.

CUSTOMER REVIEW

Director of the city of Lusaka's Social Service Agency.

You are now brainstorming potential risks associated with the project.

a) 1. Identify potential risks associated with this project. Try to come up with at least four different risks.

[4 MARKS]

b) Draw a risk register (log) and populate it with the four perceived risks. Analyse these risks and rank them.

[16 MARKS]

QUESTION 6

Your project is tasked with excavation of 30000 cubic meters of soil. According to the project management plan you need to excavate 1700 cubic meter of soil per week at a cost of K180 per cubic meter. According to the first month's progress report the project's EV was 1,000,000 and the AC was 1,200,000. According to the second month's progress report the project's EV was 2,200,000 and the AC was 2,400,000. After the 3rd month (12 weeks) you have 7000 cubic meters of soil remaining to be excavated and you total cost to date is 4,000,000. Determine the current values for the project for each of the terms below:

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Cost Variance	
Schedule Variance	
Cost Performance Index	
Schedule Performance Index	
Estimate At Completion	
Estimate To Complete	
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[20 MARKS]

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END OF EXAMINATION PAPER

THE UNIVERSITY OF ZAMBIA

Graduate School of Business

UNIVERSITY POST GRADUATE DEFERRED EXAMINATIONS

MBS6021–PROJECT MANAGEMENT

SEPTEMBER 2020

TIME : Three (3) hours

INSTRUCTIONS : : Answer Question 1 and any other four questions

All Questions Carry Equal Marks

QUESTION 1

1) You are completing the work defined in the project scope statement of a new software development project when a team member points out that you have an opportunity to deliver enhanced capability to the client at no extra cost, time, or risk to the project. What should you do NEXT?

a) Decline to make the changes and proceed to deliver exactly what the scope statement sets out.

b) Assess the change via the change control process and, if approved, amend the project scope statement.

c) Go ahead and make the changes, and surprise the client with the extra capability.

d) Ask the team member to keep quiet about the changes and ignore her recommendation because it presents too many risks to the project.

2) You are new to a project that has been underway for some time. One of your first jobs as project manager is to familiarize yourself with and understand the scope baseline. What documents will you require in order to do this?

a) The project scope statement, the WBS, and the WBS dictionary

b) The project scope statement, the WBS, and the risk register

c) The WBS, the change register, and the project scope statement

d) The WBS, the project management plan, and the change register

3) You are a project manager and you are working with your sponsor to define and plan a complex project. You plan to complete your initiation and planning documents sequentially to make sure the organization really understands and supports the project. What key deliverables will you produce in the correct order?

a) First the project management plan, then then project charter, and then the project scope statement.

b) First the project charter, then the requirements documentation, and then the project scope statement.

c) First the project charter, then the project scope statement, and then the requirements documentation.

d) First the project management plan, then the requirements documentation, and then the project charter.

4) What is the name of the planning document that describes how requirements will be analyzed, documented, and managed?

a) Requirements traceability matrix

b) Scope management plan

c) Requirements management plan

d) Requirements scope statement

5) Customer satisfaction means that customer requirements are met. Meeting customer requirements requires a combination of what two factors?

a) Continuous improvement and prevention over inspection
b) Conformance to requirements and prevention over inspection
c) Continuous improvement and fitness for use
d) Conformance to requirements and fitness for use

6) Modern quality management complements project management very highly, with both disciplines recognizing the importance of all the following characteristics except?

a) Customer satisfaction

b) Prevention over inspection

c) Continuous improvement

d) Total quality management (TQM)

7) Quality is planned, designed, and built into your project instead of being inspected in. What is the main reason that prevention of mistakes in quality is preferred over finding the mistakes via inspection?

a) Because finding defects via inspection should be avoided at all costs.

b) Because if you are a good project manager and perform prevention well, you won't have to deal with inspection.

c) Because the cost of preventing mistakes is generally much less than the cost of correcting them when they are found by inspection.

d) Because your quality management plan focuses on prevention.

8) How would you best describe to your client the difference between precision and accuracy?

a) Precision means the degree to which there is conformance to requirements. Accuracy refers to fitness for use.

b) Precision means the values of the repeated measurements are clustered and have little scatter. Accuracy means that the measured value is very close to the true value.

c) Precision is the degree to which the project quality assurance processes are being met. Accuracy is the degree to which the product meets customer specifications.

d) Precision is the ability to provide information to a six sigma level. Accuracy is the process of ensuring that the six sigma target is met.

9) A member of your project team seems confused about the differences between quality approaches to the project and product. How would you best explain these differences?

a) Quality in relation to the project relates to the processes and procedures that run the project. Quality in relation to the product looks at conformance to requirements and fitness of use.

b) There is no difference between the two.

c) Quality in relation to the project is focused on ensuring the project control and reporting are accurate. Quality in relation to the product ensures that it stays within the upper and lower control limits.

d) Quality in relation to the project is focused on the preparation and execution of the quality management plan. Quality in relation to the product is set solely by the customer.

10) Your project is behind schedule and you have asked your project team to work longer hours to make up the time so that the customer's needs are met as planned. As project manager, you should monitor your quality management plan for what reason?

a) Meeting customer requirements by overworking the project team may result in increased employee attrition, errors, or rework.

b) The customer requirements and specifications can change rapidly during periods of rework as the customer sees opportunities to make changes.

c) Achieving customer needs is not the primary focus of the quality management plan, and you need to make sure your team is working on project quality, not product quality, at these times.

d) The overtime cost incurred will take away the project budget assigned to the implementation of the quality management plan.

11) Your team is confused because they use terminology and words in project communications that appear to have interchangeable meanings, but other teams treat these terms as though they have specific, unique meanings. How can your team find out what the terms mean?

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b) Project Integration Management

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20) The processes that describe the work required to ensure that the project includes all the work and only the work required to complete the project successfully are collectively known as what?

a) Project scope management

b) Project baseline delivery

c) Project specification delivery

d) Project management execution

[20 MARKS]

QUESTION 2

The Road agency is planning to build a new bridge and is considering two distinct configurations. The initial costs and annual costs and benefits for each bridge are shown in the following table. The bridges are each expected to give positive returns within 10 years and the rate of return expected 15%. Which would you choose and why.

	Alternative I	Alternative II
Initial cost	$ 6,000,000.00	$ 10,500,000.00
Annual maintenance and operating costs	$ 15,000.00	$ 10,000.00
Annual benefits	$ 1,200,000.00	$ 1,900,000.00
Annual benefits less costs	$ 1,185,000.00	$ 1,890,000.00

[15+5 MARKS]

QUESTION 3

You are in charge of organizing a dinner-dance concert for a local charity. You have reserved a hall that will seat 30 couples and have hired a jazz combo.

a) Develop a project charter for this dinner dance with all of all the elements. Assume that the event will occur in four weeks and provide your best guess estimate of the dates for milestones.

[15 MARKS]

b) What would the priorities likely be for this project?

[5 MARKS]

QUESTION 4

A business is launching a new product. The launch will require a number of related activities as follows – hire a sales manager (5 weeks), require the sales manager to recruit sales people (4 weeks), train the sales people (7 weeks), select an advertising agency (2 weeks), plan an advertising campaign with the agency (4 weeks), conduct the advertising campaign (10 weeks), design the packaging of the product (4 weeks), set up packing operation (12 weeks), pack enough products for the launch stock (8 weeks), order the launch quantity of products from the manufacturer (13 weeks), select distributors for the product (9 weeks), take initial orders from the distributors (3 weeks), dispatch the initial orders to the distributors (2 weeks).

a) By use of network analysis determine is the earliest time that the new product can be introduced to the market?

[15 MARKS]

b) Which of the activities are on the critical path?

[5 MARKS]

QUESTION 5

CompuX Systems is a small information systems consulting firm located in Kabulonga, Lusaka. CompuX has just been hired to design and install a local area network (LAN) for the city of Lusaka's social welfare agency. You are the manager for the project, which includes one CompuX professional and two interns from a local university. You have just finished a preliminary scope statement for the project (see below).

PROJECT SCOPE STATEMENT

PROJECT OBJECTIVE

To design and install a new local area network (LAN) within one month with a budget not to exceed K900,000 for the Lusaka Social Service Agency with minimum disruption to ongoing operations.

DELIVERABLES

- Twenty workstations and twenty laptop computers.
- Server with dual-core processors.
- Two color laser printers.
- Windows R2 server and workstation operating system (Windows 10).
- Migration of existing databases and programs to new system.
- Four hours of introduction training for client's personnel.
- Sixteen hours of training for client network administrator.
- Fully operational LAN system.

MILESTONES

1. Hardware August 22.
2. Setting users' priority and authorization August 26.
3. In-house whole network test completed September 1.
4. Client site test completed September 2.
5. Training completed September 16.

TECHNICAL REQUIREMENTS

1. Workstations with 17-inch flat panel monitors, dual-core processors, 4 GB RAM, 8X DVD+RW, wireless card, Ethernet card, 500 GB hard drive.
2. Laptops with 12-inch display monitor, dual-core processors, 2GB RAM, 8X DVD+RW, wireless card, Ethernet card, 500 GB hard drive and weigh less than 2 kg.
3. Wireless network interface cards and Ethernet connections.
4. System must support Windows 11 platforms.
5. System must provide secure external access for field workers.

LIMITS AND EXCLUSIONS

1. On-site work to be done after 8:00 p.m. and before 7:00 a.m. Monday through Saturday.
2. System maintenance and repair only up to one month after final inspection.
3. Warranties transferred to client.
4. Only responsible for installing software designated by the client two weeks before the start of the project.
5. Client will be billed for additional training beyond that prescribed in the contract.

CUSTOMER REVIEW

Director of the city of Lusaka's Social Service Agency.

You are now brainstorming potential risks associated with the project.

a) 1. Identify potential risks associated with this project. Try to come up with at least four different risks.

[4 MARKS]

b) Draw a risk register (log) and populate it with the four perceived risks. Analyse these risks and rank them.

[16 MARKS]

QUESTION 6

Your project is tasked with excavation of 30000 cubic meters of soil. According to the project management plan you need to excavate 1700 cubic meter of soil per week at a cost of K180 per cubic meter. According to the first month's progress report the project's EV was 1,000,000 and the AC was 1,200,000. According to the second month's progress report the project's EV was 2,200,000 and the AC was 2,400,000. After the 3rd month (12 weeks) you have 7000 cubic meters of soil remaining to be excavated and you total cost to date is 4,000,000. Determine the current values for the project for each of the terms below:

Term	Value
Budget At Completion	K5 400 000
Planned Value	
Earned Value	
Actual Cost	
Cost Variance	
Schedule Variance	
Cost Performance Index	
Schedule Performance Index	
Estimate At Completion	
Estimate To Complete	
Variance At Completion	

[20 MARKS]

Answer Sheet section A

Computer No. _____

1	a	b	c	d	e
2	a	b	c	d	e
3	a	b	c	d	e
4	a	b	c	d	e
5	a	b	c	d	e
6	a	b	c	d	e
7	a	b	c	d	e
8	a	b	c	d	e
9	a	b	c	d	e
10	a	b	c	d	e
11	a	b	c	d	e
12	a	b	c	d	e
13	a	b	c	d	e
14	a	b	c	d	e
15	a	b	c	d	e
16	a	b	c	d	e
17	a	b	c	d	e
18	a	b	c	d	e
19	a	b	c	d	e
20	a	b	c	d	e

END OF EXAMINATION PAPER

THE UNIVERSITY OF ZAMBIA

Graduate School of Business

UNIVERSITY POST GRADUATE EXAMINATIONS

MBS6021–PROJECT MANAGEMENT

December 2020

TIME : Three (3) hours

INSTRUCTIONS : : Answer Question 1 and any other four questions

All Questions Carry Equal Marks

QUESTION 1

1) Of the following, which is not an example of risk?

a) Interrupting a business process with project implementation

b) Losing customers due to a project implementation

c) Adding team members during the project implementation

d) Updating the project plan during the implementation

2) Which document will guide the interaction between the project manager and a selected vendor on a project?

a) The project plan

b) The SOW

c) The procurement management plan

d) The contract

3) Of the following, what does the project manager typically do the most of?

a) Communications

b) Budget management

c) Project organization

d) Manage team negotiations

4) A program is which one of the following?

a) A very large, complex project

b) A collection of small projects with a common goal

c) A collection of projects with a common cause

d) A collection of subprojects with a common customer

5) Who manages programs?

a) Management

b) Project sponsors

c) Project managers

d) Program managers

6) You have an excellent idea for a new project that can increase productivity by 20 percent in your organization. Management, however, declines to approve the proposed project because too many resources are already devoted to other projects. You have just experienced what?

a) Parametric modeling

b) Management by exception

c) Project Portfolio Management

d) Management Reserve

7) Complete the following statement. All businesses are in business to...

a) Make money

b) Complete their company's vision

c) Complete their company's mission statement

d) Provide jobs and opportunities for others

8) Which of the project management processes is progressively elaborated?

a) Planning

b) Communicating

c) Contract administration

d) Closing

9) The ongoing process of project planning is also known as _____.

a) Constant integration planning

b) Rolling wave planning

c) Continuous planning

d) Phase gates

10) You are the project manager for the James road Project. You would like to include several of the customers in the project planning sessions, Your project leader would like to know why the stakeholders should be involved-your project team will be determining the best method to reach the project objectives. You should include the stakeholders because _____.

a) It generates goodwill between the project team and the stakeholders

b) It allows the stakeholders to see the project manager as the authority of the project

c) It allows the project team to meet the stakeholders and express their concerns regarding project constraints

d) It allows the stakeholders to realize the shared ownership of the project

11) You have requested that several of the stakeholders participate in the different phases of the project. Why is this important?

a) It prevents scope creep.

b) It allows for scope constraints.

c) It improves the probability of satisfying the customer requirements.

d) It allows for effective communications.

12) The information from the planning phase is input into which of the following processes?

a) Initiating

b) Controlling

c) Executing

d) Closing

13) The information from the initiating phase is input into which of the following processes?

a) A. Planning
b) Executing
c) Controlling
d) All of the project phases

14) You are completing the work defined in the project scope statement of a new software development project when a team member points out that you have an opportunity to deliver enhanced capability to the client at no extra cost, time, or risk to the project. What should you do NEXT?

a) Decline to make the changes and proceed to deliver exactly what the scope statement sets out.

b) Assess the change via the change control process and, if approved, amend the project scope statement.

c) Go ahead and make the changes, and surprise the client with the extra capability.

d) Ask the team member to keep quiet about the changes and ignore her recommendation because it presents too many risks to the project.

15) You are new to a project that has been underway for some time. One of your first jobs as project manager is to familiarize yourself with and understand the scope baseline. What documents will you require in order to do this?

a) The project scope statement, the WBS, and the WBS dictionary

b) The project scope statement, the WBS, and the risk register

c) The WBS, the change register, and the project scope statement

d) The WBS, the project management plan, and the change register

16) You are a project manager and you are working with your sponsor to define and plan a complex project. You plan to complete your initiation and planning documents sequentially to make sure the organization really understands and supports the project. What key deliverables will you produce in the correct order?

a) First the project management plan, then then project charter, and then the project scope statement.

b) First the project charter, then the requirements documentation, and then the project scope statement.

c) First the project charter, then the project scope statement, and then the requirements documentation.

d) First the project management plan, then the requirements documentation, and then the project charter.

17) What is the name of the planning document that describes how requirements will be analyzed, documented, and managed?

a) Requirements traceability matrix

b) Scope management plan

c) Requirements management plan

d) Requirements scope statement

18) Customer satisfaction means that customer requirements are met. Meeting customer requirements requires a combination of what two factors?

a) Continuous improvement and prevention over inspection

b) Conformance to requirements and prevention over inspection

c) Continuous improvement and fitness for use

d) Conformance to requirements and fitness for use

19) Modern quality management complements project management very highly, with both disciplines recognizing the importance of all the following characteristics except?

a) Customer satisfaction

b) Prevention over inspection

c) Continuous improvement

d) Total quality management (TQM)

20) Quality is planned, designed, and built into your project instead of being inspected in. What is the main reason that prevention of mistakes in quality is preferred over finding the mistakes via inspection?

a) Because finding defects via inspection should be avoided at all costs.

b) Because if you are a good project manager and perform prevention well, you won't have to deal with inspection.

c) Because the cost of preventing mistakes is generally much less than the cost of correcting them when they are found by inspection.

d) Because your quality management plan focuses on prevention.

[20 MARKS]

QUESTION 2

The operations team at Jack and Bull Engineering Inc. was evaluating the feasibility of the following two projects that were required for the business:

i. Milling Project: Investment of $260,000 in an automatic milling machine that would reduce wastage by $180,000 in the first year and $120,000 in the second year.
ii. Grinding Project: Investment of $120,860 in an automatic grinding machine that would reduce wastage by $85,000 in the first year and $116,000 in the second year.

Compute the NPV of each project and determine if the team should accept or reject them if the cost of capital is 13%.

[15+5 MARKS]

QUESTION 3

You are in charge of organizing a dinner-dance concert for a local charity. You have reserved a hall that will seat 30 couples and have hired a jazz combo.

a) Develop a project scope for this dinner dance with all of all the elements. Assume that the event will occur in four weeks and provide your best guess estimate of the dates for milestones.

[15 MARKS]

b) What would the priorities likely be for this project?

[5 MARKS]

QUESTION 4

As part of the computer programing team making a project management software, you are requested to prepare a sample solution to be used for validating the project management software by doing the following assignment. Draw the network and identify the critical path for the information in table Q2. Also calculate the earliest–latest starting and finishing times for each activity:

Table Q4

Activity	Preceding activity	Time(weeks)
A	-	4
B	-	10
C	A, B	11
D	B	16
E	B	13
F	C	5
G	D	11
H	D, E	9
I	F, G, H	4

[20 MARKS]

QUESTION 5

Read the case study and answer the questions that follow.

Barbara just received the good news: She was assigned as the project manager for a project that her company won as part of competitive bidding, though she had not participated in the bidding process. Barbara is somewhat pessimistic and believes that accepting the estimates as they were submitted in the proposal is like playing Russian roulette. As such, Barbara prefers to review the estimates.

One of the most critical work packages in the project was estimated at twelve weeks using one grade 7 employee full time. Barbara had performed this task on previous projects and it required one person full time for fourteen weeks. Barbara asked the estimating group how they arrived at this estimate. The estimating group responded that they used the three-point estimate where the optimistic time was four weeks, the most likely time was thirteen weeks, and the pessimistic time was sixteen weeks.

Barbara believed that the three-point estimate was way off of the mark. The only way that this work package could ever be completed in four weeks would be for a very small project nowhere near the complexity of Barbara's project. Therefore, the estimating group was not considering any complexity factors when using the three-point estimate. Had the estimating group used the triangular distribution where each of the three estimates had an equal likelihood of occurrence, the final estimate would have been thirteen weeks. This was closer to the fourteen weeks that Barbara thought the work package would take. While a difference of 1 week seems small, it could have a serious impact on Barbara's project and incur penalties for late delivery. Barbara was now still confused and decided to talk to Peter, the employee that was assigned to do this task. Barbara had worked with Peter on previous projects.

Peter was a grade 9 employee and considered to be an expert in this work package. As part of the discussions with Barbara, Peter made the following comments: I have seen estimating data bases that include this type of work package and they all estimate the work package at about 14 weeks. I do not understand why our estimating group prefers to use the three point estimate.

"Does the typical data base account for project complexity when considering the estimates?" asked Barbara. Peter responded: Some data bases have techniques for considering complexity, but mostly they just assume an average complexity level. When complexity is important, as it is in our project, analogy estimating would be better. Using analogy estimating and comparing the complexity of the work package on this project to the similar works packages I have completed, I would say that 16–17 weeks is closer to reality, and let's hope I do not get removed from the project to put out a fire somewhere else in the company. That would be terrible. It is impossible for me to get it done in 12 weeks. And adding more people to this work package will not shorten the schedule. It may even make it worse

Barbara then asked Peter one more question: Peter, you are a grade 9 and considered as the subject matter expert. If a grade 7 had been assigned, as the estimating group had said, how long would it have taken the grade 7 to do the job? "Probably about 20 weeks or so" responded Peter

Comment on the following aspects of the case study:

a How many different estimating techniques were discussed in the case?

[4 MARKS]

b Explain three estimating techniques

[6 MARKS]

c If each estimate is different, how does a project manager decide that one estimate is better than another?

[6 MARKS]

d If you were the project manager, which estimate would you use?

[4 MARKS]

QUESTION 6

a) Explain the risk management procedure. Set out the risks associated with attending the first project management conference keeping in mind that we will still be in the COVID era. Draw a risk register (log) and populate it with at least four perceived risks. Analyse these risks and rank them.

[10 MARKS]

b) You are planning the manufacture of modification to an existing product. Your analysis has come up with the following information. What contingency reserve would you use?

Project data	**Cost contingency**
There is a 17 percent probability of a delay in the receipt of parts, with a cost to the project of ZMW90,000.	
There is a 22 percent probability that the parts will cost ZMW 100,000 less than expected.	
There is a 20 percent probability that two parts will not fit together when installed, costing an extra ZMW30,500.	
There is a 32 percent probability that the manufacture may be simpler than expected, saving ZMW20,500.	
There is a 8 percent probability of a design defect, causing ZMW 50,000 of rework.	
Total cost contingency	

[10 MARKS]

[20 MARKS]

Answer Sheet section A

Computer No. _____

1	a	b	c	d	e
2	a	b	c	d	e
3	a	b	c	d	e
4	a	b	c	d	e
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8	a	b	c	d	e
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10	a	b	c	d	e
11	a	b	c	d	e
12	a	b	c	d	e
13	a	b	c	d	e
14	a	b	c	d	e
15	a	b	c	d	e
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17	a	b	c	d	e
18	a	b	c	d	e
19	a	b	c	d	e
20	a	b	c	d	e

END OF EXAMINATION PAPER

THE UNIVERSITY OF ZAMBIA

Graduate School of Business

UNIVERSITY POST GRADUATE EXAMINATIONS

MBS6021–PROJECT MANAGEMENT

September 2021(second week)

TIME : Three (3) hours

INSTRUCTIONS : : Answer Question 1 and any other four questions

All Questions Carry Equal Marks

QUESTION 1

1) On a project headed up by a lightweight project manager, employees have their performance reviews made by:
   a) Line managers only
   b) Line managers with input from the project managers
   c) Concurrence jointly by project managers and line managers
   d) Project managers only

2) Which of the following is normally not part of a team member's role?
   a) Accepting responsibility for a deliverable
   b) Sharing information with the sponsor
   c) Sharing information with the team
   d) Completing the work at the earliest possible time.

3) In which life cycle phase do project sponsors become most actively involved in the project?
   a) Initiation
   b) Execution
   c) Monitor and control
   d) Closure

4) Which of the following is not part of the project sponsor's role?
   a) Conflict resolution
   b) Priority-setting
   c) Selection of project team members
   d) Monitoring performance at a high level

5) Project sponsorship almost always resides at the executive levels
   a) True
   b) False

6) Which of the following promises can project managers make to functional employees assigned to a project?
   a) Promotions
   b) Overtime
   c) Future work assignments
   d) None of the above

7) Which of the following most likely represents a project champion rather than a project manager?
   a) Manages people
   b) Seeks perfection
   c) Willing to take risks
   d) Prefers to work in groups

8) You are the project manager for the Advertising Specialties Project. This project will mail each client a pen, coffee mug, and magnet-all to be designed with your company logo and mascot on it. You have worked on a similar project before, but have a new project team

for this particular task. Of the following, which is the best source of information for creating the project schedule?

a) Project team input
b) Historical information input
c) Project sponsor input
d) Vendor input

9) Of the following, which is a mathematical model that can be used in assembling a project budget?

a) Pareto formulas
b) Parametric Modeling
c) Parametric Estimating
d) EVM

10) Which of the following can the project manager use to lead the project team to project completion?

a) Project schedules
b) EVM
c) Lectures and motivational speeches
d) Approved incentives

11) Of the following, which is not an example of risk?

a) Interrupting a business process with project implementation
b) Losing customers due to a project implementation
c) Adding team members during the project implementation
d) Updating the project plan during the implementation.

12) Which document will guide the interaction between the project manager and a selected vendor on a project?

a) The project plan
b) The SOW
c) The procurement management plan
d) The contract.

13) Of the following, what does the project manager typically do the most of?

a) Communications
b) Budget management
c) Project organization
d) Manage team negotiations

14) A program is which one of the following?

a) A very large, complex project
b) A collection of small projects with a common goal
c) A collection of projects with a common cause
d) A collection of subprojects with a common customer

15) You have an excellent idea for a new project that can increase productivity by 20 percent in your organization. Management, however, declines to approve the proposed project because too many resources are already devoted to other projects. You have just experienced what?

a) Parametric modeling

b) Management by exception
c) Project Portfolio Management
d) Management Reserve

16) Complete the following statement. All businesses are in business to...
a) Make money
b) Complete their company's vision
c) Complete their company's mission statement
d) Provide jobs and opportunities for others

17) Of the following, which is the most important person involved with a project?
a) The project manager
b) The project sponsor
c) The CEO
d) The customer

18) Which of the following is responsible for the quality of the project deliverables?
a) Project champion
b) Project team
c) Stakeholders
d) Customers

19) You are the project manager for the Photo Scanning Project. This project is similar to another project you have completed. Your project is to electronically store thousands of historical photos for your city's historical society. Quality is paramount on this project. Management approaches you and asks why you have devoted so much of the project time for planning. Your response is which of the following?
a) This is a first-time, first-use project, so more time is needed for planning.
b) Planning for a project of this size, with this amount of quality, is mandatory.
c) Quality is planned into a project, not inspected in.
d) Quality audits are part of the planning time.

20) You are the project manager for the Floor Installation Project. Today, you plan to meet with your project team to ensure the project is completed with no deviations from the project requirements. This process is which of the following?
a) Quality planning
b) Quality management
c) Quality control
d) Quality assurance

QUESTION 2

You are the head of the project selection team at Zam Roots records. Your team is considering three different recording projects. Based on past history, Zam Roots expects at least a rate of return of 13 percent. Your financial advisors predict inflation to remain at 13 percent into the foreseeable future. Given the following information for each project, which one should be Zam Roots first priority? Should Zam Roots fund any of the other projects?

If so, what should be the order of priority based on return on investment?

Recording Project: **Katyetye**

Year	Investment	Revenue Stream
0	K 600,000	
1		600,000
2		75,000
3		20,000
4		15,000
5		10,000

Recording Project: **Chilimwibala**

Year	Investment	Revenue Stream
0	K 400,000	0
1		400,000
2		100,000
3		25,000
4		20,000
5		10,000

Recording Project: **Lelo Ni Lelo**

Year	Investment	Revenue Stream
0	K 200,000	0
1		200,000
2		125,000
3		75,000
4		20,000
5		10,000

[20 MARKS]

QUESTION 3

a) List any 6 processes of risk management as described by the *PMBOK® Guide*—Sixth Edition.

[3 MARKS]

b) Why is the project charter an input to the plan risk management process?

[3 MARKS]

c) According to the *PMBOK Guide* (Sixth Edition), what are the main elements of a risk management plan?

[4 MARKS]

d) You are considering the decision whether to purchase a machine for internal production or to subcontract the work to an external source. The following information has been provided by your financial managers:
Cost to purchase the machine: $35,000
Cost to subcontract the work: $5,000
Probability of a good market = 70%
Probability of a poor market = 30%
Reward if the prediction occurs:
In the purchase machine decision good market scenario: $80,000: in the poor market scenario: $30,000.In the subcontract decision good market scenario: $50,000: in the poor market scenario:$15,000

i. What is the expected value of the decision to purchase the machine?

[5 marks]

ii. What is the expected value of the decision to subcontract the machine?

[5 marks]

QUESTION 4

The activities, their durations and precedence for designing, writing and installing an **Innovations** computer database are shown in Table Q4. Draw a network diagram for the project and calculate the fastest time in which the operation might be completed.

TableQ4 Innovations computer database activities

	Activity	*Duration in weeks*	*Activities that must be completed before it can start*
1	Contract negotiation	1	–
2	Discussions with main users	2	1
3	Review of current documentation	5	1
4	Review of current systems	6	2
5	Systems analysis (a)	4	3, 4
6	Systems analysis (b)	7	5
7	Programming	12	5
8	Testing (prelim)	2	7
9	Existing system review report	1	3, 4
10	System proposal report	2	5, 9
11	Documentation preparation	19	5, 8
12	Implementation	7	7, 11
13	System test	3	12
14	Debugging	4	12
15	Manual preparation	5	11

[20 marks]

QUESTION 5

a) With the use of the five process group explain how the process of preparation your birthday party in line with PMBOK guidelines.

[15 marks]

b) Make short explanation on the two factor theory may be used in human resource management.

[5 MARKS]

QUESTION 6

a) Explain the concept of earned value management.

[2 MARKS]

b) Having tiled the floors, you hire a contractor to wallpaper all of the walls in each of the five rooms. You purchase the wallpaper and will reimburse the contractor just for labor. The contractor works at $120 per hour and estimates eight hours of work per room, for a total of five days. At the end of the first week, working nine hours per day, the contractor completed only three rooms. The EVMS status is:

i. PV = _____
ii. EV = _____
iii. AC = _____
iv. BAC = _____
v. SV = _____
vi. CV = _____
vii. EAC = _____
viii. VAC = _____
ix. ETC = _____
x. Percent complete = _____
xi. SPI = _____
xii. CPI = _____

Answer Sheet section A

Computer No. _____

1	a	b	c	d	e
2	a	b	c	d	e
3	a	b	c	d	e
4	a	b	c	d	e
5	a	b	c	d	e
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14	a	b	c	d	e
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18	a	b	c	d	e
19	a	b	c	d	e
20	a	b	c	d	e

END OF EXAMINATION PAPER

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

SEMESTER END FINAL EXAMINATION - SEPT. 2021

MBS 6031/HRM 5042 HUMAN RESOURCE STRATEGY / STRATEGIC HUMAN RESOURCE PLANNING

Duration: 3 hours

Marks: 100%

You are advised to read the following INSTRUCTIONS/ DIRECTIONS before answering any examination question:

1. This paper comprises **Two Sections**; Section **A** and Section **B**.
2. **Section A** has **two compulsory** questions worth 20 marks each. **Question 1** of this section is based on a **Case study** provided while **question 2** is based on your **course work** knowledge.
3. **Section B** has five questions worth 20 marks each; choose and **answer any three (3)** questions from this section.
4. **Each question in Sections A & B has two sub-questions carrying 10 marks each.**
5. **You will answer five questions in total in the manner prescribed above.**
6. Read each of the questions carefully before you begin answering.
7. Number the answers to the questions clearly before answering the question(s)
8. Write as clearly as possible as illegible handwriting cannot be marked.
9. Begin each question on a new page.
10. Use the provided University answer booklet as an answer sheet and fill in all details required.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO!

Section A - Compulsory (40 Marks)

Question One

Read the passage below and then answer the questions which follow it.

MOST employees have plans to grow themselves professionally, and part of their long-term plan is to have a good separation package. That is why it is challenging for any employee to be declared redundant. Part of the obligations of the Ministry of Labour and Social Security is to sensitize the masses on labour laws obtaining in Zambia. In this article, the focus is on the Employment Act, with particular reference to redundancies. The questions to tackle are: what is redundancy and how should an employee react when faced with it? What are the obligations of the employer in this process?

According to Chapter 268 of the Employment Act, Section 26B, an employee is deemed redundant if the employer discontinues or has plans to discontinue the business for which the employee was engaged. The other plausible condition is when the organisation has plans to downsize its staff owing to uncertainty or some growing concerns in its business. In as much as the above two factors are the acceptable reasons for redundancy, there is need for an employer to adhere to laid-down procedures. When declaring a worker redundant, the Employment Act further states that the employer must give 30 days' notice to the representative of the workers, including the number of employees that would be affected by such a decision. Furthermore, the period when such termination will be conducted also needs to be stipulated to the workers' representatives. *Managing a redundancy is a crucial part of the process. In the corporate world, restructuring and consequential redundancies are often required, but they come with emotional human cost. It is important that companies plan changes carefully in order to support the workers who are losing their jobs, avoid any unfair dismissal claims and minimise the potential of negative publicity.*

It is important for companies to carefully plan and implement a communication strategy to ensure clear and effective communication with its employees. In order to avoid unnecessary altercations on the reasons behind the redundancies, employers should never use redundancy to push out employees for other underlying reasons such as non-performance, affiliation to a union, but rather it should be a transparent and genuine process that requires effective communication with employees and their representatives. Replacement of an employee immediately they are declared redundant does not reflect a true and genuine process.

Of significant note is that the workers' representative must be given sufficient time to make consultations on what actions can be taken to minimise adverse effects of redundancy on the part of the worker and the termination of contract. This law makes provision for the workers' representative to find alternative employment for the workers. It is important to note that the employee must be given at least 30 days' notice prior to termination of contract. The Department of Labour should be informed in writing about the impending redundancy 60 days prior to the redundancy occurring.

When notifying a worker, the following should be clearly spelt out in the letter in accordance with the Employment Act:
(i) The reasons for the termination by redundancy;
(ii) The number of categories of employees likely to be affected;
(iii) The period within which the redundancies are to be effected; and

(iv) The nature of the redundancy package.

The Employment Act further states that when the contract of service is terminated, an employee must be paid his or her redundancy benefits on the last day of work. However, if the employer cannot pay the worker on their last day of work, the employer will continue paying the worker a full monthly salary until the redundancy benefits are paid. However, the Employment Act also states that these conditions are not applicable to an employer who discontinues his business because of bankruptcy or liquidation. It also does not apply to casual employees or fixed term employees whose expiration of the term coincides with the redundancy.

Redundancy benefits for those that are protected by the statutory instruments under the minimum wages are calculated at two months' pay for each year served and at least one month's pay for those whose notice was not given. The represented groups of employees engage in collective bargaining with employers and arrive at an agreed amount. Additionally, the above-mentioned provisions or conditions do not apply to an employee who has been offered alternative employment and has unreasonably refused the offer.

Adapted from Zambia Daily Mail. Written by *Analysis*: **INUTU MUSHAMBATWA. *The author is head – public relations and media at the Ministry of Labour and Social Security.***

(a) *"In the corporate world, restructuring and consequential redundancies are often required, but they come with emotional human cost. It is important that companies plan changes carefully in order to support the workers who are losing their jobs, avoid any unfair dismissal claims and minimise the potential of negative publicity."* Elaborate this assertion with practical examples.

(b) Suggest and analyse alternatives to declaring employees' redundancy.

Question Two

Organizations develop human resource (HR) strategy for sustainability of growth and profitability. From this perspective, answer the following questions:

(a) Explain the main considerations an HR strategy should take into account.

(b) Discuss the strategic human resource forecasting process and its relevance to the corporate business strategy.

Section B (60 Marks)

Choose and answer **any Three** Questions.

Question Three

(a) With illustrative exemplifications, briefly discuss four stages of strategic human resource planning process.

(b) Discuss any two human resources planning models and show their relevance in shaping business strategy.

Question Four

(a) Analyse the relationship between organizational planning and human resource planning.

(b) How does effective strategic human resources planning prevent employee vs supervisor conflicts in performance management process.

Question Five

(a) Critically analyse any four factors which have necessitated the evolution of strategic human resource management / planning in organisations.

(b) Demonstrate how you can effectively and proactively deal with challenges which come along with a diversified human resource in an organization.

Question Six

(a) With practical exemplifications, analyse the role of organizational blue prints in human resource planning and strategy.

(b) Human resource training is a critical catalyst in stimulating human resource performance and organizational excellence. Briefly discuss the key elements of the training template.

Question Seven

(a) What is an organizational design? Analyse its place in effective human resource planning and employee productivity.

(b) Differentiate job enrichment from job enlargement. How can these elements of the job design aid in enhancing organizational performance?

----------END----------

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

HUMAN RESOURCE STRATEGY /HUMAN RESOURCE PLANNING

MBS 6031 / HRM 5042 FINAL EXAMS

DURATION; 03HOURS

INSTRUCTIONS

ANSWER 5 QUESTIONS ONLY (THREE QUESTIONS FROM SECTION A AND TWO QUESTIONS FROM SECTION B). QUESTION 1 FROM SECTION A IS COMPULSORY. EACH QUESTION CARRIES 20 MARKS.

SECTION A

ANSWER THREE QUESTIONS.Q1 IS COMPULSORY.

QUESTION ONE (COMPULSORY)

A fit between demands for creativity and abilities for creativity is related to lower strain and higher job satisfaction. By incorporating both the Supply Value and Demand ability versions of fit, assess this preposition. **(20 Marks.)**

QUESTION TWO.

Strategic Human Resource Management is an evolving concept which is still at its nascent stage and its relevance to organizations is immensely gaining ground. Illustrate the HR Value Chain and explain to what extent the HR Strategic scan can influence the Value Chain. **(20 marks)**

QUESTION THREE.

In order to ensure the growth and development of most organizations in Zambia, the efficiency of the Human Capital must be augmented in the right pespectiv.HR traditional concepts suggested that expenditure in HR is treated as a change agent revenue as it does not create any physical assets.

Using your knowledge of HR accounting answer the following questions;

a) Explain in detail the Monetary and non-Monetary measurement methods of HR Accounting. **(10MARKS)**

b) Discuss the merits and limitations of the Cost Approach method in Human Resource Accounting(**10MARKS)**

QUESTION FOUR

Cumulative research streams in the SHRM literature have proven the advantageous existence of the synergetic effect of HRM practices in all 21st Century organizations globally. By incorporating your scholarly ideas of internal fit, external fit, and the focus on employees' cognitive mechanisms Explain the Return on Investment approach in Human Capital valuation with an illustration.**(20 Marks)**

QUESTION FIVE

The Person-Environment Fit paradigm has been successfully integrated within a developmental framework. It postulates that the combination of an individual's developmental stage and the surrounding environment produces adaptive change within the individual thus defeating strategic misalignment.

Explain in detail how synchronizing the trajectory of development to the characteristics and changes in the organization fosters strategic alignment. **(20 Marks)**

SECTION B

ANSWER ANY TWO QUESTIONS.

QUESTION SIX

The name "Balanced Scorecard" comes from the idea of looking at strategic measures in addition to traditional financial measures to get a more "balanced" view of performance. The concept of balanced scorecard has evolved beyond the simple use of perspectives and it is now a holistic system for managing strategy. Developed by Kaplan and Norton,a key benefit of using a disciplined framework is that it gives organizations a way to "connect the dots" between the various components of strategic planning and management, meaning that there will be a visible connection between the projects and programs that people are working on, the measurements being used to track success (KPIs), the strategic objectives the organization is trying to accomplish, and the mission, vision, and strategy of the organization. Answer he following questions on the BSC;

a) Kaplan and Norton indicated that the metaphor for the BSC should be a flight stimulator, not a dashboard of instrument dials. Explain what is meant by this assertion. (**10 Marks)**

b) Discuss and compare the Measure Network with the Balanced Scorecard highlighting the criticisms of the BSC. **(10Marks)**

QUESTION SEVEN

Porters five forces like PEST (or SLEPT) analysis, helps organizations to understand their task, industry or competitive environment. using your understanding of the pest analysis show how the following strategies can overcome competitive rivalry;

a) Horizontal integration **(10Marks)**

b) Vertical integration.**(10 Marks**

QUESTION EIGHT

Discuss the Human resource forecasting process and its importance in a hypothetical 21st Century Zambian business environment. **(20 Marks)**

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

MARKETING STRATEGY (MBS 6041)

FINAL SEMESTER EXAMINATION

Date: 15th December 2020

Time Allowed: Three(3) hours

Instructions:

1. There are Six (6) questions in this paper, and you are required to attempt any five questions.

2. Note that question **ONE** is **COMPULSORY.**

3. Answer any Four (4) questions from Section B.

4. Marks for each question are indicated in the brackets.

5. Answers must be in complete sentences. No credit will be given for any answer that is in point form.

SECTION A: COMPULSORY

Question 1

Your boss has just returned from a Senior Executives Workshop for Marketing Directors. He explains to you that the focus of the workshop was on the importance of the "positioning statement for effective strategy development". Full of new-found enthusiasm, he asks you to prepare a short paper on positioning for the next board meeting. He wants you to demonstrate the importance of positioning strategy to business success. Write that paper.

(20 Marks)

SECTION B: ANSWER ANY FOUR QUESTIONS

Question Two

A company's current products face a limited life span and must be replaced by new products. But new products can fail because the risks of innovation are as great as the rewards. The key to successful innovation lies in total company effort, strong planning, and a systematic new product development process.

As a new strategic Product Officer for JB FMCG Company, you are required to determine the importance of new product development as a competitive tool to your Chief Marketing Officer. **(20 Marks)**

Question Three

a) Michael Porter identifies three broad strategies for attaining competitive advantage.

Explain how Financial Institutions may apply the following competitive strategies in their marketing drive:

a) Differentiation **(5 Marks)**
b) Focus **(5 Marks)**
c) Cost leadership **(5 Marks)**

b) Briefly Discuss the different levels of a product. **(5 Marks)**

Question Four

a) Briefly discuss the factors that influence consumer decision making process.

(8 Marks)

b) It is pointless to produce goods and keep them at their place of production. Discuss functions of marketing distribution channels and give relevant examples.

(12 Marks)

Question Five

a) As Marketing Manager of a company in fast consumer moving goods' market. Explain how you would increase market share using a penetration strategy and how you would evaluate its effectiveness. **(12 Marks)**

b) Distinguish between product development and innovation. **(8 Marks)**

Question Six

A friend of yours in the diaspora is thinking of establishing a business back home in Zambia as a way of preparing for his return in the near future. He asks you a marketing strategy expert to assess the marketing environment and advise him on what he has to look out for in order for his business to be a success.

Required:

a) Advise your friend on the external factors that can influence operations of the business. **(10 Marks)**

b) Explain the five (5) strategies for market targeting. Which of the five strategies can you advise your friend to use for his business? **(10 Marks)**

END OF EXAMINATION!

THE UNIVERSITY OF ZAMBIA
Graduate School of Business

FINAL EXAMINATION

MBS6061: E- BUSINESS STRATEGIES AND MODELS

Date: 12th September 2019
Time: 09:00hrs – 12:00hrs
Duration: 3 Hours
Venue: GSB CONFERENCE ROOM I

Instructions

1. There are **Six (6) Questions** in this paper
2. The paper has **Two (2) Sections**, each section with **three** questions
3. Each question carries **20 Marks,** *you are required to answer a total of* ***Five (5) Questions***
4. *Answer* ***ALL*** *the questions in* ***Section A*** and Choose ***Any TWO (2)*** *Questions from* ***Section B***

SECTION A

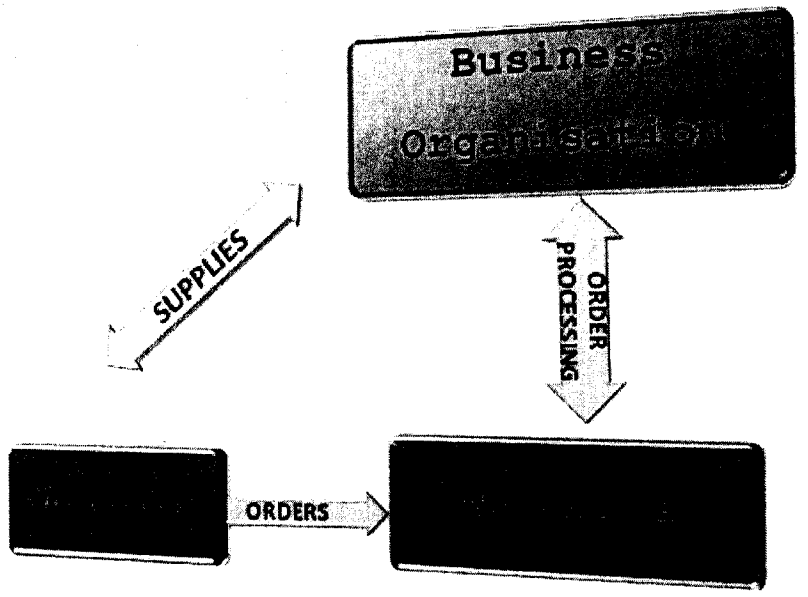
This Section has **THREE** Questions. Answer **ALL** the questions

QUESTION ONE

a) Discuss each of the following in relation to E-Business with examples where possible [5 Marks]

i. E-Business Model
ii. E-Business Strategy
iii. E-Marketing
iv. E-Business Architecture
v. Online Fraud

b) The diagram below shows an example of the B2B E-Business Model [15 Marks].



For each of the following E-Business models below,

i. Draw a diagram similar to the one above
ii. Give a brief descriptions of model and at least one example of such a business in Zambia
iii. Discuss the advantages and disadvantages of each of the models below
    1. Business to Customer(B2C)
    2. Customer to Customer (C2C)
    3. Business to Government (B2G)

QUESTION TWO

a) In the last five years, our local Restaurants, Bakery Stores and Vegetable Markets have lost business the international chain stores which include SPAR Zambia Ltd, Pick n Pay Zambia and Shoprite Zambia. These chain stores have started selling basic food staffs which include Nshima, local vegetables, bakery (Bread) etc. and hence killing the local small scale businesses. [10 Marks].

i. Draw a well labeled diagram showing the **PORTER'S FIVE FORCES MODEL** (Porter, 1985)

ii. Discuss how these chain stores are using each of the factors of **PORTER'S FIVE FORCES MODEL** (Porter, 1985) to gain a competitive advantage over our local businesses (Restaurants, Bakery Stores and Vegetable Market)

b) The company you work for has just learned that you recently graduated in a business programme at the University of Zambia. You specialized in E-Business Strategies and Modelling. In an effort to improve on service deliver and profit margins, you have been requested to put a write-up as an expert to management on how they can best use E-Business to improve the company performance. In your write-up, the company management has requested for the following information

i. The preamble of the company showing you understand the current business operations and model of the company

ii. Your Proposed E-Business Model of the Company

iii. Your purposed advantages if the company were to adopt or enhance the Business through the usage E-Business services

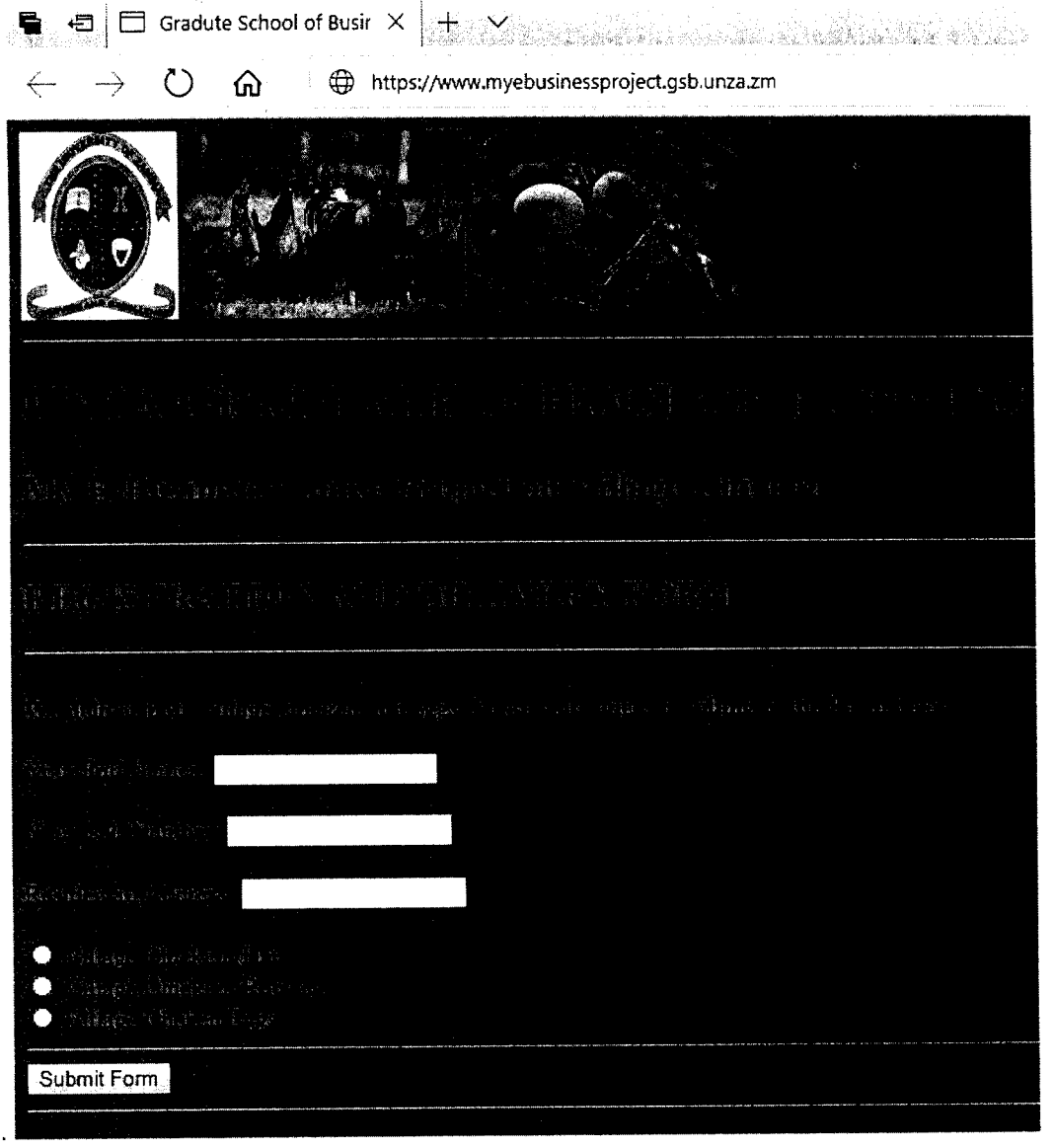
iv. The possible disadvantages and challenges that may come with E-Business services to the company

Give a full detailed write up to the company management by taking into account the four major points above. [10 Marks]

QUESTION THREE

a) Lack of E-business strategy may result in missed opportunities, lack of process support, lack of integration and cooperation in different parts of the organisation and resource wastage. To avoid these challenges, E-business strategy should be based on corporate objectives. The corporate objectives should also be based on new opportunities and threats. Draw a well labeled diagram of the **STRATEGY PROCESS MODEL**. This is a framework that gives a logical sequence to follow to ensure inclusion of all key activities of strategy development [8 Marks]

b) The diagram below shows the output of your E-Business Course Project. You decided to work on Village Chicken and Village Chicken Eggs as shown in the diagram below. In order to complete this project, you decided to create an HTML form by writing a computer program using the HTML code as shown below. You have three images called ***unzalogo.jpg, villagechicken.jpg and eggs.jpg*** for the three images in the form. Write the HTML Code for the Web Page shown below [12 Marks]



SECTION B

This Section has **Three (3)** Questions. Choose any **Two (2)** Questions

QUESTION ONE

a) Briefly discuss each of the following in relation to matters regarding the E-Business ICT Policy [8 Marks].
   i. Recognition of virtual transactions
   ii. Data privacy and protection
   iii. Content blocking
   iv. Monopoly restriction policies

b) Your company has been having challenges to improve the marketing of their products. The marketing team has approached you as an E-Business expert to help improve on the company sales. Briefly discuss each of the following Web Marketing strategies and how it would help to improve company sales [4 Marks].
   i. E-mail Marketing
   ii. Social Media Marketing
   iii. Search Engine Marketing
   iv. Electronic BillBoard Marketing

c) Describe each of the following in relation to E-Marketing [8 Marks]
   i. Improving online visibility
   ii. Targeting the right customer through appropriate segmentation
   iii. Search engine Optimisation
   iv. Banner ads

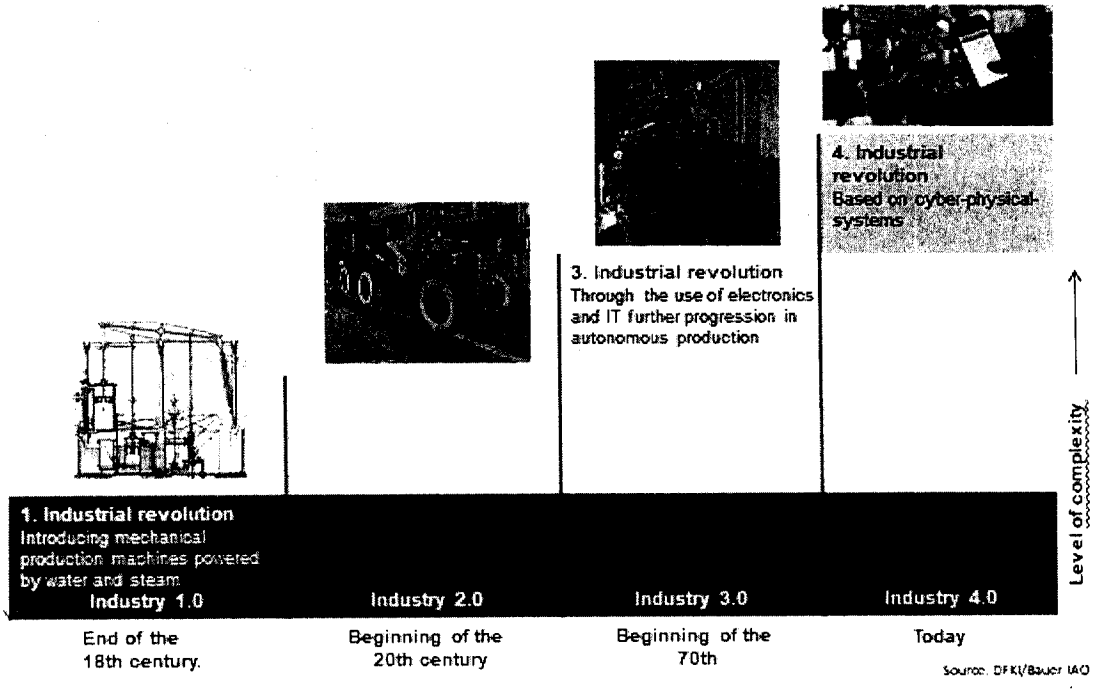
QUESTION TWO

a) The diagram below shows the arrival of the new knowledge economy characterized by globalization and product obsolescence commonly referred to as Industry 4.0. [10 Marks]

i. What is Industry 4.0? Discuss how Industrial 4.0 will affect our lives in Zambia and the current E-Business services
   1. Give at least three services (Possible Jobs) affected by automation in Zambia in the last three years
   2. Give at least two Jobs that have come up in the last three years as a results of automation and resulted in Job creation

ii. Discuss the universal wage in the context of industry 4.0 and how this can help with diminishing number of job prospects

iii. Give the possible workable solutions as an E-business expert for the Zambian government to better prepare for Industry 4.0



b) What are some of the Potential barriers to developing an anti-fraud culture? [3 Marks]

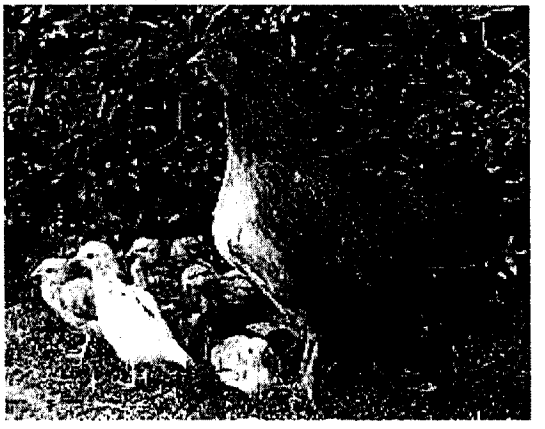
c) Discuss the major Factors Promoting Online Fraud [2 Marks]

d) Briefly discuss each of the following Online Fraud category [5 Marks]
   i. Employment/business opportunities
   ii. Identity Theft
   iii. Lotteries
   iv. Phishing/ Spoofing
   v. Dating Fraud

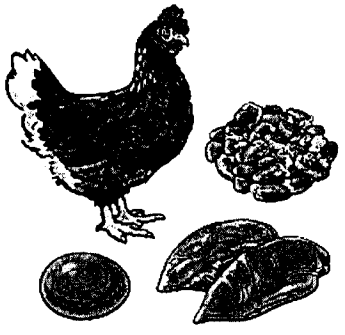
QUESTION THREE

a) The market for chickens and eggs (Especially Village Chicken) has been on the increase both in Zambia and the SADC region. Both SADC and our government are coming up with policies to help small scale farmers like you to penetrate the local and International market. You have decided to quit your current job and try to tap into this market. You have also made the decision that as an E-Business expert, you will use this knowledge to operate your business. Discuss how you would go about to setup your village chicken E-Business company in Zambia and SADC region based on the E-Business Architecture. Refer to all the three layer of the E-Business Architecture Model in your explanation. [10 Marks]





c) Business Environment is a set of internal and external factors that influence the way that business is performed as well as the way that an organisation is operating. With the help of a diagram, discuss how environment affect E-business (Use the Village Chicken Company in Zambia above as an example in your explanation. (Make reference to Internal Environment and External Environment factors) [10 Marks]







END OF EXAMINATION PAPER

THE UNIVERSITY OF ZAMBIA
Graduate School of Business

FINAL EXAMINATION

MBS6061: E- BUSINESS STRATEGIES AND MODELS

Date: 16th December 2020
Time: 14:00hrs – 17:00hrs
Duration: 3 Hours
Venue: Sports Hall

Instructions

1. There are **Five (5) Questions** in this paper
2. Each question carries **25 Marks,**
3. The paper has **Two (2) Sections**
4. *You are required to answer a total of* ***Four (4) Questions***
5. *Answer* ***ALL*** *the questions in* ***Section A*** and Choose ONE *(1) Question from* ***Section B***

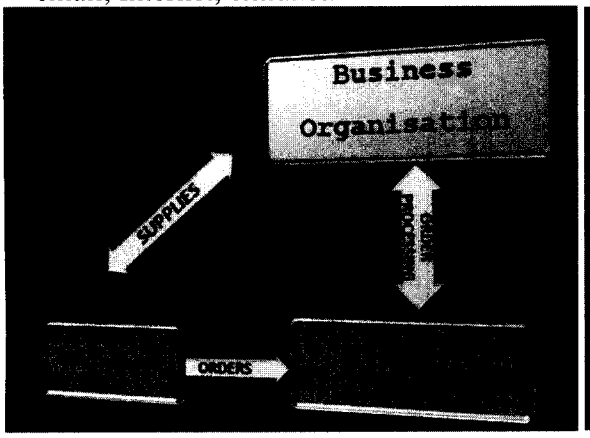
SECTION A

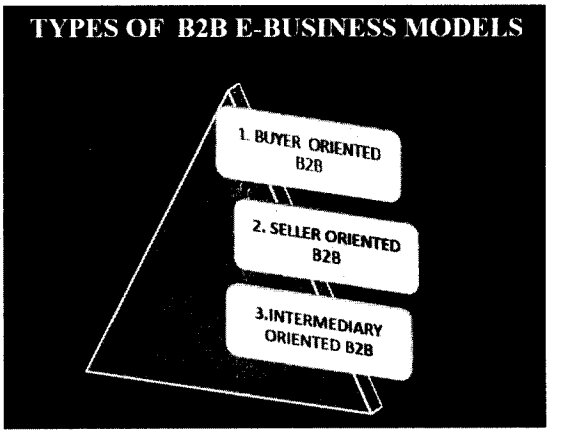
This Section has **THREE** Questions. Answer **ALL** the questions

QUESTION ONE

a) Briefly discuss each of the following with examples [4 Marks]
   i. E-Business Model
   ii. E-Business Strategy

b) The diagram below shows the Business-to-Business E-Model. The B2B goal is to connect businesses to their suppliers, distributors and other parts of the supply chain. For E-business, B2B sites connect businesses with each other through electronic communication: email, Internet, extranet.





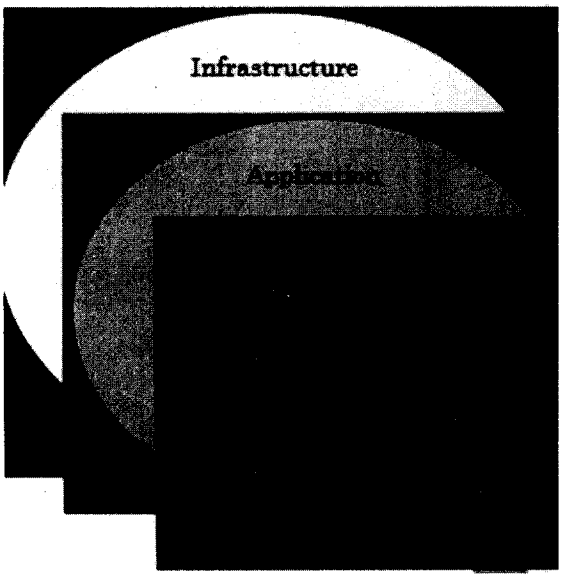
c) Briefly describe each of the following categories of B2B E-Business Model. Give one example in each case [6 Marks]
   1. Buyer Oriented B2B
   2. Seller Oriented B2B
   3. Intermediary Oriented B2B

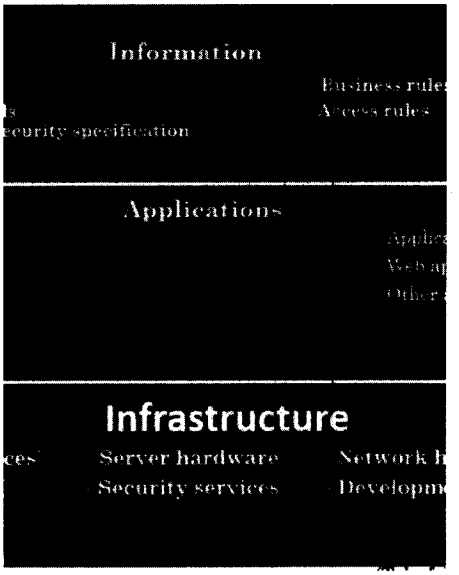
d) Give the major advantages and disadvantages of the B2B E-Business Model [2 Marks]

e) For each of the three E-Business models (**B2C, C2C and B2G**) [13 Marks]
   1. Draw a diagram similar to the diagram for B2B E-Model above
   2. Give a brief description of each model and at least one example of such a business in Zambia
   3. Discuss the advantages and disadvantages of each of the models given above

QUESTION TWO

a) E-business Architectures leverage web technologies to implement mission critical e-business applications. These architectures use clients that have small footprints to access services provided by resource managers and accessed across a strong and reliable network. These clients can be browsers running on PCs or network devices, PDAs, Cell Phones and other Pervasive Computing devices.





You have decided that you do not want to work for any company but you would like to start a family business. You have decided to venture into collecting processing and adding value to natural indigenous wild fruits called Masuku. You would to expert these products to the region and the globe. To achieve this goal, you have decided to set up an E-Business using the three-tier architecture shown above [13 Marks].

i. Discuss in details each of the three layers of the three-tier business architecture with examples

ii. Describe how you would setup your business using the three-tier architecture with the actual examples of the software and equipment that you would need at each layer for your Masuku E-Business

b) The diagram below shows the output of your E-Business Course Project. You decided to work on wild fruits export as shown in the diagram below. In order to complete this project, you decided to create an HTML Web Page form by writing a computer program using HTML code as shown below. You have one images called ***unzalogo.jpg*** for the unza logo images in the form. **Write the HTML Code for the Web Page shown below** with green background colour [12 Marks]

E-Business Course Project

http://www.mycourseproject.gsb.unza.zm



Graduate School of Business - UNZA

My Final Examination Course Project

Available Wild Fruits for Export

1. Masuku
2. Busika
3. Mabuyu

Export Countries of Wild Fruits

- ☐ South Africa
- ☐ Malawi
- ☐ Namibia
- ☐ Bostwana

Origin of Wild Fruits

- ○ Kabwe
- ○ Mumbwa
- ○ Luangwa
- ○ Lufwanyama

Fill in your personal Details Below

First Name:

Last Name:

Nationality:

Submit Form

Click UNZA-GSB to go to the Graduate School of Business Website

QUESTION THREE

a) What is E-Business? Give any two key advantages and two disadvantages of adopting E-Business in the midst of COVID-19 as a Zambia Company [4 Marks]

b) Briefly discuss each of the following Online Fraud category [5 Marks]
   i. Employment/business opportunities
   ii. Identity Theft
   iii. Lotteries
   iv. Phishing/ Spoofing
   v. Dating Fraud

c) You and your family have decided to start your own company in the area of Hair and Beauty. The target market is the Zambia population. Your start-up will initially be in Lusaka and then expand countrywide. You intend to have highly qualified hair and beauty specialists offering a wide range of hair and beauty treatments for men and women including eye, skin, hands, feet, facial, tanning and massage treatments as shown in the Table below.

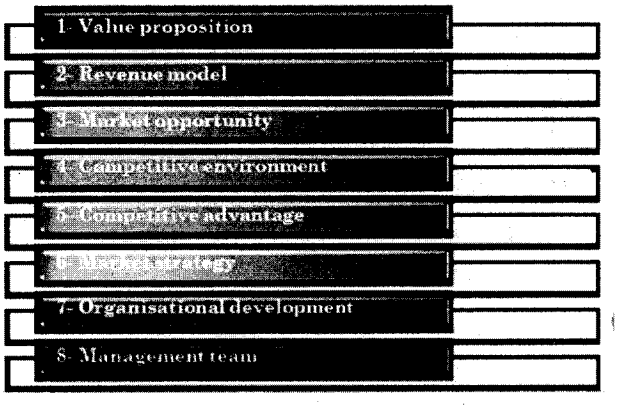




WOMEN		
#	Style	Price
1	Cut and Blow Dry	K180
2	Wash and Cut	K130
3	Blow Dry	K90
4	Hair Colour	K380
5	Nails and Hands	K350
6	Eyes	K250
7	Facial	K450
8	Tanning	K1800
9	Massage Treatment	K350

MEN		
#	Style	Price
1	Wash, Cut and Finish	K120
2	Wash and Cut	K100
3	Dry Cut	K80

As a qualified E- Business specialist, you have decided to run your business based on the e-business model. By making reference to the KEY ELEMENTS OF A BUSINESS MODEL as shown below, discuss in details how you intend to leverage the E-Business model to run your business [16 Marks].



SECTION B

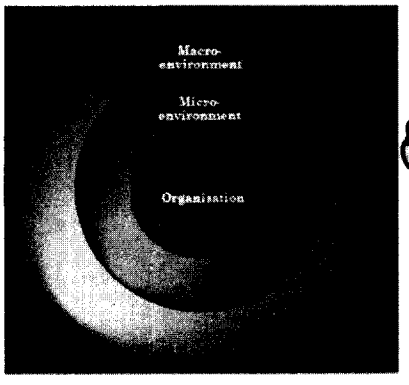
This Section has **Two (2)** Questions. Choose any **One (1)** Questions

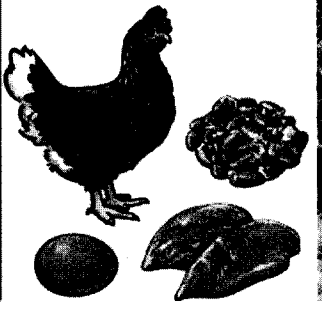
QUESTION ONE

a) Briefly discuss each of the following [5 Marks]
   i. E-Marketing
   ii. Online fraud

b) Describe each of the following in relation to E-Marketing [10 Marks]
   i. E-mail Marketing
   ii. Social Media Marketing
   iii. Search Engine Marketing
   iv. Electronic Billboard Marketing
   v. M-Marketing (Mobile App)

c) The market for chickens and eggs (Especially Village Chicken) has been on the increase both in Zambia and the SADC region. You have decided to quit your current job and try to tap into this market. You have also made the decision that as an E-Business expert, you will use this knowledge to operate your business. Discuss how you would go about to setup your **Village Chicken E-Business company in Zambia and SADC** region based on your knowledge of the Business Environment in Zambia and SADC which is your target market. With the help of a diagram, discuss how environment affect E-business (Use the Village Chicken Company in Zambia above as an example in your explanation. Make reference to Internal Environment and External Environment factors). [10 Marks].







QUESTION TWO

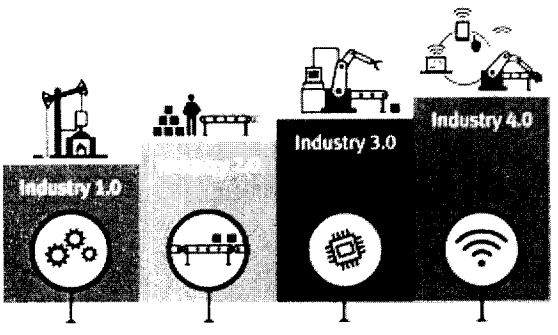
a) The e-business model aims to use and leverage the unique qualities of the Internet and the World Wide Web. Briefly discuss each of the following E-Business Models below [5 Marks]

i. Online Shopfronts
ii. Click and Mortar Model
iii. Built to Order Merchant Model
iv. Service Provider Model
v. Subscription Based Access Model

b) In the last 10 years, there has been an increase in the number of shopping malls and chain stores which have started selling basic foods which include Nshima, local vegetables, bread. The international chain stores are slowly suffocating and hence killing the local small-scale businesses which include our local restaurant, bakery stores and vegetables markets. ***With the help of a diagram, discuss how*** these chain stores are using each of the factors of **Porter's five forces model (Porter, 1985)** to gain a competitive advantage over the local businesses (Restaurants and Bakery Stores) [10 Marks].

c) The diagram below shows the stages of Industry 4.0 [10 Marks]

i. What is Industry 4.0?
ii. Discuss how Industrial 4.0 will affect our lives in Zambia. In your discussion;
    1. Identify and describe any three services that have been affected by automation in Zambia in the last five years
    2. Give at least two Jobs that have come up in the last five years as a result of automation and adoption of E-Business Services
iii. Discuss the universal wage in the context of industry 4.0 and COVID19 how this can help with diminishing number of job prospects
iv. Give the possible workable solutions as an E-business expert for the Zambian government to better prepare for Industry 4.0





End of Examination Question Paper

THE UNIVERSITY OF ZAMBIA
Graduate School of Business

FINAL EXAMINATION

MBS6061: E- BUSINESS STRATEGIES AND MODELS

Date: 17th September 2021
Time: 09:00hrs – 12:00hrs
Duration: 3 Hours
Venue: Sports Hall

Instructions

1. There are **Five (5) Questions** in this paper
2. Each question carries **25 Marks**
3. The paper has **Two (2) Sections**
4. *You are required to answer a total of* ***Four (4) Questions***
5. *Answer* ***ALL*** *the questions in* ***Section A***
6. Choose ***Any TWO*** *(2) Questions from* ***Section B***

SECTION A

This Section has **TWO** Questions. Answer **ALL** the questions

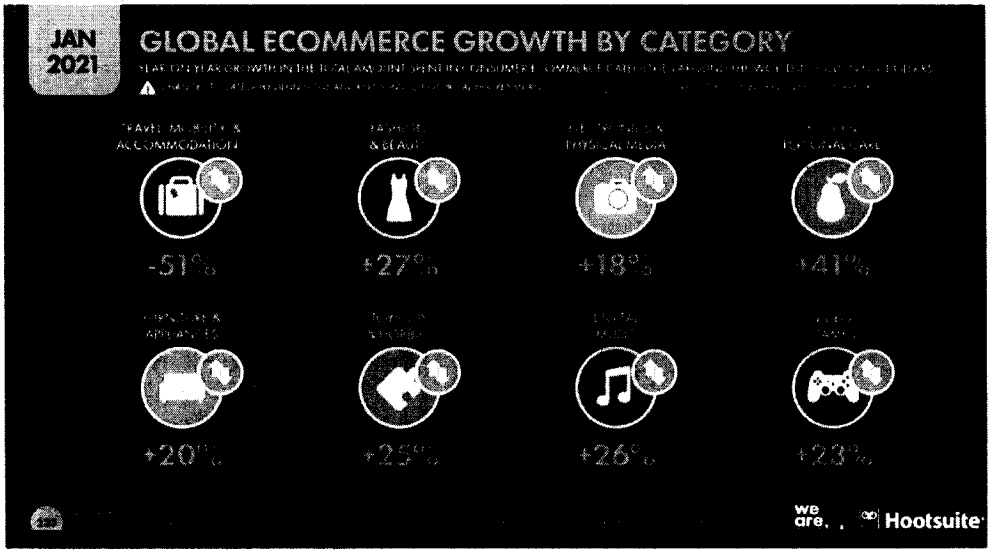
QUESTION ONE

a) The diagram below shows how the various E-Business Sectors were affected by covid-19 by January 2021. For example, Travel, Mobility and Accommodation dropped by more than 50% while the other seven sectors were on the rise [15 Marks].

i. Discuss how Lockdown and Covid-19 may have affected each of the 8 E-Business sectors shown below

ii. Draw a well labelled diagram for each of the following E-Business Models and give a brief description with at least one example in Zambia

1. B2B
2. C2B
3. C2C



b) The company you work for has just learned that you recently graduated in a business programme at the University of Zambia. You specialized in E-Business Strategies and Modelling. In an effort to improve on service deliver and profit margins, you have been requested to put a write-up as an expert to management on how they can best use E-Business to improve the company performance. In your write-up, the company management has requested for the following information

i. The preamble of the company showing you understand the current business operations and model of the company

ii. Your Proposed E-Business Model of the Company

iii. Your purposed advantages if the company were to adopt or enhance the Business through the usage E-Business services

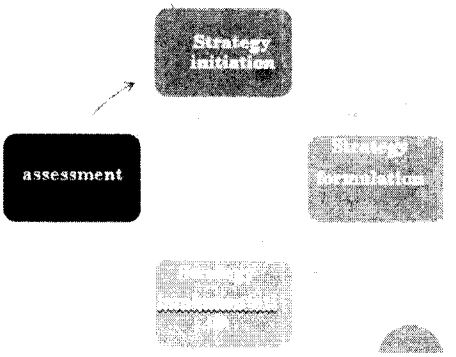
iv. The possible disadvantages and challenges that may come with E-Business services to the company

Give a full detailed write up to the company management by taking into account the four major points above. [10 Marks]

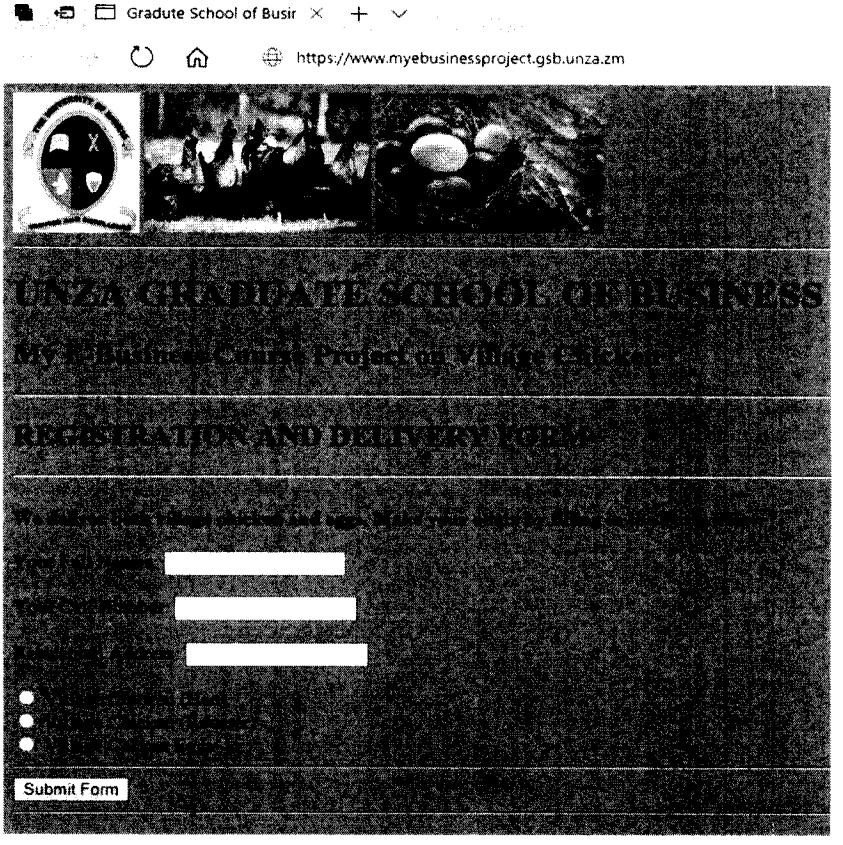
QUESTION TWO

a) Business strategy is the course of action or set of decisions which assist the entrepreneurs in achieving specific business objectives as shown in the diagram below. Discuss each of the following strategy development and implementation tools with examples [12 Marks]

i. Strategy initiation
ii. Strategy formulation
iii. Strategy implementation
iv. Strategy assessment



b) The diagram below shows the output of your family business web portal which you also submitted as your final year school project. You decided to work on a family business based on Village Chicken and Village Chicken Eggs as shown in the diagram below. In order to complete this project, you decided to create an HTML form by writing a computer program using the HTML code as shown below. You have three images called unzalogo.jpg. villagechicken.jpg and eggs.jpg for the three images in the form. Write the HTML Code for the Web Page shown below [13 Marks]

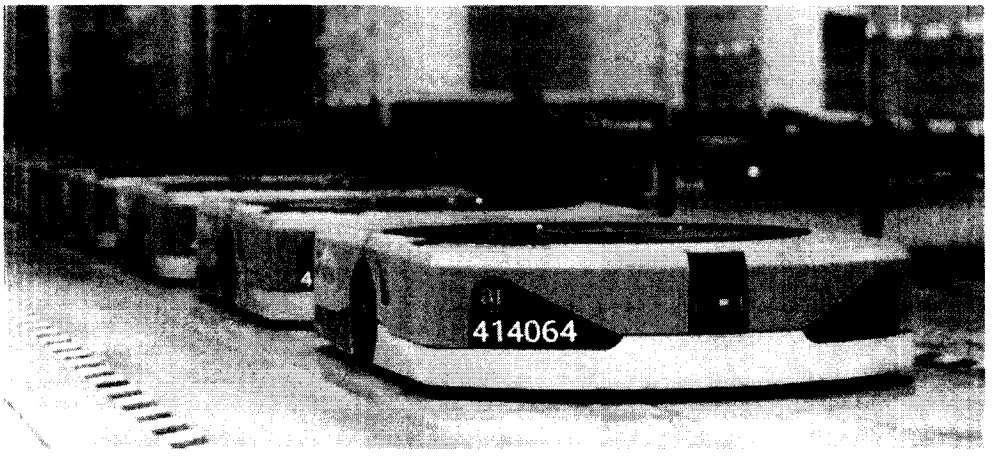


SECTION B

This Section has **Three (3)** Questions. Choose any **Two (2)** Questions

QUESTION ONE

a) Industry 4.0 is the application of technology to digitally transform how industrial companies operate. These technologies include the industrial IoT, automation and robotics, simulation, additive manufacturing, and analytics. Industry 4.0 is driven by a need to boost efficiency, become more agile to respond to market unpredictability, improve quality, and to enable new business models. Amazon is one example of the companies that has been automating their activities rapidly. The diagram below shows the robots used by Amazon in warehouses [11 Marks].



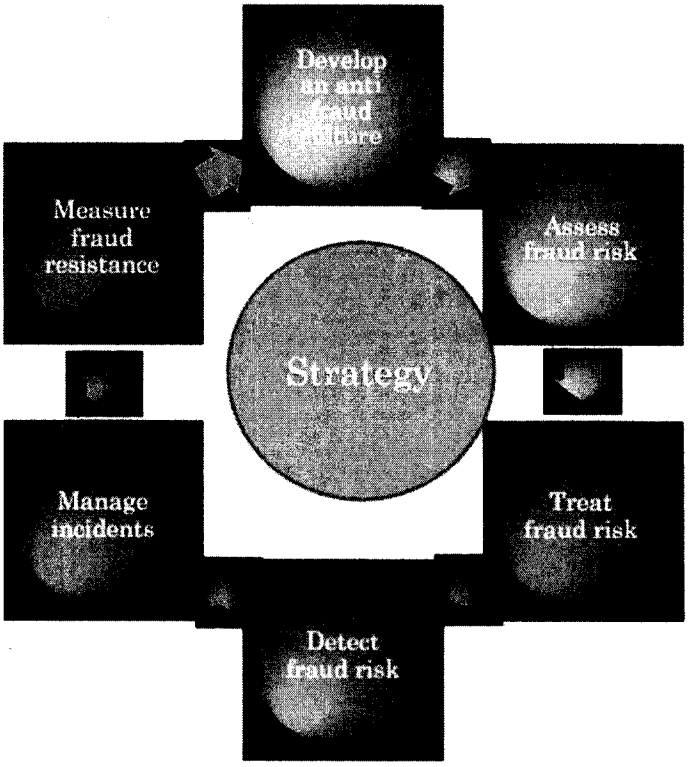
Amazon now has 200,000 robots working in its warehouses

i. Discuss how Covid-19 is affecting the running and implementation of E-Business services through automation (First phase of Industry 4.0)
ii. Discuss how Industrial 4.0 will affect our lives in Zambia and the current E-Business services.
iii. What is the universal wage? Discuss the universal wage in the context of industry 4.0 and how this can help with diminishing number of job prospects
iv. Give the possible workable solutions as an E-business expert for the Zambian government to help better prepare for Industry 4.0 and the effects of Covid-19

b) ONLINE FRAUD can be described as a type of fraud that makes use of Internet for its commission. In order to develop a fraud risk management strategy, organisations need to consider previous cases of fraud and draw up a list of the major elements which should be in place to reduce risks of similar events occurring. The Figure below shows the six major steps that needs to be followed in order to create a robust anti-fraud strategy [14 Marks].

i. Give a brief description for each of the following
   1. ASSET
   2. THREAT

ii. Discuss in details each of the six steps shown below in the diagram that are used to implement a robust anti-fraud strategy



QUESTION TWO

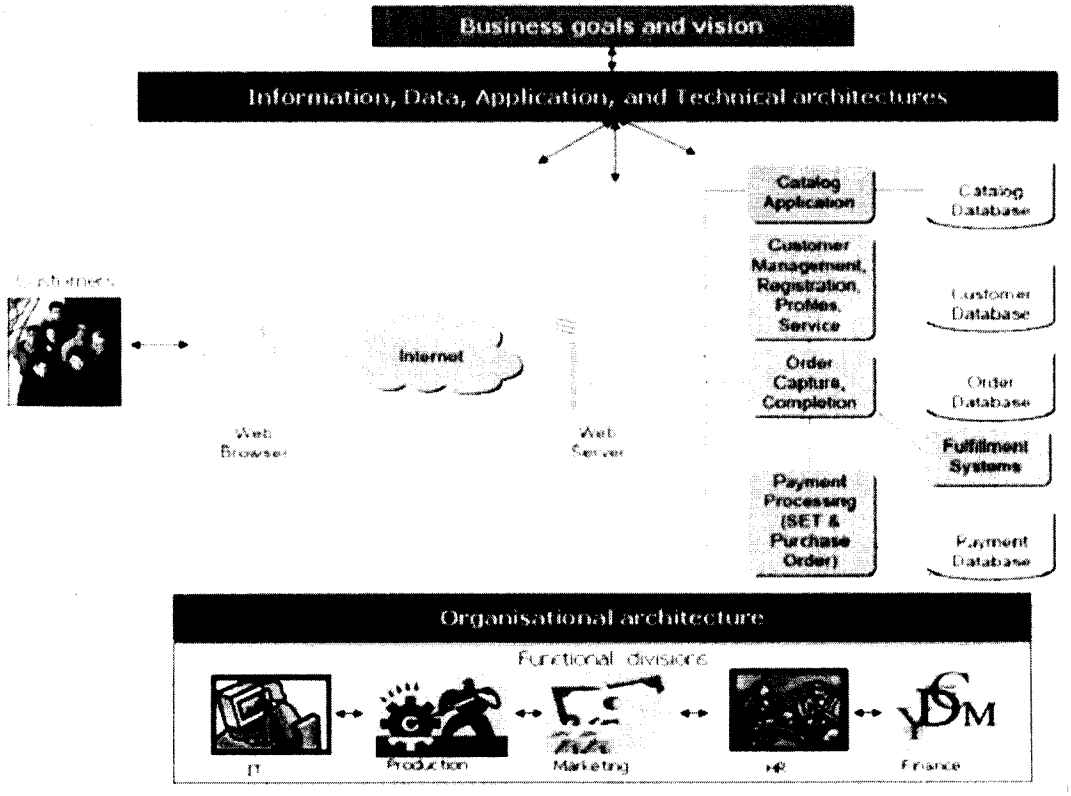
a) An architecture (in the information technology context) is simply a guiding framework, or blueprint for delivering the applications and information required by an organisation. An E-business architecture is a blueprint that is used to guide the delivery of applications and data related to an organisation's E-business activities. It can therefore be decribed a conceptual framework for the organisation of the E-business infrastructure and applications as shown in the diagram below [25 Marks].

i. Name an briefly decribe each of the three layers of the E-business architecture

ii. Developing an e-business architecture requires a six step process. Name and discuss each of the six steps required to develop e-business architecture

iii. As an expert in E-Business, your company has decided that you will be on the team that will developing the E-business architecture for your company and lead the team. You have given the two major options you intend to use when selecting the vender who is going to develop the e-business architecture for your company as shown below. Brifly discuss each of the options below

1. Insourcing
2. Outsourcing
   I. Turnkey
   II. Leasing



THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS STUDIES

EXAM FOR 2021 ACADEMIC YEAR

COURSE: MCC 5012 – FOUNDATIONS OF CORPORATE COMMUNICATION

INSTRUCTIONS:

- **There are three (3) sections**
- **Sections A and B are compulsory**
- **Section C has seven (7) questions. Please choose five (5) only**

Venue: DRGS

Time: 09:00 – 12:00hrs

Date: 02/11/2021

SECTION A

Instructions:

- **Write short answers**
- **All the questions are compulsory**
- **Each question has 4 marks**

1. Imagine that you travelling by bus from Intercity bus station and the conductor tells you that there are only three people remaining before the bus is filled up. After buying the ticket you get on the bus and find out that actually there are still lots of passengers needed before it's filled up. What law of persuasion would you think the bus conductor was using?
2. What is the difference between Persuasion and Propaganda?
3. What is the difference between Public Relations and Corporate Communications?
4. List the 5 phases through which Public Relations has gone through.
5. Your class had a problem with the University. After sitting for exams in this course, unfortunately your former lecturer in this course never released the results. So you wanted to sue the University. After various discussions with the University authority, you finally reached an amicable solution: you had to meet each other half-way. That is why you agreed to do almost 2 months intensive class work (November – December) and thereafter write exams. How do you call this bargaining process?

SECTION B

Instructions:

- **Write brief answers**
- **All the questions are compulsory**
- **Each question has 6 marks**

6. List and briefly explain five (5) theories of Persuasion.
7. The new government is in a hurry to encourage youths to go into entrepreneurship. So you team up with your colleagues and get a licence, a loan and hit the ground to start producing bottled water in Luapula Province. You are the Corporate Communications Officer. Using Prof. Robert Cialdini's techniques, kindly advertise your products for quick sale.

8. List and briefly explain five (5) theories of Public Relations.

9. You are the Chairperson of the Youth in UPND which has won the general elections and formed government. The Youths are in a hurry to occupy and control markets and bus stations and also sale plots to make cool cash like their colleagues in the former ruling political party. The President has tasked you to negotiate nicely with the youths so that they do not do any of these things but instead form cooperatives and go into entrepreneurship. What persuasion techniques are you going to use in order to persuade the street venders to restrain themselves from these evil activities?

10. A few undergraduates undertaking a Corporate Communications degree programme have come on attachment to your organization and are under the impression that your work is always milk and honey; that it is always a smooth ride because most of the times you are with the boss. Kindly explain to them about 12 huddles you meet in your work?

SECTION C

Instructions:

- **There are seven (7) questions**
- **Answer only five (5) questions**
- **Each question has 10 marks**

11. You are the newly elected President and have formed government. You won the lections out of an alliance with other political parties. A few years down the line, the alliance is shaky and some want to pull out because they feel that they are receiving a raw deal. So you resolve to invite them to a round table meeting. How do you resolve this impasse?

12. The newly elected President wants a Minister of Media and Information as Chief government's spokesperson who is an orator. So he invites a few Members of Parliament to go for interviews so that one is picked to be the Minister of Media and Information. Kindly show your knowledge of your responsibilities and strengths as Chief government spokesperson.

13. South Africa has detected the 4th wave of Covid-19 called Omicron. So the Minister of Health has announced some new guidelines in order to protect the people. Some new guidelines are as follows: whoever is not vaccinated will not be allowed to access any public place such as churches, government buildings, markets, bus stations etc; people have to move with vaccination cards as if they are NRCs etc. Unfortunately there is an uproar from some sectors of the public who feel that even though the Minister may mean well, yet it is against the human rights of the people to impose such policies because some are against these vaccines which have not been proved to be efficacious. Hence they are using people like guinea pigs. There is tension in the country. Finally as Minister of Information and Government Chief spokesperson, you take charge to speak on the press conference. Your fellow Ministers are surprised – what charm have you used to cool the public down. Please explain.

14. You are the Presidential Press Aid and your political party has won the general elections. Write a speech for the President to address the nation at the swearing in ceremony.

15. A new promising company has hit the ground called Mulyokela Youth Enterprise and you have been employed as the Corporate Communications Officer. What Corporate Communications Objectives do you wish to put in place in order for your department to contribute to the viability of the Company?

16. The Patriotic Front has lost the elections and hence it has lost favour with the Zambians. However, it wants to bounce back and win the 2026 elections. Kindly come up with a strategy so that you win back your lost favour.

17. You have been hired by a new Chinese Company that still thinks in Public Relations as "The Public be Fooled". To the contrary, you refuse this kind of approach. Kindly help your boss to understand the ethical dimension of your work.

GOOD LUCK, ALL THE BEST
AND
BON VOYAGE

UNIVERSITY OF ZAMBIA

Branding & Corporate Identity (MCC5032)

Date: Tuesday 6 February 2018

Time: 14:00 Hours

Venue: DRGS

INSTRUCTIONS

1. This paper consists of Sections A and B.

2. Section A is **compulsory**. It carries a maximum of 40 Marks.

3. Section B has 5 questions. Answer **any three** questions. Each question **carries** 20 marks

4. Time allowed 3 hours

SECTION A: COMPULSORY

QUESTION 1: (40 MARKS)

Question One Lusaka City Council starts the rebranding exercise

THE Lusaka City Council (LCC) has embarked on an ambitious rebranding exercise to motivate employees and enhance service delivery as part of its strategic plan and fulfilment of its mandate by 2021. Lusaka mayor Wilson Kalumba said the rebranding of the local authority will include face-lifting of the civic centre and branding of its utility motor vehicles, among others. Mr Kalumba said the rebranding process is necessary for the city council to earn trust and credibility from clients and residents in the capital city. This came to light during the official opening of a four day strategic meeting, which attracted councillors from various wards in Lusaka. Mr Kalumba said the exercise is one of the steps LCC is undertaking to effectively address the challenges it is facing. "We need a new strategy and it requires change, we need a new identity and change of the Civic Centre by face-lifting it. The people we are serving are exposed to the outside world and expect proper service. We are dealing with very enlightened residents," he said.

Mr Kalumba said the LCC strategic plan which was formulated during the meeting, will aim at devising effective means of resource mobilisation, addressing the challenges of rural-urban migration, and limited infrastructure. He said the local authority further intends to streamline its operations in tune with the Smart Zambia campaign which aims at improving performance and accountability of public office holders. Mr Kalumba said some LCC workers are not honest as they pursue personal interests, and that the trend should be addressed urgently. "We should also do away with manual procedures and introduce information technology. This will also address the challenge of a bloated workforce, and improve our resource base," he said. He said the local authority further needs to work towards effectively addressing road traffic congestion, illegal bars, and noise from the drinking spots, and help resolve crime.

Lusaka town clerk Alex Mwansa said the meeting set direction for the city to meet the desires and expectations of residents. "We are faced with challenges of underdevelopment and poverty in Lusaka, let us all highlight issues affecting the wards, we do not want development without a well formulated strategic plan. Let us therefore speak candidly and rationally about the challenges facing our wards," Mr Mwansa said.

Source: Adapted from https://www.lusakatimes.com/2017/09/02/lusaka-city-council-starts-rebranding-exercise/

QUESTION ONE (40 Marks)

With reference to the case above, answer the following questions.

a. Discuss how LCC can use the elements of corporate branding to achieve their objectives. **(20 Marks)**

b. Identify four strategic areas in the passage and discuss how LCC plans use them to rebrand the city. **(10 Marks)**

c. Explain how the newly created brand will create value for the residents and LCC **(10 Marks)**

SECTION B: ANSWER ONLY THREE QUESTIONS

QUESTION TWO

a. There is a debate about which to brand first, the company or its products/brands. From your point of view, using examples, which one comes first and why? **(10 Marks)**

b. Effective corporate identity management creates a positive corporate image and simultaneously helps organizational members to align their work with the organization's vision and goal. Using an example of your choice, discuss how managers can best position brands to create maximum value. **(10 Marks)**

QUESTION THREE

a. Firms have become increasingly aware of the importance of developing and managing their corporate identity as a strategic resource and source of competitive advantage. Using an example, discuss how corporate identity can be applied to organizational identity **(10 Marks)**

b. Discuss how your organization can use the corporate identity mix to improve on its brands. **(10 Marks)**

QUESTION FOUR

a. Corporate Visual Identity (CVI) is a crucial part of the identity of any organization. Managing corporate identity deals with the strategic development of corporate identity, design and effects of specific elements of the CVI. Using an organization of your choice discuss how CVI is developed and the importance of managing it. **(12 Marks)**

b. Explain how your organization has built and is managing Corporate Identity using Social Media **(8 Marks)**

QUESTION FIVE

Between 1990 and 2000, Zambia reordered the highest number of failed companies such as Kafue Textiles, Copperbelt Steel Manufacturing, Lusaka Engineering (LENCO) and Mulungushi Textiles among others. As a trained branding and corporate identity expert, discuss how the different components of corporate identity could have supported any of the company. **(20 Marks)**

QUESTION SIX

a. Using a company of your choice, explain how it has been able to build a strong Corporate Identity. Discuss why other corporate identity programs fail. **(10 Marks).**

b. Discuss your role as an employee of your organization towards corporate identity management.

END

GOOD LUCK

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
MASTER OF SCIENCE IN CORPORATE COMMUNICATION

SEPTEMBER, 2019 EXAM

MCC 5032: BRANDING AND CORPORATE IDENTITY

DATE: 20th SEPTEMBER, 2019
TIME: 14:00 – 17:00 HOURS
DURATION: THREE (3) HOURS
ANSWER ALL QUESTIONS (40 MARKS)

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1. Discuss the history of the concept of corporate identity in the Zambia context. (5)

2. Firms have become increasingly aware of the importance of developing and managing their corporate identity as a strategic resource. This is because effective corporate identity management creates a positive image and simultaneously helps organisational stakeholders to align their work with the organisation's vision and goal.
   a) Discuss how corporate identity can be applied to the identity of the Graduate School of Business (5)
   b) Discuss how management at the Graduate School of Business can best use and position their students to enhance the image on the institution. (5)

3. Discuss how a corporate visual identity can support the reputation of an organisation. (5)

4. Briefly discuss the differences between corporate identity and corporate image. (5)

5. Discuss how the Graduate School of Business can build and manage its corporate identity on social media (5)

6. Different Corporations depending on the planning situation employ different steps in their corporate planning process. Outline and discuss the elements of a typical corporate planning process. (10)

7. Discuss the similarities and differences between product branding and corporate branding. (10)

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
MASTER OF SCIENCE IN CORPORATE COMMUNICATION

MARCH, 2021 EXAM

MCC 5032: BRANDING AND CORPORATE IDENTITY

DATE: 9th MARCH, 2021
TIME: 14:00 – 17:00 HOURS
DURATION: THREE (3) HOURS

SECTION A: ANSWER ALL QUESTIONS (40 MARKS)

1. Using social, economic and other factors, to trace the history of corporate identity in Zambia (10).
2. According to Olins (1990) there are three questions in managers need to answer in order to establish a strong corporate identity. Discuss how an institution can use these questions to establish a strong corporate identity (10).
3. Using the ACID Test of corporate identity management, Balmer and Soenen (1999) identify six (6) different types of corporate identity. Outline the argument of the ACID Test (10).
4. Discuss the differences between corporate branding and product branding (10).

SECTION B: ANSWER ONLY TWO QUESTIONS. QUESTION 5 IS COMPULSORY (20 MARKS EACH)

1. Different social media and branding experts have identified some crucial actions and elements for building and managing successful brands on social media, discuss how these elements can be used to manage personal brands, especially for celebrities and politicians. (20)

2. Discuss Melewar's (2003) taxonomy of the components of corporate identity (20).

3. Different corporations, depending on the planning situation, employ different steps in their corporate planning process. Outline and discuss the elements of a typical corporate planning process. (20)

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS STUDIES

EXAM FOR 2018/2019 ACADEMIC YEAR

COURSE: MCC 5041 – CRISIS COMMUNICATION

INSTRUCTIONS:

- **There are three (3) sections**
- **Sections A and B are compulsory**
- **Section C has five (5) questions. Please choose three (3) only**

Venue: Graduate School of Business Studies

Time: 14:00 – 17:00hrs

Date: 21/02/2019

SECTION A

Instructions:

- **Write short answers**
- **All the questions are compulsory**
- **Each question has 2 marks**

1. What is Crisis Communication?
2. What are the dimensions of a crisis?
3. What is the connection between a crisis and communication?
4. Outline the stages of a crisis in accordance with Mitroff.
5. Who controls the truth during a crisis?

SECTION B

Instructions:

- **Write brief answers**
- **All the questions are compulsory**
- **Each question has 4 marks**

6. List and define 10 types of crises. And in each case give an example of that crisis.
7. List and briefly explain the 10 Steps of Crisis Communications by Jonathan Bernstein.
8. List down the crisis communication theories and then explain any five (5) theories.
9. A boat on Lake Mweru carrying 40 people has capsized killing about 20 people. You are the owner of the boat. What theory are you going to use when talking to the family members and why?
10. Wherever there seems to be a crisis, the media seems to be there. Why this coincidence?

SECTION C

Instructions:

- **There are five (5) questions**
- **Answer only three (3) questions**
- **Each question has 10 marks**

11. Zambia Police Officers have arrested five Zambian soldiers for traffic offences. When they refused to pay, they were beaten by the police and put in the cells. A sizeable number of soldiers have gone to all the police institutions in Lusaka and have declared war with the police. The nation is gripped with tension. You are the spokesperson of the Ministry of Home Affairs. How are you going to handle this issue?

12. An underground mine has collapsed and miners have died. Family members have rushed to your offices and your Managing Director will meet the crowd. Kindly run through how he should communicate.

13. Markets in Lusaka, Ndola, Kabwe, Kitwe and Mufulira have been burnt to ashes and the ruling party is being accused of having caused the fires because of the deals to sell the markets to the Chinese. There is an uproar from the marketeers and the general public. Make a speech to redeem your party.

14. Terrorists have gone to Manda Hill and they are robbing shops and shooting anyhow. There is pandemonium at the shopping mall. It is clear there is a crisis. You are the Government Spokesperson. Kindly intervene.

15. You are the Presidential Press aid. News has broken out about some of the President's children and ministers involved in drugs business. The President is known for shielding his family and being hot tempered. He speaks raw. You as Presidential press aid knows very well that at this press conference some journalists might fire up some embarrassing questions regarding this matter. Kindly advise the President how he should handle this issue; what to say and what not.

GOOD LUCK & ALL THE BEST

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS STUDIES

EXAM FOR 2020 ACADEMIC YEAR COHORT 2

COURSE: MCC 5041 – CRISIS COMMUNICATION

INSTRUCTIONS:

- **There are three (3) sections**
- **Sections A and B are compulsory**
- **Section C has six (6) questions. Please choose four (4) only**

Venue: Sports Hall

Time: 09:00 – 12:00hrs

Date: 07/12/2020

SECTION A

Instructions:

- **Write short answers**
- **All the questions are compulsory**
- **Each question has 2 marks**

1. What are the key principles of crisis management?
2. Why is the media such a special stakeholder in a crisis?
3. When President Michael Sata died, there was a bit of uncertainty as to who was to take over the mantle in the PF. On one side there was Guy Scot who was the Acting President who seemed to be with the cartel and on the other hand there was the Secretary General with the PF Central Committee. Zambians were treated to a rude shock that one day they woke and Lungu had been sacked as PF Secretary General and hence powerless and the cartel started smelling some presidential power. Then the next day it was the vice versa. If you were the spokesperson of the cartel, a phone call wakes you up from your night sleep about the twist of matter, how would you handle the journalist?
4. This year, Zambia defaulted on the payment of the interest on the loan. While the Zambian government tried to give some explanation why it could not manage to pay the debt interest, there seemed to be some mixed feelings from the public. So who is controlling the truth?

SECTION B

Instructions:

- **Write brief answers**
- **All the questions are compulsory**
- **Each question has 4 marks**

5. List and explain the steps of Crisis Communications by Jonathan Bernstein.
6. What are the cardinal rules of crisis communication?
7. List and explain the crisis communication theories.
8. You are a Member of Parliament belonging to the Catholic Church whose stand is NO to bill 10. There is a stand-off between you Catholic parliamentarians supporting bill 10 and the Catholic Church authority. Finally the bill has failed but still you feel like making another attempt to canvass for support in the 2021 elections. What theory are you going to use when talking to the Bishops and why.

9. You are a group of young men who feel that because of gender equality. time has come also to remove the bride price. You need a spokesperson to represent you on ZNBC TV 1 panel discussion. What qualities are you going to look for in choosing a spokesperson?

SECTION C

Instructions:

- **There are six (6) questions**
- **Answer only four (4) questions**
- **Each question has 8 marks**

10. The University of Zambia has opened amid covid 19. You have been called upon to give a workshop to Management about Crisis Preparation for UNZA. Kindly explain the steps.

11. You are a Minister who in your private life wanted to be going out with a married lady. Unfortunately your nude sexual pictures you were using to attract the lady have gone viral. What are you going to do to recover your reputation crisis?

12. A few weeks ago, a boat carrying 9 people capsized on Lake Bangweulu and only 2 people survived. You are the MP of that Constituency. Kindly list down the points of how you are going to communicate to the Stakeholders in a Crisis.

13. Recall the gassing crisis the Zambians went through. You are the spokesperson of the Police Service with the task of updating the nation. How are you going to be handling the journalists.

14. You are working as the spokesperson for the Electoral Commission of Zambia. News has broken out about some under aged children being issued with voter's cards. As a result different political parties are accusing the commission of embarking on the rigging of General Elections to be held next year in 2021. The ECZ Chairperson is known for shielding the commission and being casual and even trivializing important matters like this one. You as the Corporate Communication's Officer knows very well that at this press conference some journalists might fire up some embarrassing questions regarding this matter. Kindly advise the ECZ Chairperson how he should handle this issue; what to say and what not.

15. You are working for a company dealing in "tugiligili" liquor. News has come out that sometimes they mix the liquor with "lutuku" and acid and other concoctions deadly for human consumption. You are the company spokesperson. How are you going to repair the brand's post-crisis image?

GOOD LUCK & ALL THE BEST

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS STUDIES

EXAM FOR 2020/2021 ACADEMIC YEAR

COURSE: MCC 5041 – CRISIS COMMUNICATION

INSTRUCTIONS:

- There are three (3) sections
- Sections A and B are compulsory
- Section C has five (5) questions. Please choose three (3) only

Venue: Sports Hall

Time: 09:00 – 12:00hrs

Date: 11/03/2021

SECTION A

Instructions:

- **Write short answers**
- **All the questions are compulsory**
- **Each question has 3 marks**

1. What is Crisis Communications?
2. What are the cardinal rules of crisis communication?
3. Why is the media such a special stakeholder in a crisis?
4. Can you mention the stages in a crisis according to Mitroff?
5. In the current government, whenever ministers have been taken to court on matters of corruption, they have been acquitted even on matters which seemed to be obvious. To this effect the public hold mixed feelings. So who is controlling the truth during this era?

SECTION B

Instructions:

- **Write brief answers**
- **All the questions are compulsory**
- **Each question has 5 marks**

6. List and explain the steps of Crisis Communications by Jonathan Bernstein.

7. A Zambian Minister has been involved in the illegal gold mining in Kasensele area in Mwinilunga. The news is in the hands of the journalists and they have come to your office as Police Public Relations Officer. How are you going to handle this issue?
8. List and explain at least 5 crisis communication theories.
9. You are a Member of Parliament belonging to the Catholic Church whose stand is NO to bill 10. There is a stand-off between you Catholic parliamentarians supporting bill 10 and the Catholic Church authority. Finally the bill has failed but still you feel like making another attempt to canvass for support in the 2021 elections. What theory are you going to use when talking to the Bishops and why.
10. Imagine that your opposition political party is a member of a newly formed opposition political party alliance called Capamo Bonse. This is in view of the forth coming general elections and hence the situation is "DO or DIE". You need a spokesperson to represent this alliance of the opposition political

parties whenever there is something to say to the media. What qualities are you going to look for in choosing a spokesperson?

SECTION C

Instructions:

- **There are five (5) questions**
- **Answer only three (3) questions**
- **Each question has 20 marks**

11. During this rain season, it has been raining cats and dogs. So government is concerned that there might be floods in some places like the Lunga swamps. You have been called upon to give a workshop to the Disaster Management and Mitigation Unit about Crisis Preparation. Kindly explain the steps.

12. An Opposition Political Party Leader was summoned by the police to answer to some charges. On this material day when this leader went, he was escorted by party officials and plenty of cadres. On the side of government, police have been given orders to disperse crowds and in the course of this confusion police opened fire and killed 2 innocent citizens. The public is upset with the turn of events and as Minister of Home Affairs you have to meet the angry public that has gathered outside your office. You are the Public Relations Officer of the Ministry of Home Affairs. Kindly run through how he should communicate.

13. A syndicate has been unearthed in which some Zambians and Chinese are producing fake Covid-19 drugs. Hence the general public is very suspicious of any Covid-19 drugs, thereby causing a brand failure of the drug. You are a genuine pharmaceutical company producing genuine covid-19 drugs. Which ways can you use in order to repair the Covid-19 brand's post-crisis image?

14. You are a man of God with a very good reputation in society. However, one day in preaching about peaceful political campaigns in view of the forth coming general elections, you exaggerated and found yourself compromised. The public rose against you and you suffered a reputation lose. Which ways can you use in order to recover after this Reputation Crisis?

15. You are the Presidential Press aid. News has broken out about the Ministry of Health distributing expired drugs in hospitals and clinics. The President is known for shielding his Ministers and being casual and even trivializing important matters like this one. You as Presidential press aid knows very well that at this press conference some journalists might fire up some embarrassing questions regarding this matter. Kindly advise the President how he should handle this issue; what to say and what not.

GOOD LUCK & ALL THE BEST

THE UNIVERSITY OF ZAMBIA
Graduate School of Business
MCC 6011 – Strategic Communication Management
TIME 3 HOURS
December 2020

INSTRUCTIONS

This examination paper is composed of THREE sections. Follow instructions under each section.
Write legibly

SECTION ONE

INSTRUCTIONS: *Write short explanatory notes on any four of the following - 20 Marks*

1. Publics
2. Competitive edge
3. Branding
4. Digital Society
5. Afriethics
6. Stakeholders
7. Monological communication
8. Empathy

SECTION THREE

INSTRUCTIONS: *Answer ALL THREE questions*:

9. Scholar **Jaron Lanier** argues that Digital 'slaves' upload content for free while internet companies make money. State how you, as a corporate communication manager, could take advantage of this freely available labour *- 10 Marks*

10. Strategic Communication should be managed in such a way that it is society-based so that what is communicated is 'good' for the community. Explain the significance of this statement *- 10 Marks*

11. Critically discuss the concept of 'public interest' in Public Relations and how you could reflect public interest in corporate communication activities *-10 Marks*

SECTION FOUR

INSTRUCTIONS: *Answer any TWO from the following questions:*

12. The **Food Reserve Agency** (FRA) is a government parastatal institution that is responsible for maintaining and administering Zambia's strategic food reserves, as a newly-appointed corporate communication manager, discuss what you would do to strategically manage the communication affairs of the FRA *- 25 Marks*

13. Scholar **Martin Buber** argues that dialogue is the effort put into recognising the value of other person, and seeing the 'other' as not a means to get the desired goal, while viewing others as

NOT objects. Discuss this postulation with reference to the practice of modern strategic communication management *– 25 Marks*

14. *Critics of* ***dialogic communication*** *argue that dialogue in corporate communication is not* practical; often falls short of people's expectations; is exploited by one side, or the other, and; has no standards for implementing it. Thoroughly discuss and rebut these arguments. *- 25 Marks*

15. Zambia corporate communication managers face **unique challenges** in their professional practices. Identify some of these and discuss how you would overcome them *- 25 Marks*

END OF EXAM

University of Zambia Examinations

15 March 2021

Graduate School of Business

PO Box 32379, Lusaka, Zambia

COURSE:	MCC 6011 STRATEGIC COMMUNICATION MANAGEMENT
DURATION:	THREE HOURS
INSTRUCTIONS:	Answer ALL Questions in SECTION A and in SECTION B, but only two questions in SECTION C
	Write legibly

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

1. Write brief explanatory notes on the following concepts:
   a. Stakeholder
   b. Publics
   c. Dialogue
   d. Relational Communication *[20 Marks]*

2. What is the significance of the concept of 'Unique Selling Proposition' in Strategic Communication Management? *[20 Marks]*

SECTION B: ANSWER BOTH QUESTIONS FROM THIS SECTION

3. Recently, in a wide-ranging interview, the British Queen's grandson Harry and his wife Megan, who live in self-imposed 'exile' in the USA, accused some of the Queens relatives at the London Royal Palace, of being racist. Megan is Black. In response, the Queen's spokesperson issued the following full statement:

   "The whole family is saddened to learn the full extent of how challenging the last few years have been for Harry and Meghan. The issues raised [in the television interview], particularly that of race are concerning. While some recollections may vary, they are taken very seriously and will be addressed by the family privately. Harry, Meghan and Archie [the couple's son] will always be much loved family members."

Critically examine the significance of this statement within the context of managing the profile and public expectations of a national institution, in this instance, that of the Head of the British State. *[20 Marks]*

4. On March 6, 2021, the UNZA issued a "Special Announcement" stating that its Vive Chancellor Prof. Luke Mumba will *"address the nation on the State of the University of Zambia. The address will cover pertinent issues regarding the operations and development of the leading higher learning institution in Zambia. The address ...will be broadcast live on UNZA Radio and all official UNZA Social Media platforms..."*

   Critically analyse the communication(s) strategies adopted by the UNZA: Consider both the positives and negatives of these strategies. Conclude by summarising how you could have approached the issue were you the UNZA spokesperson. *[20 Marks]*

SECTION C: ANSWER ANY TWO QUESTIONS AMONG THE FOLLOWING

5. Compare and contrast the different practical managerial approaches followed in Public Relations Management against those in Strategic Communication Management *[10 marks]*

6. Scholar **Carl Botan** argues that "traditional approaches to Public Relations relegate publics to secondary role, making them instruments for meeting organisational policy or marketing needs; whereas dialogue elevates publics to status of communication equal with the organisation." Discuss the differing effects of the two approaches (traditional vs dialogic) in the practice of corporate communication. *[10 Marks]*

7. The fundamental purpose of Strategic Communication Management is the creation and development of on-going relationships with key stakeholders. Who are an institution's (or corporate) stakeholders and how can these relationships be created, developed and maintained in the Digital Era? *[10 Marks]*

8. Outline and discuss how organisations, or corporates, can effectively utilise various forms of media in the Management of their Strategic Communication activities *[10 Marks]*

END OF EXAM

SF

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
MASTER OF SCIENCE IN CORPORATE COMMUNICATION

DECEMBER, 2020 EXAM

MCC 6021: INTERCULTURAL COMMUNICATION

DATE: 15th December, 2020
TIME: 09:00 – 12:00 Hours
DURATION: Three (3) Hours

SECTION A: SHORT ANSWER QUESTIONS – ANSWER ALL (40 Marks)

1. What is culture and how do you learn it? (10)
2. Define intercultural communication and explain why it matters. (10)
3. Explain the meaning of the statement 'culture is communication and communication is culture.' (5)
4. Explain the meaning of the statement, 'the shortest way between two people is a smile.' (5)
5. What is meant by the term 'cultural shock'? (5)
6. What is cultural diversity? (5)

SECTION B: ESSAY QUESTIONS - ANSWER TWO (2) QUESTIONS (60 Marks)

7. Novinger (2001) has observed that, "the successful intercultural communication process best begins with goodwill on both sides. However, an individual's negative reactions and evaluations of a foreign culture may create intercultural communication barriers". In view of this statement, discuss the intercultural communication challenges you think are faced by the Asian employers in Zambia. (30)

8. Mubita, a Zambian native, is deployed to a temporary overseas work assignment in the United States, and upon return, he reports that U.S. employees are "pushy and critical," as they often directly told him what to do. Critically discuss Nasilele Mubita's cultural position in evaluating U.S. employees' behaviour. (30)

9. Discuss how the domain of Power Distance relates to leadership and management styles in different cultures? (30)

END OF EXAM

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
MASTER OF SCIENCE IN CORPORATE COMMUNICATION

JUNE 2016 EXAM

MCC 6052: CONSUMER MEDIA COMMUNICATION

DATE: 14th JUNE, 2018
TIME: 17:30 – 20:30 HOURS
DURATION: THREE (3) HOURS

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SECTION A: ANSWER ALL QUESTIONS (40 MARKS)

1. Briefly discuss the definitions of consumer media communication. (5)
2. With a clear example, describe the basic model of communication in marketing. (5)
3. In consumer communication, what is meant by the following concepts: (20)
    a) Competitive advantage
    b) Unique selling proposition
    c) Selling concept
    d) Marketing concept
    e) Positioning
    f) Target Marketing
    g) Segmentation
    h) Psychographics
    i) Decision making unit
    j) Brand Loyalty
4. Discuss the various appeals used in advertising (10)

SECTION B: ANSWER ONLY TWO QUESTIONS. QUESTION 5 IS COMPULSORY (20 MARKS EACH)

5. Fracarita Southern Africa is a non-profit organisation advocating for the rights of the poor minority and underprivileged in society. One of its goals is to take care of the plight of people living with mental health disorders.

    According to Fracarita, millions of people around the world suffer from various mental health disorders once in a while in their lifetime. Mental health includes the emotional, psychological, and social well-being. It affects how one thinks, feels, and acts. It also helps determine how people handle stress, relate to others, and make

choices. Mental health is important at every stage of life, from childhood and adolescence through to adulthood. Although there have been a lot of discrimination against people living with mental illness, the latest World Health Organisation (WHO) report indicates that more than 350 million people around the global suffer from mental illness. In Zambian communities, people with mental health disorders are largely discriminated against and shunned. The severity of this discrimination is seen when such people are sometimes accused of practicing witchcraft or being possessed by evils spirits. As a results they are mostly ostracised from their communities and left to fend for themselves without family support.

Assume that you are a communications manager for Fracarita Southern African. The organisation wants to encourage communities and families to accept people with mental health disorder and seek medical and psychosocial solutions their problems. Develop a communication campaign plan to that would help the organisation remove misconceptions and raise awareness on mental health in the country.

6. Assume that you are the marketing communications manager for the University of Zambia. The University is conducting a recruitment for positions of Customer Care Manager and Business Development Manager. Discuss how you would use different promotional mix elements in the University's recruitment efforts. (20 marks)

7. Explain the hierarchy of effects model. In so doing, outline the implications it has for the marketer.

8. Discuss the challenges marketers face as they develop advertisements and other forms of marketing communications for rural target markets of prospective customers above 60 years old. Do you think marketers should advertise to rural markets in English? Explain your answer. (10 marks)

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
MASTER OF SCIENCE IN CORPORATE COMMUNICATION

DECEMBER, 2018 EXAM

MCC 6052: CONSUMER MEDIA COMMUNICATION

DATE: 11th DECEMBER, 2018
TIME: 09:00 – 12:00 HOURS
DURATION: THREE (3) HOURS

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SECTION A: ANSWER ALL QUESTIONS (40 MARKS)

1. Briefly discuss the definition of consumer media communication. (5)
2. Briefly discuss the influence of social media on the consumer decision making process (10)
3. List and explain the three main consumer gratifications or motives for using the Internet. (10)
4. Explain the hierarchy of effects model. In so doing, discuss its implications for consumer media communications. (10)
5. Distinguish between to following terms: (5)
    a) Consumer and Customer
    b) b) Product and Customer value

SECTION B: ANSWER ONLY TWO QUESTIONS. QUESTION 6 IS COMPULSORY (30 MARKS EACH)

6. Imagine that you are a lecturer at the newly established Zambia Catholic University. The University which is undertaking curriculum development for a Master of Science in Corporate Communication, has tasked you with the responsibility of creating a course outline in Consumer Media Communications. Please present a course structure containing concepts and issues you would like this course to address.

7. In 2013, sections of the media in Zambia published stories alleging that ZAMBEEF was using organic chemical compounds to preserve some of its products. Assume that you are a corporate communication ZAMBEEF, use consumer communication approaches to identify and outline specific strategies and tactics you would adopt in managing the perceptions of the consumers towards ZAMBEEF products.

8. With clear segmentation and positioning examples compare and contrast between McClelland's Trio of Needs Theory and Maslow's Hierarchy of Needs Theory

END OF EXAM

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
MASTER OF SCIENCE IN CORPORATE COMMUNICATION

SEPTEMBER, 2021 EXAM

MCC 6052: CONSUMER MEDIA COMMUNICATION

DATE: 6th September 2021
TIME: 09:00 – 12:00 Hours
DURATION: Three (3) hours

ANSWER ONLY THREE QUESTIONS INCLUDING QUESTION ONE.

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1. Develop a consumer communication campaign that introduces the Graduate School of Business and its programmes worldwide. (40 Marks)

2. With specific reference to the different types of media, discuss the role of the media in the consumer decision making process. (30 Marks)

3. Taking an organisation with which you are familiar, identify the extent to which the customer is central to the business. To what extent, if any, does an organisation take its cues from consumers and how appropriate is consumer communication. (30 Marks)

4. While emphasizing the appeals for each model, discuss McClelland's Trio of Needs Theory and Maslow's Hierarchy of Needs Theory. (30 Marks)

5. Discuss the various branding factors which influence the consumers' purchase decision making process. (30 Marks)

END OF EXAM

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
MASTER OF SCIENCE IN CORPORATE COMMUNICATION

SEPTEMBER, 2021 EXAM

MCC 6052: CONSUMER MEDIA COMMUNICATION

DATE: 13th September 2021
TIME: 14:00 – 17:00 Hours
DURATION: Three (3) hours

ANSWER ONLY THREE QUESTIONS INCLUDING QUESTION ONE.

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1. Describe the decision making unit for the purchase of a boy's toy in a household. With specific reference to the different types of media, discuss the role of the media in the consumer decision making process. (40 Marks)

2. Develop a consumer communication campaign that introduces the Graduate School of Business and its programmes worldwide. (30 Marks)

3. Discuss the various branding factors which influence the consumers' purchase decision making process. (30 Marks)

4. While emphasizing the appeals for each model, discuss McClelland's Trio of Needs Theory and Maslow's Hierarchy of Needs Theory. (30 Marks)

END OF EXAM

THE UNIVERSITY OF ZAMBIA
Graduate School of Business

FINAL EXAMINATION

MCC 6061: INFORMATION TECHNOLOGY MANAGEMENT

Date: 2nd July 2020
Time: 14:00hrs – 17:00hrs
Duration: 3 Hours
Venue: Sports Hall

Instructions

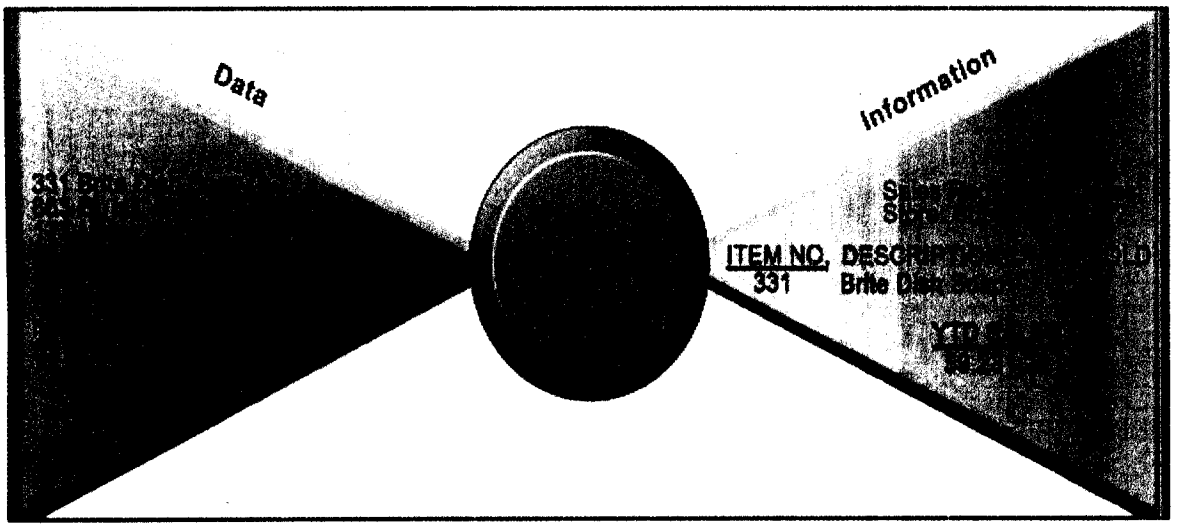
1. There are **Six (6) Questions** in this paper
2. Each question carries **20 Marks,**
3. The paper has **Two (2) Sections**, each section with **three** questions
4. *You are required to answer a total of **Five (5) Questions***
5. *Answer **ALL the questions in Section A*** and Choose ***Any TWO** (2) Questions from **Section B***

SECTION A

This Section has THREE Questions. Answer **ALL** the questions

QUESTION ONE

a) The diagram below shows the relationship between data and information. Using the Figure below, describe the following terminologies [3 Marks]
   i. Data
   ii. Information
   iii. Information Systems



b) Give any three ways how information systems are transforming businesses today [3 Marks]

c) An organization consists of many people with different interests, specialties, and levels. Usually organizations have different information systems for different interests, specialties, and Decision Making Levels. These include [14 Marks];
   - Executive level (top)
     - Long-term decisions
     - Unstructured decisions
   - Managerial level (middle)
     - Decisions covering weeks and months
     - Semi-structured decisions
   - Operational level (bottom)
     - Day-to-day decisions
     - Structured decisions

   i. Draw a diagram (pyramid) showing the three major levels of management.
   ii. Discuss the General Types of Information Systems at each level

QUESTION TWO

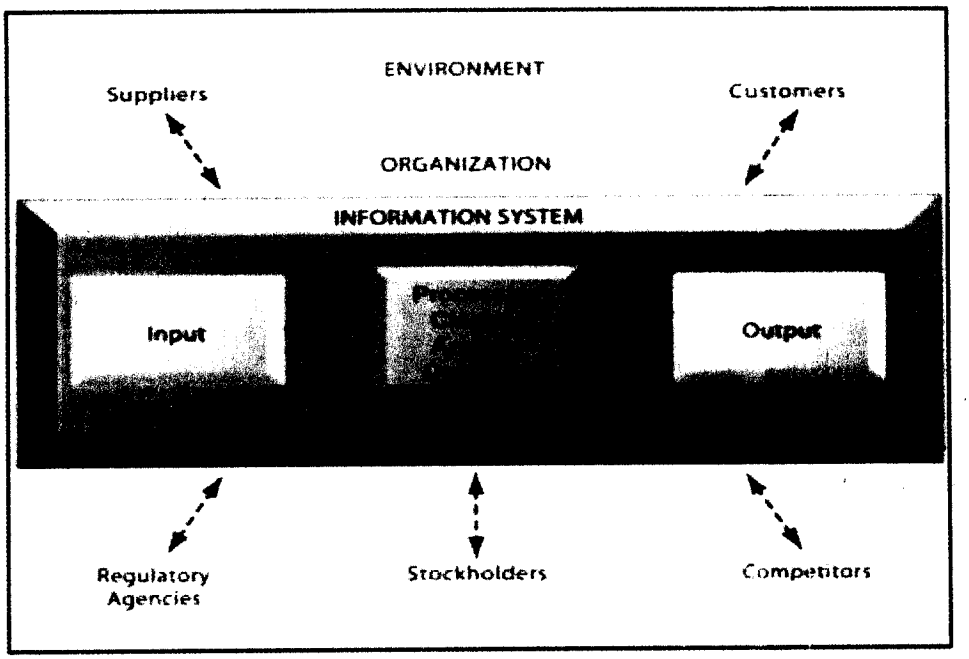
a) Information Systems that Span Organizational Boundaries come in a number of varieties depending of the problem being solved in the organisation. Discuss the following with examples in each case [6 Marks]

i. Collaboration Technologies
ii. Functional Area Information Systems
iii. Global Information Systems

b) Discuss the following emerging issues in **Information Technology Management** [4 Marks]

i. Regulatory Trends
ii. Interoperability
iii. Architecture
iv. Sourcing

c) An information system contains information about an organization and its surrounding environment. Three basic activities input, processing and output produce the information organizations need. Using the organisation you work for as an example, discuss each of the components and processes shown in the diagram below in relation to the environment [10 Marks].



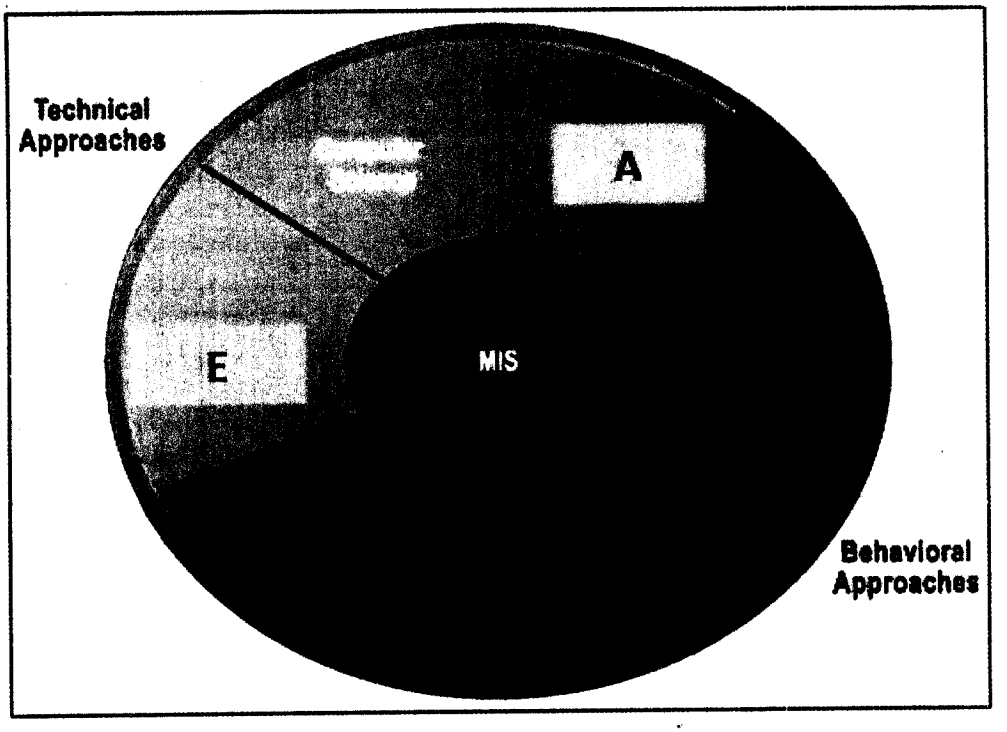
QUESTION THREE

a) Today Business firms are investing heavily in information systems in order to achieve six strategic business objectives as list below. Discuss each of the six strategic business objectives with examples [12 Marks]

i. Operational excellence
ii. New products, services, and business models
iii. Customer and supplier intimacy
iv. Improved decision making
v. Competitive advantage
vi. Survival

b) The study of information systems deals with issues and insights contributed from technical and behavioral disciplines as shown in the Figure below [8 Marks].

i. Apart from Computer Science, identify and name the five field labelled A, B, C, D and E
ii. Discuss the technical and behavioral approach of the six field shown in the diagram below
iii. Which of the two major types of approaches, behavioral and technical, do you find to be most appropriate or accurate? Why do you feel this way?



SECTION B

This Section has **Three** (3) Questions. Choose any **Two** (2) questions

QUESTION ONE

a) Many who teach or learn ways of improving communication usually do not spend enough time working out what is meant by communication. The understanding of what communication 'is' influences how we act, and influences how we analyse situations. It is therefore important to work out what communication involves. Discuss each of the following in relation to the definition of communication and how we can understand the way communication works based on two contrasting perspectives (1) analysing the process and (2) interpreting the meanings [20 Marks].

i. Show how our personal definitions of communication influence how we act
ii. Review popular models of communication (mathematical theory of communication) and explain why we need a more complex approach
iii. Discuss the communication triangle
iv. Outline a practical example of communication in your workplace and show how we can use the communication triangle to analyse it.

QUESTION TWO

a) One cannot transmit the mental images, ideas and feelings directly to another person without the use of codes. In communication theory, there is need to translate or encode our thoughts in such a way that others can receive and interpret what we think. This course focused on both verbal and non-verbal codes. If we can anticipate how other people will interpret what we say and do, then we can make our communication more effective [20 Marks].

i. Discuss the range and variety of human communication codes
ii. Explain why we need to think of human language as a collection of multiple and overlapping codes
iii. Examine the nature and scope of non-verbal communication, and its relationship with language
iv. Identify practical implications for the appropriate use of language and non-verbal codes in business communication.

QUESTION THREE

a) In the last 50 years, computers have been transformed into information technology (IT) and then into information and communications technology (ICT). This is a fundamental shift in terms of what the technology can do, although we must not ignore social and political influences on the way the technology is applied. Organizations which fully embrace ICT do have significant opportunities which have not been available before [20 Marks].

i. Identify the fundamental features of computing technology and show how these have expanded into new roles and functions

ii. Review how **computers** have been transformed into 'information technology' (IT) and then into 'information and communications technology' (ICT)

iii. Show how modern organizations are using ICT to develop new ways of working

iv. Identify critical impacts of these changes on the way we work and communicate

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END OF EXAMINATION PAPER

GRADUATE SCHOOL OF BUSINESS

EXAMINATION PAPER: NEW VENTURE CREATION (MIE 5012)

Date: 30 June 2020

Time: 3 hours

TOTAL MARK: 60

This paper is divided in TWO sections as follows:

SECTION A: This section has a total of **40 marks**. You are to ANSWER ALL THE QUESTIONS IN THIS SECTION.

SECTION B: This section has a total of **20 marks**. You are to ANSWER ONLY TWO QUESTIONS IN THIS SECTION.

SECTION A: ANSWER ALL THE QUESTIONS IN THIS SECTION

QUESTION A1

Which of the following statements are true or false (please justify your response):

a) The entrepreneurial process for new venture creation starts with creativity and the task of generating new ideas. **2 Points**

b) A copyright is distinguishing symbol, mark, logo, name, word, sentence or a combination of these items that companies use to distinguish their product from others in the market. **2 Points**

c) The creativity process starts with innovation and the task of generating new ideas. **2 Points**

QUESTION A2

In the context of new venture creation, entrepreneurship is considered as a dynamic process of vision, change, and creation which requires an application of energy and passion towards the creation and implementation of new ideas and creative solutions.

a) Explain what is involved in the entrepreneurial opportunity identification process. **2 Points**

b) Explain the characteristics of an entrepreneurial venture. **2 Points**

c) Using Amabile's (1997) model of creativity within an organization, explain the factors that could enhance individual creativity in business. **3 Points**

QUESTION A3

a) What are the possible FOUR sources of new venture financing? **2 Points**

b) Indicate SIX likely sources of new business ideas. **3 Points**

c) What do entrepreneurs lose when their business ventures fail? **4 Points.**

QUESTION A4

NEW VENTURE CREATION IN THE FIELD OF ENTREPRENEURSHIP

Research in new venture creation is sometimes pictured as one out of many sequences a new venture goes through during its life cycle. Examples of such sequences are 'initiation' (Kroeger 1974), 'conception' and 'gestation' (Reynolds 1997) or 'idea', 'opportunity' and 'project' (Fayolle 2003). Common to most sequential models is to view the entrepreneurial process as a linear and forward-moving process. However, Fayolle (2003) divides the entrepreneurial process into various sequences, allowing relapse from later phases to earlier ones to occur. In addition, the phases do not necessarily develop in the outlined order. Some entrepreneurs, for example, formally establish an organization before they have evaluated to what extent the idea represents a real opportunity. Finally, the process can stop at any given level. For example, a new organization may never come into existence. Fayolle's model shows that new venture creation does not only consist of one single step - namely from a situation 'without a new venture' to a situation 'with a new venture'. On the contrary, it is possible to talk about a number of steps on the way toward a new and independent venture. Because of the fluid crossing between the situation 'without a new venture' and the situation 'with a new venture', it is in practice hard to decide when a new venture is created. A central problem is, however, that the above-mentioned sequence models do not catch what triggers or activates the new venture creation process.

As far back as 1985 Gartner had already tried to provide valuable insight into different variables that constitute the process of new venture creation by recognizing the need to

explain new venture creation as a multi-dimensional process that takes place as a result of an interaction between four components: individual(s), the environment, the organization and the process. The dominance of each variable during the new venture creation process was however not explained, as the literature of entrepreneurship at that point in time suggested that differences among entrepreneurs and among their ventures were as great as the variation between entrepreneurs and non-entrepreneurs and between new firms and established firms (Gartner 1985, p. 696). Since then only a few attempts to exactly identify what triggers new venture creation or what sub-processes lead up to new venture creation have been discussed and suggested (Davidsson and Honig 2003).

Source: Klyver, K., Evald, M.R. and Hindle, K., 2011. Social networks and new venture creation: the dark side of networks. *Handbook of research on new venture creation*, pp.145-159.

a) What is new venture creation? **2 Points**

b) Explain why a new organization may never come into existence. **3 Points**

c) The entrepreneurial process involves various sequences, allowing relapse from later phases to earlier ones to occur, while the phases do not necessarily develop in the outlined order. Explain the key characteristics of the entrepreneurial process for venture creation. **5 Points**

d) New venture creation is a multi-dimensional process that takes place as a result of an interaction between four components: individual(s), the environment, the organization and the process. Discuss each of these FOUR components. **8 Points**

SECTION B: ANSWER TWO QUESTIONS ONLY IN THIS SECTION

QUESTION B1

A good business plan must be developed in order to exploit the defined opportunity. Discuss content of the following components of a business plan. **10 Points**

i. Products and/or services plan.
ii. Marketing plan.
iii. Operations plan.
iv. Management plan.
v. Financial plan.

QUESTION B2

Discuss the types and classes of possible first-year business venture problems. **10 Points**

QUESTION B3

There are several important factors necessary for new venture creation including economic circumstances, social networks, entrepreneurial teams, marketing, finance, and also public agency assistance. However, none of these will single-handedly create a new venture.

a) Based on the above statement discuss what exactly is needed beyond the listed factors for the successful creation of a new venture. **4 Points**

b) Describe the main pitfalls entrepreneurs are likely to face in selecting new ventures and explain how to avoid them. **6 Points**

QUESTION B4

At the heart of the entrepreneurial process is the opportunity. Successful entrepreneurs and investors know that a good idea is not necessarily a good opportunity.

a) Indicate FOUR likely sources of new business ideas. **2 Points**

b) What is the difference between a business idea and a business opportunity? **2 Points**

c) In the Zambian context, explain how deregulation of the transport sector spawned opportunities. **2 Points**

d) The identification of a good business opportunity may not necessarily lead to success of a new venture as there are several factors that affect venture performance. Discuss the elements that affect new-venture performance according to Cooper (1993). **4 Points**

END OF QUESTIONS

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MBA Entrepreneurship Examination

December 2020

MIE 5022: PRODUCT DESIGN & DEVELOPMENT

Question Paper

Instructions

Time Allowed: Three **(3) Hours**

Number of questions in the Examination Paper: **Eight (8)**

Number of questions to be answered: any **Five (5)**

All questions carry equal marks.

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Question 1

Concurrent Engineering (CE) is said to replace the more traditional sequential design flow, or 'Waterfall Model'. CE is therefore designed to be "Iterative" or "an integrated development method".

(a) Explain the terms "Waterfall" and "Iterative" concerning CE, stating the two methods' advantages and disadvantages. You may use suitable diagrams to illustrate your answer. *[12 Marks]*

(b) "The Zambia Environmental Management Authority (ZEMA) announced that not all plastic carrier bags have been banned as the ban only affects bags below 30 microns in thickness." Discuss whether or not this statement is consistent with Concurrent Engineering. *[08 Marks]*

Question 2

"Harnessing the ability to cost-effectively and efficiently develop market-driven products and services is crucial for success in not only business today but also in [government where the stakes are high for implementation] ..." Commented Dr. Thomas Cellucci when he presented the then Secretary Larry Small of the Smithsonian, with the world's first mass-produced nano-tech product shown in figure **Q2** in 2006. The nano-enhanced bicycle gives a significant competitive advantage to the cyclist especially when cycling downhill. The nano-enhanced carbon fibre bicycle wheels are a carbon nanotube and graphene engineered composite material that use proprietary technology to create chemical bonds on the carbon nanotubes which result in an increase in toughness, durability, strength and stiffness compared with the traditional bicycle wheels. The cyclist does not have to stop and change the wheels as often as he would in the traditional bicycle.

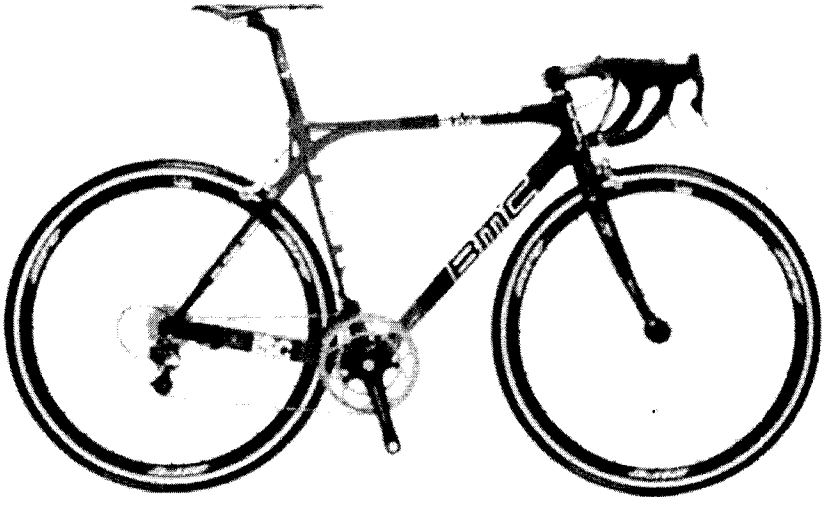


Figure Q2 – The first complete, nano-enhanced bicycle given to President George W. Bush by Dr. Thomas. Cellucci

The generic Product Development (PD) process is mostly *market-pull*. The other processes, besides, are *technology-push, platform, process-intensive, customized, high-risk, quick-build, and complex systems.*

With respect to the nano-enhanced bicycle, discuss at least four (4) of the eight (8) PD processes, which would be most applicable in the development, highlighting their characteristics and distinct features. *[20 Marks]*

Question 3

The development of a product is normally done through the eight processes of new product development listed below:

i. Idea Generation is often called the "NPD" of the NPD process,
ii. Idea Screening,
iii. Concept Development and Testing,
iv. Business Analysis,
v. Beta Testing and Market Testing,
vi. Technical Implementation,
vii. Commercialisation (often considered post-NPD) and
viii. New Product Pricing.

As a bottling plant owner, you have developed a new drink from a named local fruit. Describe in detail what was done in the phases of development shown below:

a) Idea Generation *[04 Marks]*
b) Concept Development and Testing *[04 Marks]*
c) Beta Testing and Market Testing *[04 Marks]*
d) Commercialisation (often considered post-NPD) *[04 Marks]*
e) New Product Pricing *[04 Marks]*

Question 4

a) List four (4) characteristics that affect the adoption of a new product. *[04 Marks]*

b) Table **Q4** gives the four stages of the life cycle of a product and the sales strategies adopted. Copy the table into your answer book and in each box indicate how the strategies are adopted at each stage of the cycle. *[16 Marks]*

Table Q4 - Product Life Cycle

		Product Life Cycle Stages			
		Introduction	Growth	Maturity	Decline
Sales strategies	Product				
	Distribution				
	Promotion				
	Pricing				
		Time →			

Question 5

(a) Ewan Spence, a Forbes analyst, commented on the latest iPhone during its launch, "Apple may never release a foldable iPhone that challenges the Samsung Galaxy Fold, but the design may be a profitable nest egg for Tim Cook and his team... This is totally a new opportunity horizon." Define and categorise "Opportunity" vis-a-vis market risk(s)? *[08 Marks]*

(b) Explain with an example(s) the *Real-Win-Worth-it* (RWW) method. *[06 Marks]*

(c) "The acronym VRIN can be used to define targets by first articulating an inventory of resources and then using the inventory as a lens for opportunity generation." Explain the acronym VRIN. *[06 Marks]*

Question 6

(a) With a specific example, discuss the process of creating a poster advertisement. *[8 Marks]*

(b) Figure **Q6** shows a 'wrongly' filled chart of Product Development Milestones made by a trainee analyst. You are required to:

(i) Identify and list the wrong entries and *[5 Marks]*

(ii) Redraw (by rearranging the entries) the corrected chart. *[7 Marks]*

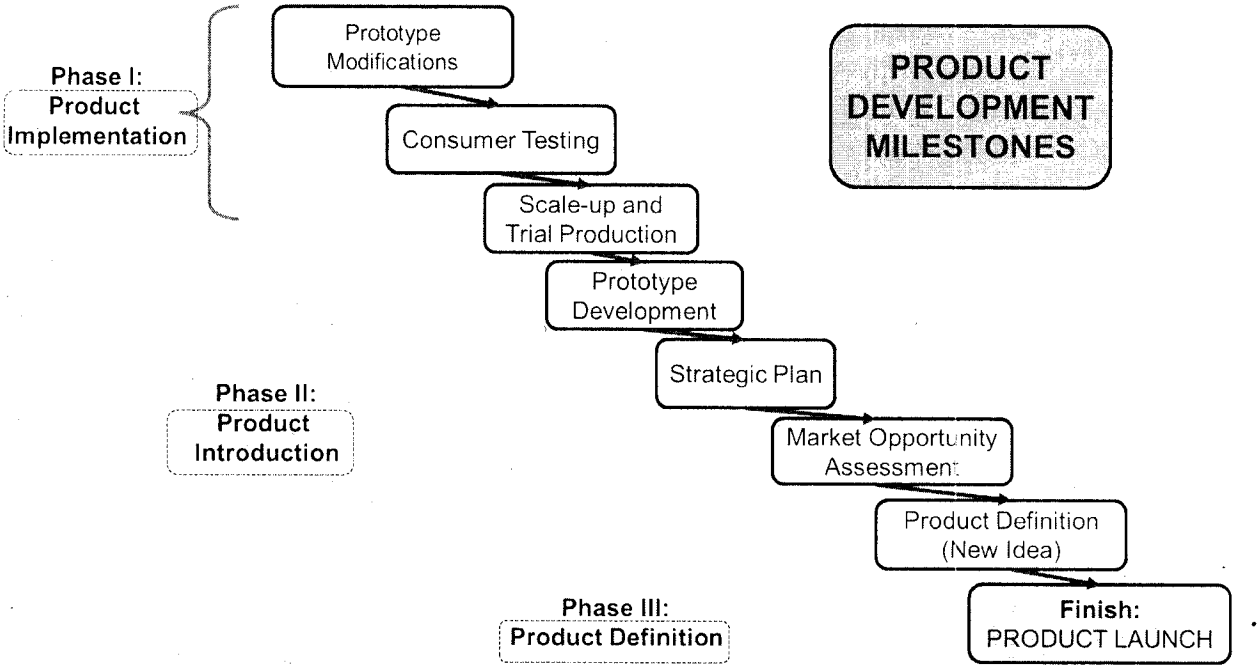


Figure Q6

Question 7

(a) Compare and contrast functional and project organisations. *[10 Marks]*

(b) What are the advantages and disadvantages of each? *[5 Marks]*

(c) How does the Heavyweight project organisation differ from the Lightweight project organisation? *[05 Marks]*

Question 8

(a) With specific examples from the market in Zambia, discuss the advantages and disadvantages of advertising. *[05 Marks]*

(b) Discuss the following statement: "Market response has a heavy bearing on whether or not a new product will be successful". *[07 Marks]*

(c) With a typical example, discuss what can be done to ensure that a product that was rejected by the market can be re-accepted. *[08 Marks]*

End of MIE 5022 Examination
Prepared by: Dr. Terence Malama

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

FINAL EXAMINATIONS (DEC. 2020)

MIE 6011 ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT

Duration: 3 hours; Marks: 100%

You are advised to read the following INSTRUCTIONS/ DIRECTIONS before answering any examination question:

1. This paper comprises **Two Sections**; Section A and Section B.
2. **Section A** has **two compulsory** questions worth 20 marks each. **Question 1** of this section is based on a **Case study** provided while **question 2** is based on your **course work** knowledge.
3. **Section B** has five questions worth 20 marks each; choose and **answer any three (3)** questions from this section.
4. **Section A's questions have four sub-questions of 5 marks each while Section B's questions have two sub-questions of 10 marks each.**
5. **You will answer five questions in total in the manner prescribed above.**
6. Read each of the questions carefully before you begin answering.
7. Number the answers to the questions clearly before answering the question(s)
8. Write as clearly as possible as illegible handwriting cannot be marked.
9. Begin each question on a new page.
10. Use the provided University answer booklet as an answer sheet and fill in all details required.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO!

Section A - Compulsory (40 Marks)

Question One

Read the passage below then answer the question which follow it.

SMEs Struggling due to poor corporate governance

Finance Minister, Margaret Mwanakatwe, says Small and Medium Enterprises (SMEs) are struggling to grow due to lack of access to affordable long-term credit, inadequate and poor record-keeping, and corporate governance.

Speaking during the official opening of the Zambia Industrial Commercial Bank (ZCIB) in Lusaka, Tuesday, Mwanakatwe urged SMEs and local firms to take advantage of the Zambia credit guarantee scheme, which offers guarantees to commercial banks, to access the finances and stimulate growth.

"It gives me great pleasure to be here today to launch a bank that holds a lot of promise for Zambian entrepreneurs and the local business community, the Zambia Industrial Commercial Bank Limited. This is because, as government, we are aware of the challenges that local entrepreneurs face in accessing financing that is structured for the primary purpose of stimulating growth of our SMEs and local businesses. This is something that has received international recognition. As the World Bank's 2013 enterprise survey indicates, the number one barrier to growth for firms in Zambia is access to affordable long-term credit, followed by practices, such as inadequate and poor record-keeping, and poor corporate governance of the informal sector," Mwanakatwe said.

"Access to finance for SMEs is limited due to the presence of constraints, including firm informality, high collateral requirements, and poor bank lending tools. These challenges of lack of affordable and long-term access to financing, among others, have been cited by our SMEs as the major reason for their low participation in the major economic activities of our country. As government, we want to see enhanced growth of local businesses, and hence local productivity, because it is only this that will lead to sustainable wealth creation and hence poverty alleviation among our people. It is for this reason that government enacted the movable property security interest act to make the business environment attractive for lenders to accept movable property as collateral. Furthermore, government recently operationalised the Zambia credit guarantee scheme that offers guarantees to commercial banks for credit extended to the local SME-sector."

She also urged the new bank to help commercialise and industrialise SMEs and local businesses to help boost the economy.

"And now we are here today to launch a bank that will be primarily focused on the commercialisation and industrialisation of Zambian SMEs and local businesses. The launch of Zambia Industrial Commercial Bank Limited is this government's commitment to partner with the private sector in finding solutions to the challenges being faced by Zambians, particularly those in the SME sector. It is our expectation, as government, that

the launch of Zambia Industrial Commercial Bank Limited heralds a new chapter in the banking sector in Zambia, and that our local businesses will seize this great opportunity to grow their businesses and increase their contribution to the GDP of our country," said Mwanakatwe.

"I, therefore, wish to commend the central bank, shareholders and the board of Zambia Industrial Commercial Bank Limited for successfully restructuring the Intermarket Banking Corporation in liquidation, against all odds and skepticism. The Bank of Zambia, shareholders and depositors were united in their resolve to bring new life to Intermarket. They were resolved to safeguard the interests of the former depositors of Intermarket Banking Corporation Limited. We now look to the future with great expectation that Zambian business houses and entrepreneurs will now have a bank they can call their home for banking and financial services."

ZICB is a product of the restructuring of the former Intermarket Banking Corporation Zambia Limited (in liquidation), which the Bank of Zambia took possession of on November 29 2016 after the bank fell into insolvency and was unable to meet its obligations as they fell due.

Report adapted from News Diggers Newspaper; written by By Abraham Kalito, 25th October 2018.

(a) Elaborate on the benefits of entrepreneurship to a nation like Zambia.
(b) Briefly discuss the corporate governance practices which impede business growth.
(c) How can industrialization and value addition stimulate SMEs growth and sustainability?
(d) Briefly list down and analyse governmental-induced bottlenecks to SMEs growth in Zambia.

Question Two

(a) Analyse the merits and demerits of a corporation as a form of business.

(b) An entrepreneur identifies an opportunity and calculates risk. Elaborate.

(c) Provide a detailed analysis of the differences between necessity and opportunity driven entrepreneurs.

(d) List down and analyse the major behavioural dispositions of entrepreneurs.

Section B (60 Marks)

Choose and answer **any Three** Questions.

Question Three

(a) Creativity and innovation are all concepts related to entrepreneurship. Draw clear cut distinctions between the two terms with practical exemplifications.

(b) Discuss the major assumptions of the Schumpeterian theory and show their relevance to the application of entrepreneurship ideals.

Question Four

(a) Analyse the major reasons why entrepreneurs set up ventures.

(b) There is anecdotal evidence to the effect that foreigners running ventures in Zambia are more successful than indigenous SMEs. Elaborate and exemplify why.

Question Five

(a) Describe the concept corporate entrepreneurship and show how its principal elements could be utilizable in enhancing product/service delivery in Zambian parastatals like ZESCO.

(b) With the aid of practical examples, discuss any two business models and show how you can grow your business portfolio by applying such.

Question Six

(a) Analyse any four (4) business growth strategies.

(b) How can Michael Porter's defense force model aid an entrepreneur to position their venture profitably?

Question Seven

(a) Discuss the key areas of focus in the business growth stages in trying to sustain its growth.

(b) What is bootstrapping? How can this approach be utilized in raising start-up capital by entrepreneurs?

----------*END*----------

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

FINAL EXAMINATIONS (September, 2021)

MIE6011 ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT

Duration: 3 hours; Marks: 100%

You are advised to read the following INSTRUCTIONS/ DIRECTIONS before answering any examination question:

1. This paper comprises **Two Sections**; Section **A** and Section **B**.
2. **Section A** has **two compulsory** questions worth 20 marks each. **Question 1** of this section is based on a **Case study** provided while **question 2** is based on your **course work** knowledge.
3. **Section B** has five questions worth 20 marks each; choose and **answer any three (3)** questions from this section.
4. **Section A's questions have four sub-questions of 5 marks each while Section B's questions have two sub-questions of 10 marks each.**
5. **You will answer five questions in total in the manner prescribed above.**
6. Read each of the questions carefully before you begin answering.
7. Number the answers to the questions clearly before answering the question(s).
8. Write as clearly as possible as illegible handwriting cannot be marked.
9. Begin each question on a new page.
10. Use the provided University answer booklet as an answer sheet and fill in all details required.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO!

Section A - Compulsory (40 Marks)

Question One

Read the passage below then answer the question which follow it.

While in college, Jenn Hyman came up with the idea for a designer clothing rental business, Rent the Runway, that would disrupt the fashion industry after she witnessed one of her sister's "closet full of clothes, but nothing to wear" moments during Thanksgiving break. When she returned to school, she shared her idea with a suitemate, Jenny Fleiss, and the two collegiate entrepreneurs launched the company that rents high-end, designer clothing, accessories, and jewelry to customers at a fraction of the regular retail price. To test their business model (think "Netflix meets high fashion"), they used their savings to purchase 100 dresses and set up a pop-up shop on campus that proved to be a hit. The shop's success convinced the entrepreneurial pair that their business idea was valid and led them to conduct focus groups with more than 1,000 women, which gave them valuable insight into refining their business model and pricing strategy. Since starting Rent the Runway in 2009, Hyman and Fleiss have raised nearly $55 million in four rounds of financing from a "who's who" list of venture capital firms and assembled an inventory of tens of thousands of dresses from more than 170 designers, such as Nicole Miller, Vera Wang, Versace, and Dolce and Gabbana. Customers go online, select the dress they want, enter their size (a backup size comes free), and specify the rental date; returns are as easy as dropping the dress into a prepaid return envelope. "We deliver Cinderella moments," says Hyman. Rent the Runway, which became cash-flow positive in less than one year, now has more than 3 million members, and financial experts estimate its value at $240 million.

(a) Analyse the role of a business model in guaranteeing venture success.
(b) Analyse factors which qualify an "opportunity."
(c) From the experience of the couple collegiate entrepreneurs, justify the fact that finance is not a pre-requisite in launching successful ventures.
(d) Were Hyman and Fleiss necessity or opportunity entrepreneurs? Justify your answer(s).

Question Two

(a) Analyse the merits and demerits of a corporation as a form of business.

(b) An entrepreneur identifies an opportunity and calculates risk. Elaborate.

(c) Provide a detailed analysis of the differences between necessity and opportunity driven entrepreneurs.

(d) List down and analyse the major behavioural dispositions of entrepreneurs.

Section B (60 Marks)

Choose and answer **any Three** Questions.

Question Three

(a) Creativity and innovation are all concepts related to entrepreneurship. Draw clear cut distinctions between the two terms with practical exemplifications.

(b) Discuss the major assumptions of the Schumpeterian theory and show their relevance to the application of entrepreneurship ideals.

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(b) What is bootstrapping? How can this approach be utilized in raising start-up capital by entrepreneurs?

----------**END**----------

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GRADUATE SCHOOL OF BUSINESS

EXAMINATION PAPER: STRATEGIC MANAGEMENT OF TECHNOLOGY AND INNOVATION (MIE6021)

Date: 1st July 2020

Time: 3 hours

TOTAL MARK: 60

This paper is divided in TWO sections as follows:

SECTION A: This section has a total of **40 marks**. You are to ANSWER ALL THE QUESTIONS IN THIS SECTION.

SECTION B: This section has a total of **20 marks**. You are to ANSWER ONLY TWO QUESTIONS IN THIS SECTION.

SECTION A: ANSWER ALL THE QUESTIONS IN THIS SECTION

QUESTION A1

Which of the following statements are true or false (please justify your response):

a) Radical innovation involves improvement in components while the architecture remains unchanged. **2 Points**

b) Modular innovation establishes a new dominant design, and hence a new set of core design concepts embodied in components that are linked together in a new architecture. **2 Points**

c) Incremental innovation is the kind of innovation that changes a core design concept without changing the product's architecture. **2 Points**

d) Intellectual Property creates for the innovator a system by which he/she can benefit from his/her ingenuity. **2 Points**

QUESTION A2

In today's knowledge driven world, new technologies and new competitors are entering the market at an unprecedented rate, and this phenomenon will just keep of increasing, thereby bringing about accelerating industrial uncertainty. There are two primary types of uncertainty, namely, demand uncertainty and technological uncertainty. How much uncertainty an industry faces will depend on the interaction of these two types of uncertainty.

a) Explain what demand uncertainty and technological uncertainty mean. **4 Points**

b) Explain the entry factors to consider in the face of technology and demand uncertainties. **6 Points**

c) Explain why first movers often fail? **2 Points**

QUESTION A3

In recent years, the field of technology strategy has attracted considerable attention from researchers and technology-driven organizations. It is in fact generally agreed that technology strategy is of critical importance to organizations and their ability to compete effectively. However, some studies have revealed that there is failure on the part of top management to appreciate the significance of technology, creating an impression that perhaps technology strategy is neither well understood nor well practiced.

Discuss the determinants of technology strategy and illustrate your response with a diagram. Be sure to elaborate. **8 Points**

QUESTION A4

Explain what technology means to:

i. A scientist. **2 Points**

ii. An Engineer. **2 Points**

iii. A Marketing Manager. **2 Points**

QUESTION A5

There are a number of strategic issues to consider in the process of strategic management of technology and innovation, while management plays a critical role in the whole process.

a) What is strategic management of technology and innovation and why is it important? **2 Points**

b) Explain the role of management in strategic management of technology and innovation. Be sure to itemize and elaborate the different aspects of the role of management. **4 Points**

SECTION B: ANSWER TWO QUESTIONS ONLY IN THIS SECTION

QUESTION B1

Explain Rothwell's FIVE models of the innovation process and illustrate your response with diagrams. **10 Points**

QUESTION B2

Discuss the two concepts of "sustaining innovation" and "disruptive innovation" and explain the differences between them. **10 Points**

QUESTION B3

a) Discuss the prosperity and recession phases of the Kondratiev long wave cycle and explain the types of technology or innovation that are likely to be associated with each one of these phases. **5 Points**

b) Explain the theory of punctuated equilibrium and indicate how it helps to understand the process of technological innovation? **5 Points**

QUESTION B4

a) List FOUR functions of prototypes. **2 Points**

b) Explain the following theories of innovation and illustrate your response with diagrams:

i. Technology S-curve. **4 Points**

ii. Absorptive capacity. **4 Points**

END OF QUESTIONS

GRADUATE SCHOOL OF BUSINESS

EXAMINATION PAPER: STRATEGIC MANAGEMENT OF TECHNOLOGY AND INNOVATION MIE 6021

Date: 17 December 2020

Time: 3 hours

TOTAL MARK: 60

This paper is divided in TWO sections as follows:

SECTION A: This section has a total of **40 marks**. You are to ANSWER ALL THE QUESTIONS IN THIS SECTION.

SECTION B: This section has a total of **20 marks**. You are to ANSWER ONLY TWO QUESTIONS IN THIS SECTION.

Refer to questions' weighting for overall grade contributions.

DO NOT TURN OVER UNTIL INSTRUCTED

SECTION A: ANSWER ALL THE QUESTIONS IN THIS SECTION

QUESTION A1

Which of the following statements are true or false (please justify your response):

a) Radical innovation is the kind of innovation that changes a core design concept without changing the product's architecture. **2 Points**

b) Modular innovation establishes a new dominant design, and hence a new set of core design concepts embodied in components that are linked together in a new architecture. **2 Points**

c) Incremental innovation involves improvement in components while the architecture remains unchanged. **2 Points**

QUESTION A2

In today's knowledge driven world, new technologies and new competitors are entering the market at an unprecedented rate, and this phenomenon will just keep of increasing, thereby bringing about accelerating industrial uncertainty. There are two primary types of uncertainty, namely, demand uncertainty and technological uncertainty. How much uncertainty an industry faces will depend on the interaction of these two types of uncertainty.

a) Explain what demand uncertainty and technological uncertainty mean. **4 Points**

b) Explain the entry factors to consider in the face of technology and demand uncertainties. **4 Points**

c) Explain why first movers often fail? **2 Points**

QUESTION A3

a) Discuss the depression phase of the Kondratiev long wave cycle and explain the types of technology or innovation that are likely to be associated with each one of these phases. **4 Points**

b) Explain the theory of punctuated equilibrium and indicate how it helps to understand the process of technological innovation? **4 Points**

QUESTION A4

In recent years, the field of technology strategy has attracted considerable attention from researchers and technology-driven organizations. It is in fact generally agreed that technology strategy is of critical importance to organizations and their ability to compete effectively. However, some studies have revealed that there is failure on the part of top management to appreciate the significance of technology, creating an impression that perhaps technology strategy is neither well understood nor well practiced.

Discuss the determinants of technology strategy and illustrate your response with a diagram. Be sure to elaborate. **4 Points**

QUESTION A5

It's finally happened: The Mercedes X-Class bakkie production to come to an end

2020-01-31 13:03
Lance Branquinho

Mercedes-Benz will soon cease production of its double-cab bakkie.

Rumours predicting the end of Mercedes-Benz's X-Class might be closer to becoming fact. Although Mercedes-Benz has remained defiant in the face of weak global sales of its double-cab bakkie, powerful market forces might finally have overwhelmed the project.



Image: Motorpress merc x-class

X-Class sales have been very poor, since its launch, and the trend is worsening. In 2018 only 16 700 X-Class bakkies were delivered to customers. Last year Mercedes-Benz sold even less, with 15 800 units produced. The reality of declining X-Class sales has forced a sobering of attitude amongst Mercedes-Benz's product planners. With the company facing profit pressure going into 2020, after a sharp income drop in 2019, there is no margin for supporting a failing product line.

Further complicating the sustainability of the X-Class project is its joint-venture dynamic with Nissan. Sharing a platform and production facility with the Japanese brand has inadvertently exposed Mercedes-Benz to all the issues currently at play with Nissan, which has been trending in 2020 news searches for all the wrong reasons.

As enormous restructuring pressure builds across Nissan's global production facilities and within its core business strategy, the viability of Mercedes-Benz's X-Class has become untenable. When quizzed about the X-Class and its future lifecycle, Mercedes-Benz has always defended its status as a 'niche' product. But now it seems that the reasoning and justification for continued X-Class production has come to an end.

Mercedes-Benz is under massive pressure to save costs. It must deploy significant resources to engineer a future range of electric vehicles, which requires substantial investment. Remaining committed to a failed product such as X-Class, which is not achieving sales

targets, is simply not acceptable. To this end, Mercedes-Benz has confirmed that X-Class production is due to end by this May. Nissan's Barcelona factory, where it is built alongside Navara, has not been commissioned to continue assembly of the Germany double-cab beyond Q2 2019. It is a rare instance for any car company to cull a model which is still so young in its lifecycle, but X-Class will not even get to see a mid-life facelift or technology upgrade. Rarer still, for a brand as old and powerful as Mercedes, to have made a mistake in its product planning and execution.

Although weak demand was primarily the reason for X-Class failing (due to its overly ambitious pricing), the operational issues afflicting both Mercedes-Benz and Nissan no doubt hastened this decision. Automotive industry joint ventures are fraught with tension and when a collaborative product is failing, this tension increases. Nissan has huge management and operational issues to deal with in 2020, with waves of retrenchments scheduled for its global assembly plants. Mercedes has structural problems of its own to solve, having suffered through a challenging 2019. X-Class was an uncomfortable drag on Mercedes-Benz's normally confident commercial vehicle division, which posted a R33-billion loss in 2019.

Source: https://www.wheels24.co.za/News/its-finally-happened-the-mercedes-x-class-will-be-no-more-20200131

Based on the above passage critically discus the following:

a) What do you think of the X-Class' production coming to an end? **3 Points**

b) What do you think may have gone wrong with the X-Class venture from technological innovation point of view? **5 Points**

c) What could be the important innovation implications from this experience? **4 Points**

SECTION B: ANSWER TWO QUESTIONS ONLY IN THIS SECTION

QUESTION B1

a) Discuss FIVE characteristics of successful innovating organizations. **5 Points**

b) Discuss FIVE of the seven sources of innovation impulses according to Peter Drucker (1985). **5 Points**

QUESTION B2

Discuss the two concepts of "sustaining innovation" and "disruptive innovation" and explain the differences between them. **10 Points**

QUESTION B3

Explain Rothwell's FIVE models of the innovation process and illustrate your response with diagrams. **10 Points**

QUESTION B4

Explain the following theories of innovation and illustrate your response with diagrams and examples:

a) Technology S-curve. **5 Points**

b) Absorptive capacity. **5 Points**

END OF QUESTIONS

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL OF BUSINESS

MIE 6031/MBS 6041/OSM6012- COMPETIIVE MARKETING STRATEGY/MARKETING/STRATEGY/ BUSINESS TO BUSINESS STRATEGY

FINAL EXAMINATION

SEPTEMBER 2021

Time Allowed: Three (3) hours

Instructions to Candidates:

1. Read the instructions very carefully

2. Check that you have the correct examination paper in front of you.

3. There are two (2) sections in this examination paper; Section A and Section B. Section A is compulsory. Answer any Four (4) from Section B.

4. All answers must only be answered in the answer booklet provided.

5. Write down the question numbers that you have answered on the cover of the examination booklet provided.

4 Marks for each question are indicated in the brackets.

5 Answers must be in complete sentences. No credit will be given for any answer that is in point form.

SECTION A: COMPULSORY

Question 1

MINI CASE:

The Tea industry is characterized by oversupply and overcapacity, with surpluses of 120 000 tonnes a year. Tea plantations swallow a lot of capital, and the return is not as attractive as in industries such as technology or services. Tea cannot be stockpiled, unlike coffee, keeping it for two years at most. Tea is auctioned in London and prices are the same in absolute terms as they were 15 years ago. Tea is produced in Africa and India, Sri Lanka and China. Because of the huge capital investment involved, the most recent investments have been quasi government, such as those by commonwealth Development Corporation ailing estates in East Africa. There is no single demarcation between buyers and sellers. Tea bag manufacturers own their own estates, as well as buying in tea from outside sources.

Recently tea prices were described in India at least being "exceptionally firm". The shortage and high prices of coffee have also raised demand for tea which remains the cheapest of all beverages in spite of recent rise in prices. Demand from Russia, Poland, and Iran and are expected to rise.

a) Carry out a five-force analysis of Tea industry. **(10 Marks)**

b) Suggest possible marketing strategy for a tea grower with a number of estates which has traditionally sold its tea at the auction. **(10 Marks)**

[TOTAL: 20 MARKS]

SECTION B: ANSWER ANY FOUR (4) QUESTIONS

Question Two

a) Getting pricing right for the products an organization sells can be crucial to Firms. If prices are set too low, a company may achieve good sales volumes, but end up making no profit from them. If on the other hand prices are set too high, a company may sell very little of its products. resulting in surpluses and under-utilized production facilities. Getting pricing just right is a combination of an art and a science.

ABC Limited is an organization that manufactures household cleaning materials in Zambia, it is planning of launching a new product on the market, what pricing strategies can the company use for its new product? **(10 Marks)**

b) Discuss the factors both internal and external factors that can influence pricing decisions of ABC Limited. **(10 Marks)**

c) Briefly explain what price is. **(5 Marks)**

[TOTAL: 20 MARKS]

Question Three

a) Distinguisn between cost leadership strategy and Differentiation strategy. **(4 Marks)**

b) Explain the role SWOT analysis plays in helping the strategic manager to come up with strategic decisions that can give a firm a competitive advantage **(10 Marks)**

c) Explain the factors that affect market segment attractiveness. **(6 Marks)**

[TOTAL: 20 MARKS]

Question Four

Your organisation has been asked to carry out a programme of qualitative research for a company in the mining industry that produces steel for Lusaka province. The

company wants to know if and how the public's perceptions of its brand have been affected by environmental concerns and increases in prices.

a) Identify 3 methods of primary data collection by which the information the company requires could be gathered. Outline the strengths and limitations of each approach you suggest.

(10 Marks)

b) Explain descriptive research design. **(10 Marks)**

[TOTAL: 20 MARKS]

Question Five

Write brief notes on the following terms:

a) Comparative Advantage **(5 Marks)**

b) Cost Leadership Strategy **(5 Marks)**

c) Marketing Plan **(5 Marks)**

d) Competitive Advantage **(5 Marks)**

[TOTAL: 20 MARKS]

QUESTION SIX

You have just been appointed as the marketing manager for a leading brand of cigarettes. Your new boss is seriously concerned about the negative impact that the anti-smoking lobby is having on sales. She asks you to prepare a short discussion paper for the next board meeting in which you are to outline what cultural, social, personal, and psychological factors affect a consumer's decision to smoke. She also asks you to consider how an understanding of smoker's buyer behaviour might be used to help develop a more effective positioning statement for the company's brand. Write that paper. **(20 Marks)**

[TOTAL: 20 MARKS]

END OF EXAMINATION.

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

OPS-Postgraduate Sessional Examination

THURSDAY 21st February 2019

MSC/MBA-OSM 5022: GLOBAL OPERATIONS MANAGEMENT (GOM)

INSTRUCTIONS **DURATION: 3 HOURS**

a) Ensure that you thoroughly read through the questions
b) Mobile (Cell) phones are not allowed
c) Scientific calculators are permitted
d) There are ***Six (6)*** Questions in this paper
e) Answer Question ***One (1) (compulsory)*** and any other ***Three (3)*** questions with clear illustrations and diagrams where necessary
f) All ***Four (4)*** questions carry equal marks

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Graduate School of Business Examinations

QUESTION ONE

Inventory Management is an important area of Global Operations Management. When anecdotal data is not available Probability Models are used to determine the Re-order point (ROP); In a scenario of Stochastic demand and Constant Lead time, The Safety Stock Quantities could be determined. If the Ro-order point (ROP) is 500 Units, the Stockout costs ZMW 400 per unit product, approximate number of orders (N) per year being 6 and the Carrying/Holding costs ZMW 50 per unit.

(a) With the data given in the table below, determine the economical safety stock (SS) that could be used to mitigate product stockouts risk **[10 Marks]**

Number of Product Units	Probability
300	0.2
400	0.2
ROP ⟶ **500**	0.3
600	0.2
700	0.1

(b) In another scenario you as Operations Manager in your firm is required to apply probability models to determine Re-order point (ROP) and Safety Stock (SS) when the cost of Stockouts cannot be determined. Where μ = Average Demand during lead time is 3500, σ_{dlt} = Standard Deviation of demand during lead time is 100 Units. If the Stockout policy is 5%: Calculate the ROP and SS **[10 Marks]**

(c) In another case, the Demand per day is variable and Lead Time (in days) is constant. If the daily average demand is 150 Units, the lead time is 2 days and standard deviation of daily demand is 50 Units. If the Service level is 90%, Determine the ROP and SS **[5 Marks]**

QUESTION TWO

IFAA and IFLA are models used to analyse Global operations pre-requisites in terms of Facility Acquisition and Location;

(a) What do the acronyms 'IFAA' and 'IFLA' stand for and what are the salient differences between these ***Two (2)*** models **[10 Marks]**

(b) Why is it necessary to combine IFAA and IFLA into one analysis when considering operations at a global level **[10 Marks]**

(c) Discuss elaborately on the ***Two (2)***valuation models/techniques used to ascertain how much an acquiring firm must pay for the facilities it plans to acquire and its viability? State some of the valuation model examples under these ***Two (2)*** **[5 Marks]**

QUESTION THREE

A Farmer has been using Fertilizer Compounds as a soil conditioner on his piece of land for a good yield. After ***Seven (7)*** years, the Farmer has gathered the following historical data shown in the table below pertaining to demand of fertilizer each year;

FARMER YEARLY FERTILIZER DEMAND

YEAR	FERTILIZER DEMAND (Tons)	YEAR	FERTILIZER DEMAND (Tons)
1	370	**5**	525
2	395	**6**	710
3	400	**7**	610
4	450	**8**	?

(a) (i) Through the Least Squares Method (LSM), develop a Linear equation that the Farmer would employ in the Fertilizer Forecasting problem **[5 Marks]**

(ii) With the Linear equation developed in (i), Calculate the Farmer's Fertilizer demand in ***Year Eight (8)*** **[5 Marks]**

(b) A Business entity has gone global with its Operations. The entity realizes that there is Seasonal Demand Variations (SDV) on its competitive Product for each year. The Company seeks assistance from you as an Operations Forecasting Manager on how best to deal with the SDV with the following historical performance data;

THREE YEAR PRODUCT DEMAND			
Month	**Year 1**	**Year 2**	**Year 3**
January	400	425	525
February	350	425	425
March	450	465	410
April	900	475	575
May	665	625	655
June	555	575	800
July	500	610	565
August	440	510	550
September	425	450	475
October	385	390	425
November	375	510	415
December	410	310	400

(a) (i) Calculate the Seasonal Index for each month **[5 Marks]**

(ii) With the Monthly Seasonal Indexes (MSI) calculated in (i), Determine the Seasonal Forecast for ***Year Four (4)*** and plot the graph of Demand-Forecast Seasonal Trends for the ***Four (4)*** years **[5 Marks]**

(c) (i) State ***Three (3)*** Pertinent Least of Squares Method (LSM) requirements

(ii) List and briefly explain ***Five (5)*** steps in the process of Monthly Sessional Variations (MSV) Forecasting **[5 Marks]**

QUESTION FOUR

Quality is one of the most important performance objectives for most Global Operations Organizations. Elucidate the following;

(d) Quality is believed to have evolved from Japan, yet its origins are in the United States of America (USA). Briefly explain such a phenomenon by also highlighting at least ***Six (6)*** Quality Gurus that are behind the development of Quality Management and their espoused theories or philosophies **[10 Marks]**

(e) Total Quality Management (TQM) is anchored on ***Three (3)*** principles, what are they? And what are their main features that aim at having TQM succeed in Global Operation Organisations? Describe the EFQM Excellence Model and state at least ***Four (4)*** Quality awards that incentivize Quality compliance in Global Operation Organisations **[10 Marks]**

(f) State, define and briefly describe, ***Two (2)*** quality evaluation wheel models (Improvement cycles) or Quality cycles and the ISO 9000 quality approach for Global operations. **[5 Marks]**

QUESTION FIVE

In International operations context analysis of Facilities' location is cardinal and the ***Three (3)*** techniques are employed namely; Location factor rating, Centre of gravity and the Load distance;

(a) Describe the above listed ***Three (3)*** analysis techniques and also state their salient features and differences through illustrations and examples? **[7 Marks]**

(b) There are ***Two (2)*** potential sites and ***Four (4)*** eligible suppliers to be considered with their distances (X,Y) and weights (Wt) as shown in the table below;

Potential sites		
Sites	**X**	**Y**
1	380	200
2	440	470
3	270	420

Suppliers				
Supplier	**A**	**B**	**C**	**D**
X	220	120	270	520
Y	220	520	620	320
Wt	75	105	135	60

(i) Compute distance from each site to each supplier **[10 Marks]**

(ii) Compute the load distance and determine the suitable site out of the three potential sites stating reasons for such an option **[8 Marks]**

QUESTION SIX

After Operations Facilities have been located and acquired, it is cardinal that Operation systems and processes are designed for implementation;

(a) Mention and briefly describe ***Seven (7)*** decision areas which the Operations Manager needs to take into consideration when designing the Operations Processes and Systems **[5 Marks]**

(b) State and briefly elucidate ***Three (3)*** Parameters that guide the Classifying of Operating Systems and Processes, by also explaining the salient factors that fall under these ***Three (3)*** Classifier guiders **[10 Marks]**

(c) State and explain ***Five (5)*** Classifications of Operating Systems that are mainly employed in the transformations of inputs into outputs (Raw Materials to Products). Explain key issues that dictate the differences in these ***Five (5)*** Classifications of Operating Systems. State the pros and Cons of these Operating Systems **[10 Marks]**

END OF THE EXAMINATION

Standard Normal Probabilities

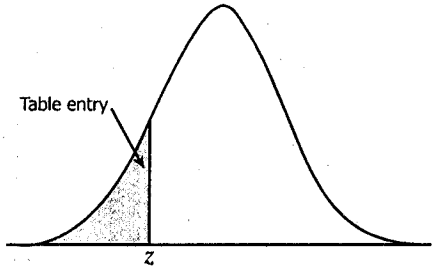


Table entry for z is the area under the standard normal curve to the left of z.

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
−3.4	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0002
−3.3	.0005	.0005	.0005	.0004	.0004	.0004	.0004	.0004	.0004	.0003
−3.2	.0007	.0007	.0006	.0006	.0006	.0006	.0006	.0005	.0005	.0005
−3.1	.0010	.0009	.0009	.0009	.0008	.0008	.0008	.0008	.0007	.0007
−3.0	.0013	.0013	.0013	.0012	.0012	.0011	.0011	.0011	.0010	.0010
−2.9	.0019	.0018	.0018	.0017	.0016	.0016	.0015	.0015	.0014	.0014
−2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
−2.7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026
−2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
−2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
−2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
−2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
−2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110
−2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
−2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
−1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233
−1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294
−1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
−1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
−1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559
−1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681
−1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
−1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
−1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
−1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
−0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
−0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
−0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148
−0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
−0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
−0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
−0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
−0.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
−0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
−0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641

Standard Normal Probabilities

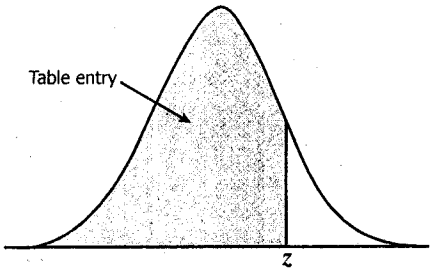


Table entry for z is the area under the standard normal curve to the left of z.

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
0.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
0.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141
0.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517
0.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
0.5	.6915	.6950	.6985	.7019	.7054	.7098	.7123	.7157	.7190	.7224
0.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
0.7	.7580	.7611	.7642	.7673	.7704	.7734	.7764	.7794	.7823	.7852
0.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133
0.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9279	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9429	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9515	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9641	.9649	.9656	.9664	.9671	.9678	.9686	.9693	.9699	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9761	.9767
2.0	.9772	.9778	.9783	.9788	.9793	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9875	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986
3.0	.9987	.9987	.9987	.9988	.9988	.9989	.9989	.9989	.9990	.9990
3.1	.9990	.9991	.9991	.9991	.9992	.9992	.9992	.9992	.9993	.9993
3.2	.9993	.9993	.9994	.9994	.9994	.9994	.9994	.9995	.9995	.9995
3.3	.9995	.9995	.9995	.9996	.9996	.9996	.9996	.9996	.9996	.9997
3.4	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9998

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

Postgraduate Sessional/Final Examinations

Friday 11th December 2020

MSC/MBA-OSM 5022: GLOBAL OPERATIONS MANAGEMENT (GOM)

INSTRUCTIONS **DURATION: 3 HOURS**

a) Ensure that you thoroughly read through the questions
b) Mobile (Cell) phones are not allowed
c) Scientific calculators are permitted
d) There are ***Six (6)*** Questions in this paper
e) Answer Question ***One (1) (compulsory)*** and any other ***Three (3)*** questions with clear illustrations and diagrams where necessary
f) All ***Four (4)*** questions carry equal marks

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Graduate School of Business Examinations

QUESTION ONE

Chapamo Mining Company stocks Explosives for consolidated Copper Ore blasting. Recently the Company has been offered a Quantity Discount Schedule for these Explosives. This Quantity Schedule is as shown in the table below. Further, the Set up/Ordering cost is ZMW 4999. The Annual Demand 5,000, 000 Units and Annual Inventory Carrying Charge/Cost as a percentage, is 20%. The Annual Product Price/Cost currently (Without Discount) is ZMW 25,000,000,000;

TYPICAL QUANTITY SCHEDULE, INVENTORY COST IS 20% of UNIT COST

Demand (D) = 5,000,000 Units per year Holding Costs (C_h) = 20% per Item per year
Order Costs (C_o) = ZMW 49

Discount Number	Discount Quantity	Discount Percentage (%)	Price (P) ZMW per Item
1	0 - 9999	No Discount	5000
2	10,000- 19999	4	4800
3	20,000 and Over	5	4750

(a) With a relevant diagrams Conceptualize and (i) Drive the Economic Order Quantity (EOQ) and Production Order Quantity (POQ) Model Formula and State (ii) the Quantity Discount Equation and (iii) the Modified Economic Order Quantity (MEOQ)Formula for Quantity Discount problem **[7 Marks]**

(b) Calculate the ***Three (3)*** possible Quantities (Q*) that would satisfy the conditions of the Discount Schedule (Table) that Chapamo Mining would be considering in order to enjoy offered discount incentive **[8 Marks]**

(c) Using the Quantity Discount Model (QDM) Equation and the Modified Economic Order Quantity (MEOQ) Formula for Quantity Discount problems stated in (a); Deduce the Quantity which will minimize the Total Cost (TC) of Inventory for the given scenario and the Total Cost of Inventory which this will be achieved with its related Discount Percentage **[10 Marks]**

QUESTION TWO

Currently most operations in the Business world (Organisations) are having a "face of International (Global)" in terms of operations and product processes:

(a) What are "Global Operations"? also state and briefly describe ***Seven (7)*** characteristics of Domestic to Global Operations **[7 Marks]**

(b) State and briefly explain ***Seven (7)*** drivers as important factors which necessitate Global operations for most Business Organisations and list and briefly describe ***Six (6)*** alternative strategies you would employ in making decisions for locating and acquiring existing facilities **[8 Marks]**

(c) If you were to employ the combination of ***IFAA*** and ***IFLA*** referred to as ***IFALA*** models in the analysis of the location of a new facility, how will you describe these ***Two (2)*** models through the key principles and salient features and how would this help in bettering the results ? What do the acronyms IFAA, IFLA and IFALA stand for? **[10 Marks]**

QUESTION THREE

You as a Global Operations Manager has been tasked by Senior Management of your Company to strategically analyse ***Two (2)*** types of Demand Forecasting in order to arrive at the most optimal forecast that satisfies the international Market with minimal deviation. From historical actual demand on the product, the firm has come up with ***Two (2)*** *Forecasts* ***A & B*** as shown in the table below;

DEMAND FORECASTING

FORECASTING A			FORECASTING B		
Quarter	**Actual Demand**	**Forecast Demand**	**Quarter**	**Actual Demand**	**Forecast Demand**
1	9,000	10,000	**1**	9,000	9,500
2	9,500	10,000	**2**	9,500	10,000
3	11,500	10,000	**3**	11,500	12,000
4	10,000	11,000	**4**	10,000	11,000
5	12,500	11,000	**5**	12,500	10,000
6	14,000	11,000	**6**	14,000	11,000

(a) Calculate the Mean Absolute Deviation (MAD), Mean Squared Error (MSE) and Mean Absolute Percentage Error (MAPE) at the end of Quarter 6 for Forecasts A & B **[8 Marks]**

(b) (i) Deduce the Tracking Signals (TS) for Forecasts A & B and determine the best Tracking signal obtained from the two Forecasts **[7 Marks]**
(ii) What is tracking signal and what statistical measure is used to determine it, including its significance in Forecasting? **[3 Marks]**

(c) Multiple Linear Regression analysis for Forecasting for demand by Business entities and the equation $y=a+b_1x_1+b_2x_2$ is used. This model is normally used to accommodate various variables. A company has been using this variable to for forecasting of sales (y). Historical data indicates a constant (a) value of 1800, index on the value of sales is denoted b_1 and x_1 is the value of sale in Zambian Kwacha expressed as 0.3 and ZMK6000 Million, respectively. While an index for interest rate paid on sales transactions is stated as b_2 and x_2 representing interest rate with values 15000 and 0.12 accordingly. Using the Multiple Regression Model elucidate the forecast value of Sales in Million Zambian Kwacha, considering the amount of interest as cost on sales or an expenditure which reduces the incomes on sales gained. **[7 Marks]**

QUESTION FOUR

Quality is one of the most important performance objectives for most Global Operations Organizations. Elucidate the following;

(a) Quality is believed to have evolved from Japan, yet its origins are in the United States of America (USA). Briefly explain such a phenomenon by also highlighting at least ***Six (6)*** Quality Gurus that are behind the development of Quality Management and their espoused theories or philosophies **[10 Marks]**

(b) Total Quality Management (TQM) is anchored on ***Three (3)*** principles, what are they? And what are their main features that aim at having TQM succeed in Global Operation Organisations? Describe the EFQM Excellence Model and state at least ***Four (4)*** Quality awards that incentivize Quality compliance in Global Operation Organisations **[10 Marks]**

(c) State, define and briefly describe ***Two (2)*** quality evaluation wheel models (Improvement cycles) or Quality cycles and the ISO 9000 quality approach for Global operations. **[5 Marks]**

QUESTION FIVE

You have been called upon by a Print Media Organisation who produces daily Magazines to supply to various Vendors in the City of Lusaka. Each Vendor is supplied 1200 copies a day at a cost of ZMW 7 which they resale at ZMW12.50. The sale of Magazines obeys a normally distribution theory, with a standard deviation of 150 Magazines. The Print Media pays ZMW 3 credit to the Vendor for each unsold Magazine. Vendors have engaged you as a Strategist to give an advice on how many Magazines each Vendor should order a day and the stockout risk for that quantity. For you to adequately advise the Vendors, you are to deduce the following:

(a) (i) The cost of Shortage and (ii)cost of Overage **[7 Marks]**

(b) (i) The current Service level and (ii) the optimal stocking level for each Vendor **[10 Marks]**

(c) The stockout risk that the Vendor may suffer with the current strategy **[8 Marks]**

QUESTION SIX

After Operations Facilities have been located and acquired, it is cardinal that Operation systems and processes are designed for implementation;

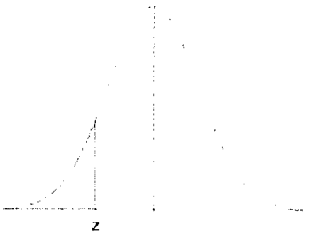
(a) Mention and briefly describe ***Seven (7)*** decision areas which the Operations Manager needs to take into consideration when designing the Operations Processes and Systems **[5 Marks]**

(b) State and briefly elucidate ***Three (3)*** Parameters that guide the Classifying of Operating Systems and Processes, by also explaining the salient factors that fall under these ***Three (3)*** Classifier guiders **[10 Marks]**

(c) State and explain ***Five (5)*** Classifications of Operating Systems that are mainly employed in the transformations of inputs into outputs (Raw Materials to Products). Explain key issues that dictate the differences in these ***Five (5)*** Classifications of Operating Systems. State the pros and Cons of these Operating Systems **[10 Marks]**

END OF THE EXAMINATION

Standard Normal Cumulative Probability Table



Cumulative probabilities for NEGATIVE z-values are shown in the following table:

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
-3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
-3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
-3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
-2.9	0.0019	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014
-2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
-2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
-2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
-2.5	0.0062	0.0060	0.0059	0.0057	0.0055	0.0054	0.0052	0.0051	0.0049	0.0048
-2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0068	0.0066	0.0064
-2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
-2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
-2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
-2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
-1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823
-1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
-1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170
-1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
-0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
-0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867
-0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
-0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
-0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
-0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
-0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
-0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
-0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
0.0	0.5000	0.4960	0.4920	0.4880	0.4840	0.4801	0.4761	0.4721	0.4681	0.4641

tandard Normal Cumulative Probability Table



umulative probabilities for POSITIVE z-values are shown in the following table:

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

OPS-Postgraduate Sessional Examination

Monday 16th September 2019

MSC/MBA-OSM 5022: GLOBAL OPERATIONS MANAGEMENT (GOM)

INSTRUCTIONS **DURATION: 3 HOURS**

a) Ensure that you thoroughly read through the questions
b) Mobile (Cell) phones are not allowed
c) Scientific calculators are permitted
d) There are ***Six (6)*** Questions in this paper
e) Answer Question ***One (1) (compulsory)*** and any other ***Three (3)*** questions with clear illustrations and diagrams where necessary
f) All ***Four (4)*** questions carry equal marks

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Graduate School of Business Examinations

QUESTION ONE

You as a Global Operations Manager has been tasked by Senior Management of your company to strategically analyse ***Two (2)*** types of Demand Forecasting in order to arrive at the most optimal forecast that satisfies the international with minimal deviation. From historical actual demand on the product, the firm has come up with ***Two (2) Forecasts A & B*** as shown in the table below;

DEMAND FORECASTING

FORECASTING A			FORECASTING B		
Quarter	**Actual Demand**	**Forecast Demand**	**Quarter**	**Actual Demand**	**Forecast Demand**
1	900	1000	**1**	900	950
2	950	1000	**2**	950	1000
3	1150	1000	**3**	1150	1200
4	1000	1100	**4**	1000	1100
5	1250	1100	**5**	1250	1000
6	1400	1100	**6**	1400	1100

(a) (i) Calculate the Mean Absolute Deviation (MAD) at the end of Quarter 6 for Forecasts A & B **[5 Marks]**

(ii) Deduce the Tracking Signals (TS) for Forecasts A & B and determine the best Tracking signal obtained from the two Forecasts **[5 Marks]**

(ii) What is ***tracking signal*** and what statistical measure is used to determine it, including its significance in Forecasting? **[5 Marks]**

(b) Multiple Linear Regression analysis for Forecasting for demand by Business entities and the equation $y=a+b_1x_1+b_2x_2$ is used. This model is normally used to accommodate various variables. A company has been using this ~~variable~~ Model to for forecasting of sales (y). Historical data indicates a constant (a) value of 180, index on the value of sales is denoted b_1 and x_1 is the value of sale in Zambian Kwacha expressed as 0.3 and ZMK600 Million respectively. While an index for interest rate paid on sales transactions is stated as b_2 and x_2 representing interest rate with values 500 and 0.12 accordingly. Using the Multiple Regression Model elucidate the forecast value of Sales in Million Zambian Kwacha, considering the amount of interest as cost on sales or an expenditure which reduces the incomes on sales gained. **[10 Marks]**

QUESTION TWO

Global Operations Managers are not Gamblers, but they decision makers. To achieve the goals of their organisations, Managers must understand how decisions are made and know which decision tool to use;

(a) Identify and briefly explain the ***Six (6)*** steps that will be followed or considered in order to arrive at a good decision in Operations Management **[5 Marks]**

(b) There are ***Two (2)*** fundamental decision-making areas in Operations Management decision paradigms. Elucidate the ***Two (2)*** in terms of the types

and the symbols used by giving examples of decision tree, decision table techniques and the Phillip's Poker decision process **[10 Marks]**

(c) State the ***Three (3)*** decision – making environments and briefly explain how these environments present themselves and methods employed considering the maxims of ***Maximax, Maximin*** **and** ***Equally likely, Expected Monetary Value – EMV*** **and** ***Expected Value of Perfect Information – EVPI*** **[10 Marks]**

QUESTION THREE

Inventory Management is an important area of Global Operations Management. When anecdotal data is not available Probability Models are used to determine the Re-order point (ROP); In a scenario of Stochastic demand and Constant Lead time, The Safety Stock Quantities could be determined. If the Ro-order point (ROP) is 6000 Units, the Stockout costs ZMW 600 per unit product, approximate number of orders (N) per year is 6 and the Carrying/Holding cost is ZMW 60.

(a) With the data given in the table below, determine the economical safety stock (SS) that could be used to mitigate product stockouts risk **[10 Marks]**

Number of Product Units	Probability
4000	0.2
5000	0.2
ROP ⟶ 6000	0.3
7000	0.2
8000	0.1

(b) In another scenario you as Operations Manager in your firm required to apply probability models to determine Re-order point (ROP) and Safety Stocks (SS) when the cost of Stockouts cannot be determined. Where μ = Average Demand during lead time is 3600, σ_{dlt} = Standard Deviation of demand during lead time is 100 Units. If the Stockout policy is 5%: Calculate the ROP and SS **[10 Marks]**

(c) In another scenario where Demand per day is variable and Lead Time (in days) is constant. If the daily average demand is 1600 Units, lead time is 2 days and standard deviation of daily is 600 Units. If the Service level is 93%: Determine the ROP and SS **[5 Marks]**

QUESTION FOUR

Quality is one of the most important performance objectives for most Global Operations Organizations. Elucidate the following;

(a) Quality is believed to have evolved from Japan, yet its origins are in the United States of America (USA). Briefly explain such a phenomenon by also highlighting at least ***Six (6)*** Quality Gurus that are behind the development of Quality Management and their espoused theories or philosophies **[10 Marks]**

(b) Total Quality Management (TQM) is anchored on ***Three (3)*** principles, what are they? And what are their main features that aim at having TQM succeed in Global Operation Organisations? Describe the EFQM Excellence Model and state at least ***Four (4)*** Quality awards that incentivize Quality compliance in Global Operation Organisations **[10 Marks]**

(c)

(d) State, define and briefly describe, ***Two (2)*** quality evaluation wheel models (Improvement cycles) or Quality cycles and the ISO 9000 quality approach for Global operations. **[5 Marks]**

QUESTION FIVE

In International operations context analysis of Facilities' location is cardinal and the ***Three (3)*** techniques are employed namely; Location factor rating, Centre of gravity and the Load distance;

(a) Describe the above listed ***Three (3)*** analysis techniques and also state their salient features and differences through illustrations and examples? **[7 Marks]**

(b) There are ***Three (3)*** potential sites and ***Four (4)*** eligible suppliers to be considered with their distances (X,Y) and weights (Wt) as shown in the table below;

Potential sites		
Sites	**X**	**Y**
1	580	400
2	640	670
3	470	620

Suppliers				
Supplier	**A**	**B**	**C**	**D**
X	420	320	470	720
Y	420	720	820	520
Wt	75	105	135	60

(i) Compute distance from each site to each supplier **[10 Marks]**

(ii) Compute the load distance and determine the suitable site out of the three potential sites stating reasons for such an option **[8 Marks]**

QUESTION SIX

After Operations Facilities have been located and acquired, it is cardinal that Operation systems and processes are designed for implementation;

(a) Mention and briefly describe ***Seven (7)*** decision areas which the Operations Manager needs to take into consideration when designing the Operations Processes and Systems **[5 Marks]**

(b) State and briefly elucidate ***Three (3)*** Parameters that guide the Classifying of Operating Systems and Processes, by also explaining the salient factors that fall under these ***Three (3)*** Classifier guiders **[10 Marks]**

(c) State and explain ***Five (5)*** Classifications of Operating Systems that are mainly employed in the transformations of inputs into outputs (Raw Materials to Products). Explain key issues that dictate the differences in these ***Five (5)*** Classifications of Operating Systems. State the pros and Cons of these Operating Systems **[10 Marks]**

END OF THE EXAMINATION

Standard Normal Probabilities

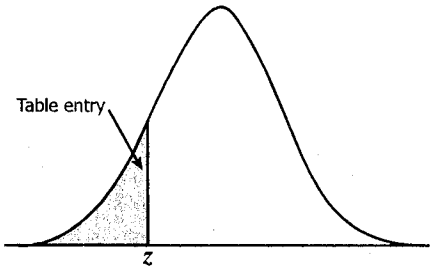


Table entry for z is the area under the standard normal curve to the left of z.

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
−3.4	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0002
−3.3	.0005	.0005	.0005	.0004	.0004	.0004	.0004	.0004	.0004	.0003
−3.2	.0007	.0007	.0006	.0006	.0006	.0006	.0006	.0005	.0005	.0005
−3.1	.0010	.0009	.0009	.0009	.0008	.0008	.0008	.0008	.0007	.0007
−3.0	.0013	.0013	.0013	.0012	.0012	.0011	.0011	.0011	.0010	.0010
−2.9	.0019	.0018	.0018	.0017	.0016	.0016	.0015	.0015	.0014	.0014
−2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
−2.7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026
−2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
−2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
−2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
−2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
−2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110
−2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
−2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
−1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233
−1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294
−1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
−1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
−1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559
−1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681
−1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
−1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
−1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
−1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
−0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
−0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
−0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148
−0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
−0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
−0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
−0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
−0.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
−0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
−0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641

Standard Normal Probabilities

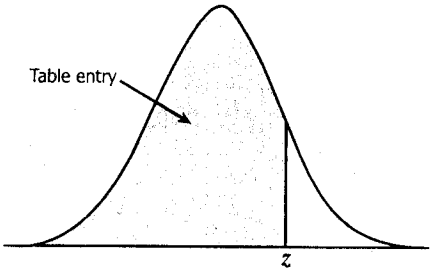


Table entry for z is the area under the standard normal curve to the left of z.

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
0.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
0.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141
0.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517
0.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
0.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224
0.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
0.7	.7580	.7611	.7642	.7673	.7704	.7734	.7764	.7794	.7823	.7852
0.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133
0.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9279	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9429	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9515	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9641	.9649	.9656	.9664	.9671	.9678	.9686	.9693	.9699	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9761	.9767
2.0	.9772	.9778	.9783	.9788	.9793	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9875	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986
3.0	.9987	.9987	.9987	.9988	.9988	.9989	.9989	.9989	.9990	.9990
3.1	.9990	.9991	.9991	.9991	.9992	.9992	.9992	.9992	.9993	.9993
3.2	.9993	.9993	.9994	.9994	.9994	.9994	.9994	.9995	.9995	.9995
3.3	.9995	.9995	.9995	.9996	.9996	.9996	.9996	.9996	.9996	.9997
3.4	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9998

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

OPS-Postgraduate Sessional Examinations

Wednesday 1st July 2020

MSC/MBA-OSM 5022: GLOBAL OPERATIONS MANAGEMENT (GOM)

INSTRUCTIONS **DURATION: 3 HOURS**

a) Ensure that you thoroughly read through the questions
b) Mobile (Cell) phones are not allowed
c) Scientific calculators are permitted
d) There are ***Six (6)*** Questions in this paper
e) Answer Question ***One (1) (compulsory)*** and any other ***Three (3)*** questions with clear illustrations and diagrams where necessary
f) All ***Four (4)*** questions carry equal marks

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Graduate School of Business Examinations

QUESTION ONE

Inventory Management is an important area of Global Operations Management. When anecdotal data is not available Probability Models are used to determine the Re-order point (ROP); In a scenario of Stochastic demand and Constant Lead time, The Safety Stock Quantities could be determined. If the Ro-order point (ROP) is 600 Units, the Stockout costs ZMW 500 per unit product, approximate number of orders (N) per year being 6 and the Carrying/Holding costs ZMW 60 per unit.

(a) With the data given in the table below, determine the economical safety stock (SS) that could be used to mitigate product stockouts risk **[10 Marks]**

Number of Product Units	Probability
400	0.2
500	0.2
ROP ⟶ 600	0.3
700	0.2
800	0.1

(b) In another scenario you as Operations Manager in your firm is required to apply probability models to determine Re-order point (ROP) and Safety Stock (SS) when the cost of Stockouts cannot be determined. Where μ = Average Demand during lead time is 4000, σ_{dlt} = Standard Deviation of demand during lead time is 150 Units. If the Stockout policy is 5%: Calculate the ROP and SS **[10 Marks]**

(c) In another case, the Demand per day is variable and Lead Time (in days) is constant. If the daily average demand is 200 Units, the lead time is 4 days and standard deviation of daily demand is 70 Units. If the Service level is 90%, Determine the ROP and SS **[5 Marks]**

QUESTION TWO

IFAA and IFLA are models used to analyse Global operations pre-requisites in terms of Facility Acquisition and Location;

(a) What do the acronyms 'IFAA' and 'IFLA' stand for and what are the salient differences between these ***Two (2)*** models **[10 Marks]**

(b) Why is it necessary to combine IFAA and IFLA into one analysis when considering operations at a global level **[10 Marks]**

(c) Discuss elaborately on the ***Two (2)*** valuation models/techniques used to ascertain how much an acquiring firm must pay for the facilities it plans to acquire and its viability? State some of the valuation model examples under these ***Two (2)*** **[5 Marks]**

QUESTION THREE

A Farmer has been using Fertilizer Compounds as a soil conditioner on his piece of land for a good yield. After ***Seven (7)*** years, the Farmer has gathered the following historical data shown in the table below pertaining to demand of fertilizer each year;

FARMER YEARLY FERTILIZER DEMAND

YEAR	FERTILIZER DEMAND (Tons)	YEAR	FERTILIZER DEMAND (Tons)
1	370	5	525
2	395	6	710
3	400	7	610
4	450	8	?

(a) (i) Through the Least Squares Method (LSM), develop a Linear equation that the Farmer would employ in the Fertilizer Forecasting problem **[5 Marks]**

(ii) With the Linear equation developed in (i), Calculate the Farmer's Fertilizer demand in ***Year Eight (8)*** **[5 Marks]**

(b) A Business entity has gone global with its Operations. The entity realizes that there is Seasonal Demand Variations (SDV) on its competitive Product for each year. The Company seeks assistance from you as an Operations Forecasting Manager on how best to deal with the SDV with the following historical performance data;

THREE YEAR PRODUCT DEMAND			
Month	**Year 1**	**Year 2**	**Year 3**
January	400	425	525
February	350	425	425
March	450	465	410
April	900	475	575
May	665	625	655
June	555	575	800
July	500	610	565
August	440	510	550
September	425	450	475
October	385	390	425
November	375	510	415
December	410	310	400

(a) (i) Calculate the Seasonal Index for each month **[5 Marks]**

(ii) With the Monthly Seasonal Indexes (MSI) calculated in (i), Determine the Seasonal Forecast for ***Year Four (4)*** and plot the graph of Demand-Forecast Seasonal Trends for the ***Four (4)*** years **[5 Marks]**

(c) (i) State ***Three (3)*** Pertinent Least of Squares Method (LSM) requirements

(ii) List and briefly explain ***Five (5)*** steps in the process of Monthly Sessional Variations (MSV) forecasting **[5 Marks]**

QUESTION FOUR

Quality is one of the most important performance objectives for most Global Operations Organizations. Elucidate the following;

(d) Quality is believed to have evolved from Japan, yet its origins are in the United States of America (USA). Briefly explain such a phenomenon by also highlighting at least ***Six (6)*** Quality Gurus that are behind the development of Quality Management and their espoused theories or philosophies **[10 Marks]**

(e) Total Quality Management (TQM) is anchored on ***Three (3)*** principles, what are they? And what are their main features that aim at having TQM succeed in Global Operation Organisations? Describe the EFQM Excellence Model and state at least ***Four (4)*** Quality awards that incentivize Quality compliance in Global Operation Organisations **[10 Marks]**

(f) State, define and briefly describe, ***Two (2)*** quality evaluation wheel models (Improvement cycles) or Quality cycles and the ISO 9000 quality approach for Global operations. **[5 Marks]**

QUESTION FIVE

In International operations context analysis of Facilities' location is cardinal and the ***Three (3)*** techniques are employed namely; Location factor rating, Centre of gravity and the Load distance;

(a) Describe the above listed ***Three (3)*** analysis techniques and also state their salient features and differences through illustrations and examples? **[7 Marks]**

(b) There are ***Two (2)*** potential sites and ***Four (4)*** eligible suppliers to be considered with their distances (X,Y) and weights (Wt) as shown in the table below;

Potential sites		
Sites	**X**	**Y**
1	400	220
2	460	490
3	290	440

Suppliers				
Supplier	**A**	**B**	**C**	**D**
X	240	140	290	540
Y	240	540	640	340
Wt	75	105	135	60

(i) Compute distance from each site to each supplier **[10 Marks]**

(ii) Compute the load distance and determine the suitable site out of the three potential sites stating reasons for such an option **[8 Marks]**

QUESTION SIX

You as a Global Operations Manager has been tasked by Senior Management of your company to strategically analyse ***Two (2)*** types of Demand Forecasting in order to arrive at the most optimal forecast that satisfies the international with minimal deviation. From historical actual demand on the product, the firm has come up with ***Two (2) Forecasts A & B*** as shown in the table below;

DEMAND FORECASTING

FORECASTING A			FORECASTING B		
Quarter	**Actual Demand**	**Forecast Demand**	**Quarter**	**Actual Demand**	**Forecast Demand**
1	9,000	10,000	**1**	9,000	9,500
2	9,500	10,000	**2**	9,500	10,000
3	11,500	10,000	**3**	11,500	12,000
4	10,000	11,000	**4**	10,000	11,000
5	12,500	11,000	**5**	12,500	10,000
6	14,000	11,000	**6**	14,000	11,000

(a) (i) Calculate the Mean Absolute Deviation (MAD) at the end of Quarter 6 for Forecasts A & B **[5 Marks]**

(ii) Deduce the Tracking Signals (TS) for Forecasts A & B and determine the best Tracking signal obtained from the two Forecasts **[5 Marks]**

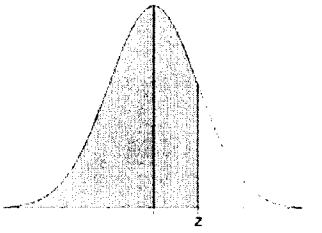
(ii) What is ***tracking signal*** and what statistical measure is used to determine it, including its significance in Forecasting? **[5 Marks]**

(b) Multiple Linear Regression analysis for Forecasting for demand by Business entities and the equation $y=a+b_1x_1+b_2x_2$ is used. This model is normally used to accommodate various variables. A company has been using this variable to for forecasting of sales (y). Historical data indicates a constant (a) value of ***ZMK360,000,000*** index on the value of sales is denoted b_1 and x_1 is the value of sale in Zambian Kwacha expressed as ***0.6*** and ***ZMK1,200 Million***, respectively. While an index for interest rate paid on sales transactions is stated as b_2 and x_2 representing interest rate with values ***ZMK200,000 000*** and ***0.40*** accordingly. Using the Multiple Regression Model elucidate the forecast value of Sales in Million Zambian Kwacha, considering the amount of interest as cost on sales or an expenditure which reduces the incomes on sales gained.

[10 Marks]

END OF THE EXAMINATION

Standard Normal Cumulative Probability Table



Cumulative probabilities for POSITIVE z-values are shown in the following table:

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

MSC IN OPERATIONS, PROJECTS AND SUPPLY CHAIN MANAGEMENT

SESSIONAL EXAMINATION

09:00HRS – SEPTEMBER 22, 2020

OSM 5032:COURSE TITLE: COMMERCIAL MANAGEMENT OF PROJECTS

Instructions to Candidates

1.0 This paper consists of eight (8) questions carrying equal marks.
2.0 Candidates are expected to attempt any five in whatever order.
3.0 The time allowed is three hours.
4.0 Make sure the student number is clearly indicated on all booklets together with the questions attempted.
5.0 The answer for each question should begin on a new sheet
6.0 Where specific information is not given, make and state your assumptions
7.0 Marks will be lost for illegible, untidy and unorganised presentation
8.0 The examination is strictly closed book

Question 1

1.1 Identify and discuss the five of the seven globally accepted considerations when selecting consultants?

(5 Marks)

1.2 1.2 What would constitute the scope and coverage of Consulting services?

(½ x10 = 5 Marks)

1.3 Highlight the content for the consulting services for an engineering works Project.

(10 Marks)

[20 Marks]

Question 2

Lusaka 24 Limited invited technical and financial proposals for consulting services to undertake an audit of its ICT infrastructure. The received proposals were opened and evaluated as summarised as follows:

No	Company Name	Technical Score	Financial Proposal
1	Bornwell and Benjamin Associates	81	K700,000.00
2	Hussein Corporation	94	K850,000.00
3	Harskins Limited	77	K750,000.00
4	Kanjobe Financial Services	80	K800,000.00

Additional information

a. The method of procurement used was QCBS;
b. The weight apportioned to the technical proposal was 75%;
c. The weight apportioned to the financial proposal was 25%; and
d. Minimum qualifying mark was 80%.

Required

2.1 Based on QCBS, which company would you recommend for award of contract?

(16 Marks)

2.2 Would your recommendation under (a) above change if the method of procurement was Least Cost Selection?

(4 Marks)

[20 Marks]

Question 3

3.1 With practical examples, explain how market conditions affect competition in the supply chain.

(10 arks)

3.2 List and explain the attributes of a good supplier.

(10 Marks)

[20 Marks]

Question 4

Having recently been hired as a Consultant, you have been presented with the following situations:

a. During negotiations for the award of contract for the development of a strategic and change management plan, a firm wants to substitute two of the five key staff with staff of lesser qualifications, but who are nonetheless adequate for the assignment;

b. The proposed shortlist for the development of a national policy on protection of endangered forest species prepared by the Zambia Forestry Authority consisted of the following:

i. UNICEF;
ii. A former employee who participated in the formulation of the TORs for a Technical advisor but resigned soon after.
iii. Local influential person;
iv. an NGO specialised in wild life conservation;
v. The Ministry of Forestry and Natural Resources;
vi. A local bank; and
vii. A joint venture between foreign a Telecommunication Expert and a local individual.

Task

Critically analyse and provide a professional position.

[20 Marks]

Question 5

When the two envelop bid process closes, there are primarily four stages that are carried out in the evaluation process. State and clearly elaborate what happens in all the four stages.

[20 Marks]

Question 6

a. Outline the process for dealing with unsolicited proposals under the Public Private Partnership model.

(14 marks)

b. Explain the circumstances that require procurement of works through force account.

(6 Marks).

Question 7

7.1 Explain the stages associated with the procurement cycle for works.

(10 Marks)

7.2 Explain the "portrait" of a Contract Manager.

(10 Marks)

[20 Marks]

Question 8

8.1 Austin Jacobs Corporation (AJC) was established in 2018 as a leading fashion centre. AJC carries a line of men's jeans and the company sells 500 pairs of jeans each quarter. It costs the company K15.00 per quarter to hold a pair of jeans in inventory, and the fixed cost to place an order is K25.00.

Task

Calculate the EOQ

(5 Marks)

8.2 Outline the variables of procurement critical to the success of any organization.

(15 Marks)

[20 Marks]

UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS
GLOBAL OPERATIONS MANAGEMENT (OSM 5122)
FINAL EXAMINATION

Instructions: Answer any Four Questions
Time Allowed: 3 Hours

Question One

(a) *"Success of a business rests on the satisfactory performance of Marketing, Finance and Operations, who interact but sometimes fiercely"*. Discuss how the contributions of each of these functions can be utilised in attaining competitiveness in an organisation.

[15 marks]

(b) Use the input –transformation – output model to explain the operations of an operation you are familiar with.

[10 marks]

Question Two

(a) Discuss with justification why companies go global. **[8 marks]**
(b) Briefly outline the strategies that organizations can adopt to go global. **[8 marks]**
(c) What are the challenges that organizations face in going global and how can these be overcome? **[9 marks]**

Question Three

Explain the production process for one of the key products in your organization or any organization that you are familiar with.
In your discussion also identify and evaluate the effectiveness of the quality control measures in place and suggest improvements that can be made. **[25marks]**

Question Four

(a) Identify an organization that is characterized by bottlenecks and demonstrate how Optimized Production Technology (OPT) as postulated by Eli Goldrat may help in optimising production. **[12 marks]**

(b) Your organization employs 2 design engineers and the engineers work 7 days a week. There are 9 working hours in a week and within these 9 hours, there is a 1 hour break for lunch. The design engineers together with the rest of the workforce attend a 30 minute meeting before the start of each day. Show how you would determine the Rated Capacity of the design engineering office. **[8 marks]**

(c) Mary Johnson, the tax assessor for ZRA, has estimated that her office must perform 180 property reevaluations per day. Each staff member assigned to the reevaluation will work an eight-hour day with one hour break for break and lunch. If it takes a staff member 10 minutes to do a reevaluation, and the average utilisation of any staff member is 75 percent, how many staff members must be assigned to this project? **[5 marks]**

Question Five

(a) The maintenance department of a small manufacturing firm has responsibility for maintaining inventory of spare parts for the machinery it services. The parts inventory, unit cost, and annual usage are as follows;

Part #	Unit Cost ($)	Annual Demand
A104	40.25	80
D205	80.75	120
X104	10.00	150
U404	40.50	150
L205	60.70	50
S104	80.20	20
X205	80.15	20
L104	20.05	100

The department manager wants to classify the inventory according to the ABC system but knows very little about it.

Advise the department manager on how the ABC system may be applied to his inventory of the spare parts and suggest the ideal policy options for each class of inventory. **[12 marks]**

(b) A production unit uses a particular component at the rate of 360 units per year. The holding cost for this ingredient is $0.80 per unit per year and the ordering cost are $100 per order.

(a) Compute the Economic Order Quantity (EOQ) **[2marks]**

(b) Assuming a 250-day work year; how many orders should be placed per year? **[2marks]**

(c) What is the expected time between orders? **[2marks]**

(d) What is the total cost of inventory? **[3 marks]**

(e) The production unit has discovered that its annual demand was wrongly forecasted. Instead of 360 units, it is actually 500 units. What should be the correct annual total cost of inventory? **[4 marks]**

Question Six

You have just been hired as the Supply Chain Manager of an organisation which has ventured into global operations. You have been tasked by the Board of Directors to organise and facilitate a seminar for senior management in which you should address the following key issues on global supply chain:

(i) Justification for global supply chain management **[3 marks]**

(ii) Role of information systems and technology in supply chain management. **[5 marks]**

(iii) Different types of global supply chain models and advise on the one most suitable to your organization **[6 marks]**

(iv) Benefits of global supply chains **[5 marks]**

(v) At least three challenges in supply chain management and how each may be overcome. **[6 marks]**

THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

OPS-Postgraduate Sessional Examination

Monday 6th September 2021

OSM 6031: OPERATIONS STRATEGY FOR INDUSTRY (OSI)

INSTRUCTIONS **DURATION: 3 HOURS**

a) Ensure that you thoroughly read through the questions
b) Mobile (Cell) phones are not allowed
c) Scientific calculators are permitted
d) There are ***Six (6)*** Questions in this paper
e) Answer Question ***One (1) (compulsory)*** and any other ***Three (3)*** questions with clear illustrations and diagrams where necessary
f) All ***Four (4)*** questions carry equal marks

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Graduate School of Business Examinations

QUESTION ONE

Linear programming is used in the evaluation of minimization of costs and maximization of profits. The table 1 provides data for the production of two types of phones.

Table 1: Production data

	Hours Required to Produce One Unit		
Department	**Samsung (X_1)**	**Huwei (X_2)**	**Available hours this Week**
Electronic	4	3	240
Assembly	2	1	100
Profit per unit	ZMK70	ZMK50	

Considering the following three constraints.

(i) Upper limits where the amount used is less than or equal to the amount of resource

(ii) Lower limits where the amount used is greater or equal to the amount of resource

(iii) Equalities where the amount used is equal to the amount of resource

Note: *Please Utilise the graph paper provided in your working!*

(a) Formulate the Objective function linear programming (LP) equation that maximizes the profits and the two LP equations that satisfies the first and second constraints **[5 Marks]**

(b) Using the graphical and the Iso-profit line method, determine the maximum profit line, the optimal solution point and the equation that yields the maximum profit **[10 Marks]**

(c) Using the Corner point method, determine the objective function value of each corner and find the optimal value and the corner where it will be located and the equation that yields the maximum profit **[10 Marks]**

QUESTION TWO

Operations Strategy is enhanced by Substitute (Lean) strategies in the quest to match capacity and demand for Operations.

(a) a) What are Substitute strategies? And how do they enhance the operations strategies. State and describe ***Five (5)*** Lean Principles and ***Seven Plus One (7 +1)*** Wastes (***Muda***) identified through the Lean Philosophy **[5 Marks]**

(b) Briefly explain the meaning of ***Kaizen, Kanban, Heinjunka, Jidoka, Judoka lean, Poka yoke*** as applied in lean philosophy and state and explain the ***5S*** used as a lean technique to minimise wastes and enhance value in Operations **[10 Marks]**

(c) What is ***JIT Philosophy*** and what are its Advantages and Disadvantages? What is ***Six-Sigma*** and how does it compliment the Operations Strategy. Identify and describe at least ***Three (3)*** Gurus behind the ***JIT and Six Sigma Philosophies*** **[10 Marks]**

QUESTION THREE

Operations strategy applies the law of 'Demand and Supply' and aims at Strategic fitting and reconciliation.

(a) Define and explain briefly the ***'Strategic fit'*** and ***'Strategic reconciliation'*** as harmonizing measures for Operations resources and market requirements. **[5 Marks]**

(b) An Operations Strategy is crafted to meet the demands of the market through prudent appropriation of operations resources. By use of diagram, state and explain some ***Four (4)*** Operations resources factors and ***Four (4)*** Market requirements factors responsible for influencing Overall Level of Capacity for operations **[10 Marks]**

(c) By use of diagram and through ***Three (3)*** themes; Operation resources, Strategic reconciliation and Market requirements; list and briefly explain ***Three (3)*** Operations resources, ***Two (2)*** Strategic reconciliatory factors and ***Three (3)*** Market requirements as positive and negative characteristics that can be exhibited in focused operations in both market and operation perspectives. **[10 Marks]**

QUESTION FOUR

Short Term Scheduling is a complimentary model to Aggregate Planning for Sales and Operations. Critical ratio technique, Johnson's rule and cyclical scheduling are dependable techniques used in planning for operations and processes. You as an Operations strategist has been crafted into a team to deal with a Company's persistent problem regarding prioritising jobs, sequencing jobs on two machines and scheduling services employees. With the data given in tables for all the ***Three (3)*** scenarios, deduce and elucidate the following:

Table 2: Critical ratio technique (Data) (*Note: Jobs with CR <1, are most critical*)

Job	Currently day 26	
	Due date	Workdays Remaining
A	31	4
B	29	5
C	28	2

(a) Apply the data provided in the table 2 as shown, employ the Critical Ratio (CR) technique to arrive at Critical ratios for jobs (A, B & C) and prioritise the Jobs in the order of their critical ratios. **[7 Marks]**

(b) With the data given in table 3 and by employing Johnson's rule technique *(observe the rules)* for scheduling jobs on two machines, undertake the following: (i) by use of a gnatt chart, schedule ***Five (5)*** Jobs (K, L, M, J, K) by also demonstrating the flow through the ***Two (2)*** machines. (ii) State and briefly describe the ***Three (3)*** limitations of Johnson's rule based on dispatching systems.

[8 Marks]

Table 3: Johnson rule technique (Data)

Job	Machine 1	Machine 2
K	7	4
L	5	8
M	10	6
J	12	9
K	9	14

(c) Table 4 provides Staff requirements data throughout the Week. (i) Using the Cyclical scheduling technique (*Scheduling for Services*), determine the Capacity (Employees) and Excess capacity (Employees). (ii) Through ***Three (3)*** main factors explain why Finite Capacity Scheduling is considered as a mitigative measure to Johnson's rule scheduling technique. **[10 Marks]**

Table 4: Cyclical Sequencing technique (Data)

Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Staff required	6	6	7	6	5	4	4

QUESTION FIVE

New Product or Service Development (NPD or NSD) requires a robust Design process management and strategy;

(a) State and explain briefly ***Five (5)*** major items for consideration in the management of the Design Process for New Product or Service Development (NPD or NSD). **[10 Marks]**

(b) Define and describe Redesign and Value Analysis (VA) and Value Engineering (VE). State and briefly explain the ***Five (5)*** stages/phases of Value Analysis (VA) and compare and contrast the Value Analysis (VA) and Value Engineering (VE) and explain their direct and indirect benefits. **[10 Marks]**

(c) As a concept of Designing for Operations, identify and briefly explain at least ***Five (5)*** key issues for critical considerations **[5 Marks]**

QUESTION SIX

As an Operations strategist for the Shoprite Zambia Chain of Stores, you have been assigned a task to undertake ***Aggregate Production Planning (APP)*** using the ***Transport Method (TM).*** Below are the details of demand and capacity to move Excess stocks (Capacity) to Shops of looming stockouts (Demand). The Excess Stocks are to move from ***Three (3)*** to ***Three (3)*** Towns are as shown Table 5:

Table 5: Capacity and Demand data

Shoprite Shops with excess stocks to be shipped to other stores (Capacity/Units)-Supply		**Shoprite Shops Requesting excess Stocks (Demand/Cost)- Demand Side**					
Towns	**Capacity in Units(K)**	**Monze Demand/Cost(K)**		**Mazabuka Demand/Cost**		**Kafue Demand/Cost(K)**	
Lusaka	**1100**	**1850**	50	**1350**	40	**1350**	30
Livingstone	**1850**		80		40		30
Kabwe	**1600**		90		70		50

(a) Use the North-West Corner Transportation Analysis table, allocate and calculate the resource Capacity, Demand and Cost of shipping Stocks from one town to another **[5 Marks]**

(b) Apply the Intuitive Lowest – Cost Method of Transportation Analysis table to get optimal cost results better that found in (a) **[8 Marks]**

(c) (i)Perfect your Aggregate Production (Supplying) Plan (APP) through the Stepping Stone Method of Transportation Analysis table to get Best shipping of stocks cost results better that found in (ii) State two issues in Transportation Modelling, there salient features, characteristics and how they could be mitigated **[12 Marks]**

END OF THE EXAMINATION

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THE UNIVERSITY OF ZAMBIA
GRADUATE SCHOOL OF BUSINESS

OPS-Postgraduate Sessional Examination

Monday 13th Septen ber 2021

OSM 6031: OPERATIONS STRATEGY FOR INDUSTRY (OSI)

INSTRUCTIONS **DURATION: 3 HOURS**

a) Ensure that you thoroughly read through the questions
b) Mobile (Cell) phones are not allowed
c) Scientific calculators are permitted
d) There are ***Six (6)*** Questions in this paper
e) Answer Question ***One (1) (compulsory)*** and any other ***Three (3)*** questions with clear illustrations and diagrams where necessary
f) All ***Four (4)*** questions carry equal marks

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Graduate School of Business Examinations

QUESTION ONE

Learning Curves are used to improve work productivity and quality, based on the premise that people and organisations become better at their tasks, as the tasks are repeated, time to produce a unit decreases as more units are produced, learning curves typically follow a negative exponential distribution and the rate of improvement decreases over time;

(a) By using the Arithmetic Approach (Simplest approach) determine the Hours N^{th} unit for N^{th} unit produced; 1, 2,4,8,16 and 32. The First Unit takes 120 labour-hours to be produced and present learning curve rate is 90% **[5 Marks]**

(b) Apply the Logarithmic approach to calculate the Labour – hours for any Unit T_N, namely T_2 up to T_5, if the First Unit (T_1) took 150 labour- hours and the Learning curve rate is 75% for b = -0.415. **[10 Marks]**

(c) With the Coefficient approach and the table given below/overleaf calculate (i) Labour – hours for T_2, T_3 & T_4, if the first (T_1) Ware house took 400,000 hours to complete and the learning curve rate is 70%. Find the Labour – hours for the same if the first Ware house (T_1) took 300, 000 hrs to complete and the learning curve rate being 85%. (ii) if the Labour cost is ZMK500 per hour what would be the total cost of producing units (T_1 toT_4) or all the Four (4) Ware houses in both cases? (iii) If the third Ware house takes 200,000 hours with learning factor 70% and 150,000 hours for the learning factor 85% what would be the new estimates in hours and monetary terms for the first house (T_1) in both cases **[10 Marks]**

See table below for Learning Curve- Coefficients

	70%		85%	
Unit Number (N)	**Unit time**	**Total time**	**Unit time**	**Total time**
1	1.000	1.000	1.000	1.000
2	0.700	1.700	0.850	1.850
3	0.568	2.268	0.773	2.623
4	0.490	2.758	0.723	3.346
5	0.437	3.195	0.686	4.032
10	0.306	4.932	0.583	7.116
20	0.248	6.274	0.530	9.861
25	0.214	7.407	0.495	12.402

QUESTION TWO

Operations strategy implementations and realisation has to embrace Trade-offs. Please explain the following;

(a) a) What are ***Trade - offs?*** and why are trade - offs important and inevitable in Operations formulation and implementation **[5 Marks]**

(b) Operations strategy employs targeting and operations focus concepts. Explain and describe Targeting and Operations focus concepts as employed in Operations strategy through ***Six (6)*** types of Focus. **[10 Marks]**

(c) What are the benefits and risks in Focus concepts and the effects of Drifting out of focus. Explain these through ***Three (3)*** typical benefits, ***Three (3)*** risk types and ***Five (5)*** reasons for drifting away **[10 Marks]**

QUESTION THREE

Operations strategy is not in itself an end to better Operations performance, continuous improvement is necessary;

(a) Identify and briefly explain ***Four (4)*** broad approaches to managing improvement of Operations strategy for better Operations performance **[10 Marks]**

(b) State and briefly describe the ***Two (2)*** improvement cycles (Models) that you would employ as techniques to enhance Operations strategy. **[7 Marks]**

(c) List and briefly elucidate ***Five (5)*** specific techniques that could be used to improve strategies of Operations management by stating these common techniques for process improvements diagrammatically. **[8 Marks]**

QUESTION FOUR

Decision tree technique is used by many Organisations to arrive at investment decisions for their operations. Decisions could be made under Uncertainty, Risk and Certainty conditions. An Organisation calls upon you as an Operations Strategist to help resolve a decision-making problem on whether to construct a large plant, construct a small plant or do nothing. Below is decision tree table showing the details under consideration.

Decision tree table

Alternatives	State of Nature	
	Favourable markets (ZMW)	Unfavourable markets (ZMW)
Construct large plant	1,200,000	-1,800,000
Construct small plant	1,000,000	-200,000
Do nothing	0	0
Probabilities	0.5	0.5

(a) Under uncertainty deduce the (i)Maximax choice (ii) Maximin choice (iii) Equally likely choice **[7 Marks]**

(b) Under risk conditions (i) calculate the Expected Monetary Value (EMV) for each alternative and (ii) state the best option **[10 Marks]**

(c) Under certainty conditions (i) determine the Expected Value of Perfect Information (EVPI) and (ii) the most a firm should pay for Perfect Information. (iii) Is the cost of Perfect Information worth it? **[8 Marks]]**

QUESTION FIVE

Operations Strategists do not just end at formulating a strategy but go beyond this exercise and develops various production plans also, such as the Capacity and Aggregate Production Planning (APP);

(a) Briefly state and explain ***Four (4)*** Capacity expansion strategies (methods) commonly considered for operations. What critical roles does Aggregate Production Planning (APP) play in capacity expansion and optimization **[5 Marks]**

(b) The following data was collected for Capacity/Demand planning for Tyre production (in days) and demand (in Numbers) ;

Monthly Forecasts

Month	Expected Demand (No.)	Production Days
Jan	11,070	27
Feb	8,970	23
Mar	9,880	26
April	14,250	25
May	17,000	25
June	13,200	24

Available Data

Inventory carrying cost = ZMW 50 per Unit per Month

Subcontracting cost per unit = ZMW 200 per Unit

Average pay rate = ZMW 100 per hour (ZMW 800 per day) and Overtime = ZMW 170 per hour (Above 8 hours per day)

Labour hours to produce a Unit = 1.6 hour per Unit

Cost of increasing daily production rate (Hiring and Training) = ZMW 3000

Cost of reducing daily production rate (Layoffs/Hiring) = ZMW 6000

Basic Cost of Production = Demand x 1.6 hours per Unit x ZMW 100/Hr

Note: *Workforce required to produce 500 Units per day = 100 Workers*

Ensure that you round – off your answers to the nearest whole Number

You are required to employ ***Three (3)*** Plans to deduce the optimal cost of Capacity-Demand satisfaction.

(i) **Employ Plan 1:** Level Production Strategy (Using Average Monthly Forecast and Constant Labour force) and **Plan 2:** Inhouse and Subcontracting to calculate the incurred costs **[10 Marks]**

(ii) **Employ Plan 3:** Chase Strategy (Basic production, Hire and Fire costs) to calculate the incurred cost and recommend the most cost effective plan out of the ***Three (3)*** and state why **[10 Marks]**

QUESTION SIX

Operations strategy applies the law of 'Demand and Supply' and aims at satisfying this law by balancing the equation;

(a) State and Explain in detail the two antagonistic sides taken into considerations for an effective operations strategy by also indicating the influencing factors on the two sides **[5 Marks]**

(b) An Operations Strategy is crafted on the premise of ***Five (5)*** Generic Performance objectives through ***Four (4)*** Capability areas for operations effectiveness. State and Explain these ***Five (5)*** Performance generic objectives and ***Four (4)*** Capability areas, including the issues considered for each capability area and measuring techniques employed for assessing the ***Five (5)*** performance generic objectives **[10 Marks]**

(c) As a Strategist you have been tasked to analyse Capacity performance for Two (2) Companies. ***Company A***'s Total Capacity of production is 9786 Hrs, Planned loss of 3762 Hrs and the Actual capacity of 5724 Hrs, while ***Company B***'s Total Capacity is also 9786 Hrs, Effective capacity of 7437 Hrs, with avoidable loss of 815 Hrs. (i) Calculate Efficiency and Utilisation for both companies (ii) Determine Avoidable loss for ***Company A*** and Planned loss for ***Company B***. (iii) what is your comment on these companies capacity performance **[10 Marks]**

END OF THE EXAMINATION

THE UNIVERSITY OF ZAMBIA

Graduate School of Business

UNIVERSITY POST GRADUATE EXAMINATIONS (SUP/DEF)

OSM 6272–DECISION BEHAVIOR ANALYSIS AND MODELING

MARCH 2021

TIME : Three (3) hours

INSTRUCTIONS : : Answer Question 1 and any other four questions

All Questions Carry Equal Marks

QUESTION 1

a) Explain the difference between:

i. Decisions under risk and ignorance

ii. Social choices and decisions made by individuals

8 marks

b) Consider the following game, in which both you and your opponent have two alternatives to choose between. The first number in each box represents your payoff, whereas the second number represents your opponents payoff. (Naturally, better payoffs are represented by higher numbers).

		Your Opponent	
		Alt 1	Alt 2
You	Alt 1	1, 1	0, 3
	Alt 2	3, 0	2, 2

What do you expect your opponent to do?

3 marks

What will you do?

3 marks

A friend offers you to invest all your savings, $100,000, in his dot comcompany. You find it very hard to understand the business plan hepresents to you, but your friend tells you that your $100,000 willcertainlybe worth at least $10M within two years. Naturally, yourfriend may be right, but he may also be wrong – you feel that you cannotestimate the probabilities for this. Consider the decision matrix below.What is wrong with this formalization?

	Friend is right	Friend is wrong
Invest	$10M	$0
Do not	$100,000	$100,000

6 marks

QUESTION 2

A financial advisor has recommended two possiblemutual funds for investment: Fund A and Fund B.The return that will be achieved by each of thesedepends on whether the economy is good, fair, orpoor. A payoff table has been constructed to illustratethis situation:

ALTERNATIVE	Good economy	Fair Economy	Poor Economy
	ZMK	ZMK	ZMK
Fund A	100,000	20,000	–50,000
Fund B	60,000	40,000	0
Probability	0.2	0.3	0.5

(a) Perform the necessary calculations to determine which of the two mutual funds is better. Which one should you choose to maximize the expected value?

10 marks

(b) Suppose there is question about the return of Fund A in a good economy. It could be higher or lower than ZMK100, 000. What value for this would cause a person to be indifferent between Fund A and Fund B (i.e., the EMVs would be the same)?

10 marks

QUESTION 3

A farmer in Mukushi owns 450 acres of land. He is going to plant each acre with wheat or maize. Each acre planted with wheat yields $2000 profit, requires three workers, and requires two tons of fertilizer. Each acre planted with corn yields $3000 profit, requires two workers, and requires four tons of fertilizer. There are currently 1000 workers and 1200 tons of fertilizer available. The aim of the farmer maximize the profit.

a) Formulate the(linear programing) LP problem

15 marks

b) Explain how you can solve it in excel.

5 marks

QUESTION 4

Beverly Mills has decided to lease a hybrid car to save on gasoline expenses and to do her part to help keep the environment clean. The car she selected is available from only one dealer in the local area, but that dealer has several leasing options to accommodate a variety of driving patterns. All the leases are for 3 years and require no money at the time of signing the lease. The first option has a monthly cost of $330, a total mileage allowance of 36,000 miles (an average of 12,000 miles per year), and a cost of $0.35 per mile for any miles over 36,000.

The following table summarizes each of the three lease options:

3-YEAR LEASE	MONTHLY COST	MILEAGE ALLOWANCE	COST PER EXCESS MILE
Option 1	$330	36,000	$0.35
Option 2	$380	45,000	$0.25
Option 3	$430	54,000	$0.15

Beverly has estimated that, during the 3 years of the lease, there is a 40% chance she will drive an average of 12,000 miles per year, a 30% chance she will drive an average of 15,000 miles per year, and a 30% chance that she will drive 18,000 miles per year. In evaluating these lease options, Beverly would like to keep her costs as low as possible.

a) Develop a payoff (cost) table for this situation.

6 marks

b) What decision would Beverly make if she were optimistic?

3 marks

c) What decision would Beverly make if she were pessimistic?

3 marks

d) What decision would Beverly make if she wanted to minimize her expected cost (monetary value)?

4 marks

e) Calculate the expected value of perfect information for this problem.

4 marks

QUESTION5

An author decides to write a workbook about how to pass the PMP® exam on the firsttry. Historical data indicates that, if the market is strong, gross sales will be $1 million.

If the market is weak, the gross sales will be only $50,000. There is a 70% chance of astrong market and a 30% chance of a weak market.

The author must decide whether to use a reputable publisher for the book or whetherto self-publish the book himself. If he self-publishes the book, all of the sales receiptsgo to the author. But if he uses an external publisher, the publisher pays a 10% royaltyon sales.

a) What is the expected value of the decision use a reputable publisher for the book?

[7 MARKS]

b) What is the expected value of the decision to self-publish the book himself?

[7 MARKS]

c) What is the most favorable decision based on the data

[2 MARKS]

d) Suppose your cost of self-publishing (i.e., materials, printing, marketing, advertising, etc.) is $600,000. What would be the most favorable decision?

[4 MARKS]

QUESTION6

A couple of entrepreneurial business students at the University of Zambia decided to put their education intopractice by developing a tutoring company for business students. While private tutoring was offered, it was determined that group tutoring before tests in the large statistics classes would be most beneficial. The students rented a room close to campus for ZMW 6000 for 3 hours. They developed handouts based on past tests, and these handouts (including color graphs) cost ZMW100 each. The tutor was paid ZMW500 per hour, for a total of ZMW1500 for each tutoring session.

(a) If students are charged ZMW400 to attend the session, how many students must enroll for the company to break even?

[10 MARKS]

(b) A somewhat smaller room is available for ZMW4000 for 3 hours. The company is considering this possibility. How would this affect the break-even point?

[10 MARKS]

Additional information

(3-1) EMV(alternative i) = $\Sigma X_i P(X_i)$
An equation that computes expected monetary value.

(3-2) EVwPI = Σ(best payoff in state of nature i)
$\times$ (probability of state of nature i)
An equation that computes the expected value with perfect information.

(3-3) EVPI = EVwPI − (best EMV)
An equation that computes the expected value of perfect information.

(3-4) EVSI = (EV with SI + cost) − (EV without SI)
An equation that computes the expected value (EV) of sample information (SI).

(3-5) Efficiency of sample information = $\frac{\text{EVSI}}{\text{EVPI}}100\%$
An equation that compares sample information to perfect information.

END OF EXAMINATION PAPER

THE UNIVERSITY OF ZAMBIA

Graduate School of Business

UNIVERSITY POST GRADUATE EXAMINATIONS

FIRST SEMESTER EXAMINATION – MAY 2014

OSM 6272–DECISION BEHAVIOR ANALYSIS AND MODELING

SEPTEMBER 2021

TIME : Three (3) hours

INSTRUCTIONS : : Answer any five questions

All Questions Carry Equal Marks

QUESTION 1

Ruth Jones' Heart Bypass Operation

Ruth Jones, a robust 50-year-old insurance adjuster living in the northern suburbs of Chicago, has been diagnosed by a University of Illinois cardiologist as having a defective heart valve. Although otherwise healthy, Jones' heart problem could prove fatal if left untreated.

Firm research data are not yet available to predict the likelihood of survival for a woman of Mrs. Jones' age and condition without surgery. Based on his own experience and recent medical journal articles, the cardiologist tells her that if she selects to avoid surgical treatment of the valve problem, chances of survival would be approximately as follows: only a 50 percent chance of living one year, a 20 percent chance of surviving for two years, a 20 percent rate for five years, and a 10 percent chance of living to age 58. He places her probability of survival beyond age 58 without a heart bypass to be extremely low.

The bypass operation, however, is a serious surgical procedure. Five percent of the patients succumb during the operation or its recovery stage, with an additional 45 percent dying during the first year. Twenty percent survive for 5 years, 13 percent survive for 10 years, and 8, 5, and 4 percent survive, respectively, for 15, 20, and 25 years.

a) Do you think Mrs. Jones should select the bypass operation? **Give the basis for you advice outline the decision process taken**

15 marks

b) What other factors might be considered?

5 Marks

QUESTION 2

A financial advisor has recommended two possible mutual funds for investment: Fund A and Fund B. The return that will be achieved by each of these depends on whether the economy is good, fair, or poor. A payoff table has been constructed to illustrate this situation:

ALTERNATIVE	Good economy	Fair Economy	Poor Economy
	ZMK	ZMK	ZMK
Fund A	100,000	20,000	–50,000
Fund B	60,000	40,000	0
Probability	0.2	0.3	0.5

(a) Perform the necessary calculations to determine which of the two mutual funds is better. Which one should you choose to maximize the expected value?

10 marks

(b) Suppose there is question about the return of Fund A in a good economy. It could be higher or lower than ZMK100, 000. What value for this would cause a person to be indifferent between Fund A and Fund B (i.e., the EMVs would be the same)?

10 marks

QUESTION 3

A farmer in Mkushi owns 450 acres of land. He is going to plant each acre with wheat or maize. Each acre planted with wheat yields $2000 profit, requires three workers, and requires two tons of fertilizer. Each acre planted with corn yields $3000 profit, requires two workers, and requires four tons of fertilizer. There are currently 1000 workers and 1200 tons of fertilizer available. The aim of the farmer maximize the profit.

a) Formulate the(linear programing) LP problem

15 marks

b) Explain how you can solve it in excel.

5 marks

QUESTION 4

Beverly Mills has decided to lease a hybrid car to save on gasoline expenses and to do her part to help keep the environment clean. The car she selected is available from only one dealer in the local area, but that dealer has several leasing options to accommodate a variety of driving patterns. All the leases are for 3 years and require no money at the time of signing the lease. The first option has a monthly cost of $330, a total mileage allowance of 36,000 miles (an average of 12,000 miles per year), and a cost of $0.35 per mile for any miles over 36,000.

The following table summarizes each of the three lease options:

3-YEAR LEASE	MONTHLY COST	MILEAGE ALLOWANCE	COST PER EXCESS MILE
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Beverly has estimated that, during the 3 years of the lease, there is a 40% chance she will drive an average of 12,000 miles per year, a 30% chance she will drive an average of 15,000 miles per year, and a 30% chance that she will drive 18,000 miles per year. In evaluating these lease options, Beverly would like to keep her costs as low as possible.

a) Develop a payoff (cost) table for this situation.

6 marks

b) What decision would Beverly make if she were optimistic?

3 marks

c) What decision would Beverly make if she were pessimistic?

3 marks

d) What decision would Beverly make if she wanted to minimize her expected cost (monetary value)?

4 marks

e) Calculate the expected value of perfect information for this problem.

4 marks

QUESTION 5

The Road agency is planning to build a new bridge and is considering two distinct configurations. The initial costs and annual costs and benefits for each bridge are shown in the following table. The bridges are each expected to give positive returns within 7 years and it is expected to minimum rate of return of 14%. Which would you choose and why.

	Alternative I	Alternative II
Initial cost	$ 5,000,000.00	$ 10,000,000.00
Annual maintenance and operating costs	$ 15,000.00	$ 10,000.00
Annual benefits	$ 1,200,000.00	$ 1,900,000.00
Annual benefits less costs	$ 1,185,000.00	$ 1,890,000.00

[20 MARKS]

QUESTION 6

A couple of entrepreneurial business students at the University of Zambia decided to put their education into practice by developing a tutoring company for business students. While private tutoring was offered, it was determined that group tutoring before tests in the large statistics classes would be most beneficial. The students rented a room close to campus for ZMW 6000 for 3 hours. They developed handouts based on past tests, and these handouts (including color graphs) cost ZMW100 each. The tutor was paid ZMW500 per hour, for a total of ZMW1500 for each tutoring session.

(a) If students are charged ZMW400 to attend the session, how many students must enroll for the company to break even?

[10 MARKS]

(b) A somewhat smaller room is available for ZMW4000 for 3 hours. The company is considering this possibility. How would this affect the break-even point?

[10 MARKS]

Additional information

(3-1) $\text{EMV(alternative } i) = \Sigma X_i P(X_i)$
An equation that computes expected monetary value.

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END OF EXAMINATION PAPER

THE UNIVERSITY OF ZAMBIA

Graduate School of Business

UNIVERSITY POST GRADUATE EXAMINATIONS

OSM 6272–DECISION BEHAVIOR ANALYSIS AND MODELING

September 2021 (Second exam)

TIME : Three (3) hours

INSTRUCTIONS : : Answer any five questions

All Questions Carry Equal Marks

QUESTION 1

a) Describe the six steps in decision making.

[8 MARKS]

b) Consider the following game, in which both you and your opponent have two alternatives to choose between. The first number in each box represents your payoff, whereas the second number represents your opponents payoff. (Naturally, better payoffs are represented by higher numbers).

		Your Opponent	
		Alt 1	Alt 2
You	Alt 1	1, 1	0, 3
	Alt 2	3, 0	2, 2

What do you expect your opponent to do?

[3 MARKS]

What will you do?

[3 MARKS]

A friend offers you to invest all your savings, $100,000, in his dot com company. You find it very hard to understand the business plan he presents to you, but your friend tells you that your $100,000 will certainly be worth at least $10M within two years. Naturally, your friend may be right, but he may also be wrong – you feel that you cannot estimate the probabilities for this. Consider the decision matrix below. What is wrong with this formalization?

	Friend is right	Friend is wrong
Invest	$10M	$0
Do not	$100,000	$100,000

[6 MARKS]

QUESTION 2

An author decides to write a workbook about how to pass the PMP® exam on the first try. Historical data indicates that, if the market is strong, gross sales will be $1 million.
If the market is weak, the gross sales will be only $50,000. There is a 70% chance of a strong market and a 30% chance of a weak market.
The author must decide whether to use a reputable publisher for the book or whether to self-publish the book himself. If he self-publishes the book, all of the sales receipts go to the author. But if he uses an external publisher, the publisher pays a 10% royalty on sales.

a) What is the expected value of the decision use a reputable publisher for the book?

[7 MARKS]

b) What is the expected value of the decision to self-publish the book himself?

[7 MARKS]

c) What is the most favorable decision based on the data

[2 MARKS]

d) Suppose your cost of self-publishing (i.e., materials, printing, marketing, advertising, etc.) is $600,000. What would be the most favorable decision?

[4 MARKS]

QUESTION 3

A retail store in Makeni, Lusaka, receives shipments of a particular product from Johannesburg City and Maputo. Let
x = number of units of the product received from Johannesburg City
y = number of units of the product received from Maputo. To prepare the problem for optimization in Excel you are required to answer the following questions.

a) Write an expression for the total number of units of the product received by the retail store in Makeni.

[4 MARKS]

b) Shipments from Johannesburg City cost $0.20 per unit, and shipments from Maputo cost $0.25 per unit. Develop an objective function representing the total cost of shipments to Makeni.

[4 MARKS]

c) Assuming the monthly demand at the retail store is 5000 units, develop a constraint that requires 5000 units to be shipped to Makeni.

[4 MARKS]

d) No more than 4000 units can be shipped from Johannesburg City, and no more than 3000 units can be shipped from Maputo in a month. Develop constraints to model this situation.

[4 MARKS]

e) Of course, negative amounts cannot be shipped. Combine the objective function and constraints developed to state a mathematical model for satisfying the demand at the Makeni retail store at minimum cost.

[4 MARKS]

QUESTION 4

Beverly Mills has decided to lease a hybrid car to save on gasoline expenses and to do her part to help keep the environment clean. The car she selected is available from only one dealer in the local area, but that dealer has several leasing options to accommodate a variety of driving patterns. All the leases are for 3 years and require no money at the time of signing the lease. The first option has a monthly cost of $330, a total mileage allowance of 36,000 miles (an average of 12,000 miles per year), and a cost of $0.35 per mile for any miles over 36,000.
The following table summarizes each of the three lease options:

3-YEAR LEASE	MONTHLY COST	MILEAGE ALLOWANCE	COST PER EXCESS MILE
Option 1	$330	36,000	$0.35
Option 2	$380	45,000	$0.25
Option 3	$430	54,000	$0.15

Beverly has estimated that, during the 3 years of the lease, there is a 40% chance she will drive an average of 12,000 miles per year, a 30% chance she will drive an average of 15,000 miles per year, and a 30% chance that she will drive 18,000 miles per year. In evaluating these lease options, Beverly would like to keep her costs as low as possible.

a) Develop a payoff (cost) table for this situation.

[6 MARKS]

b) What decision would Beverly make if she were optimistic?

[3 MARKS]

c) What decision would Beverly make if she were pessimistic?

[3 MARKS]

d) What decision would Beverly make if she wanted to minimize her expected cost (monetary value)?

[4 MARKS]

e) Calculate the expected value of perfect information for this problem.

[4 MARKS]

QUESTION 5

Gina Fox has started her own company, Foxy Shirts, which manufactures imprinted shirts for special occasions. Since she has just begun this operation, she rents the equipment from a local printing shop when necessary. The cost of using the equipment is ZMW3500. The materials used in one shirt cost $8, and Gina can sell these for ZMW150 each.

(a) If Gina sells 20 shirts, what will her total revenue be? What will her total variable cost be?

[10 MARKS]

(b) How many shirts must Gina sell to break even? What is the total revenue for this?

[10 MARKS]

QUESTION 6

Sowelo Corporation's decision to produce a new line of recreational products resulted in the need to construct either a small plant or a large plant. The best selection of plant size depends on how the marketplace reacts to the new product line. To conduct an analysis, marketing management has decided to view the possible long-run demand as low, medium, or high. The following payoff table shows the projected profit in millions of kwacha:

	Long-Run Demand		
Plant Size	Low	Medium	High
Small	150	200	200
Large	50	200	500

The probabilities for the states of nature are $P(low)$=0.65, $P(medium)$ = 0.15, and $P(High)$ = 0.20.

(a) What is the optimal decision strategy if perfect information were available?

[5 MARKS]

(b) Using the expected monitory value approach, what is the recommended decision without perfect information? What is its expected value?

[6 MARKS]

(c) What is the maximum that you should pay for information to improve your decision?

[4 MARKS]

(d) Define opportunity loss. What decision-making criteria are used with an opportunity loss table?

[5 MARKS]

Additional information

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