

**THE UNIVERSITY OF ZAMBIA**

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**SCHOOL OF AGRICULTURAL SCIENCES 2020/2021**

**INSTITUTE OF DISTANCE EDUCATION**

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**THE UNIVERSITY OF ZAMBIA  
SCHOOL OF AGRICULTURAL SCIENCES  
DEPARTMENT OF PLANT SCIENCE**

**PROGRAMME: BACHELOR OF SCIENCE IN AGRONOMY - SECOND YEAR**

**2020/2021 ACADEMIC YEAR, TERM I**

**AGC 2041: INTRODUCTORY CROP SCIENCE**

**FINAL EXAMINATION**

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**INSTRUCTIONS:**

- 1) ANSWER QUESTION 1 AND ANY OTHER 4 QUESTIONS
  - 2) ADDITIONAL INSTRUCTIONS ARE GIVEN FOR EACH QUESTION
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**Question 1: Indicate whether the following statements are true or false [20 marks]**

- a) Light duration and light intensity are the only aspects of light important in plant growth
- b) The phase of growth from seedling emergence to flowering and formation of fruits is called the reproductive phase
- c) One of the distinguishing features between damage caused by a plant pathogen compared to that caused by non-infectious constraint is that the symptoms from the former will have a pattern of distribution among plants in the field while that for the latter will be random.
- d) Plants from the family Fabaceae are important for firewood, agroforestry, green manure, fodder, feed and oil extraction.
- e) Respiration is the process by which plant cells break down carbohydrates and other biochemical molecules to produce energy for other biochemical processes.
- f) The nightshades plants are a family of flowering dicotyledonous plants that ranges from annual and perennial herbs to vines, shrubs and trees, and includes a number of agricultural crops, medicinal plants, spices, weeds, nitrogen-fixing plants and ornamentals.
- g) Phosphorus is required particularly by the growing tip of the maize plant, hence its importance in root growth
- h) Classical Plant Breeding refers to the use of DNA-based techniques to select, cross or introduce traits into a desired variety
- i) Sweet potatoes and Irish potatoes are stem tubers while cassava is a root tuber
- j) Management of insect pests requires deployment of strategies that kill or disrupt at least one of the four stages of insect growth, including eggs, spore, larva, pupa or adult stages.

**Question 2 [20 marks]**

Insects, weeds and plant diseases have to be effectively managed for a farmer to obtain high yields and minimise losses.

- a. List the categories of microbes that might cause diseases on plants [4 marks]
- b. For two of the microbe groups listed in 2a, give a symptom expected to be unique to that group [4 marks]
- c. Give four ways in which you protect crops against insect damage [4 marks]
- d. How does insect damage differ from damage caused by microbes? [4 marks]
- e. How do weeds cause damage to plants? [4 marks]

**Question 3 [20 marks]**

Crops require several factors for normal growth and attainment of their yield potential.

- i. List **five** factors necessary for plant growth
- ii. For each of the factors above **explain** the role of that factor in plant growth, elaborating on how too much or inadequate amounts or levels of that factor might impair plant growth.

**Question 4 [20 marks]**

In order for any cropping enterprise to hold promise for success, the planted crop must, in the very least, germinate, respire and photosynthesise.

- a) Define germination [1 mark]
- b) List in chronological order, the four steps involved in the process of germination [4 marks]
- c) Define photosynthesis and explain how it is important in plant growth [5 marks]
- d) Describe how environmental factors may interfere with photosynthesis [5 marks]
- e) What is the role of respiration in plant growth? [5 marks]

**Question 5 [20 marks]**

You have been given a mature plant with all its plant parts intact. This is a new crop that is not present in Zambia. You have been told that this plant is from the family fabaceae and not from the family poaceae.

- a. What morphological features, unique to fabaceae/leguminosae do you expect to see on this plant? [8 marks]
- b. How is this plant expected to be different morphologically from poaceae? [8 marks]
- c. What is the importance of crop classification? [4 marks]

**Question 6 [20 marks]**

Cassava is one of the very important crops grown in Zambia, with various benefits/uses. Cassava has an ability to yield fairly well even under conditions that are below ideal for maize production.

- i. Explain the importance of cassava in Zambia and globally. [4 marks]
- ii. Even though the crop can be grown in marginal conditions, nutrient deficiencies may still show, when growth conditions are below optimal. How would you know that your cassava plant is deficient in
  - a. Phosphorous [4 marks]
  - b. Nitrogen [4 marks]
  - c. Potassium [4 marks]
  - d. Deficiency of a named micronutrient [4 marks]

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**END OF EXAM**

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**THE UNIVERSITY OF ZAMBIA**  
**INSTITUTE OF DISTANCE EDUCATION**  
**UNIVERSITY FINAL EXAMINATIONS – SEPTEMBER 2021**  
**AGC 2042**  
**SUSTAINABLE CROP PRODUCTION**

**Time:** Three (3) hours

**Instructions:** Answer all Questions

Marks for each Question are as indicated.

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**Question 1**

As an Organic Farming Consultant, a group of farmers has approached you seeking to learn about sustainable ways of preparing the land for growing crops. What would be your advice concerning sustainable methods of land preparation? **20 marks**

**Question 2**

Organic matter is important in sustainable crop production. Discuss this statement, giving examples of practices which involve the growing of crops. **20 marks**

**Question 3**

- a. Bird damage in Sorghum (*Sorghum bicolor*) can cause serious yield losses at maturity. Discuss this statement giving remedial measures to mitigate the problem. **12 marks**
- b. In Groundnuts (*Arachis hypogaea*) production, spacing is related to the growth habit. Explain this statement giving relevant examples. **8 marks**

**Question 4**

- a. Define sustainability in relation to crop production. **2 marks**
- b. Discuss the importance of allelopathy when growing crops organically, giving relevant examples. **6 marks**

- c. List four (4) methods that are used to plant crops. Explain what each method involves. Give an example of a crop planted using the named methods. The crops you name should be different for each method. **12 marks**

**Question 5**

- a. Explain why heavy or waterlogged soils are generally not recommended for growing crops. **4 marks**
- b. Mention two (2) sustainable farming techniques that were used in a practical done during sowing of the Pumpkin seeds and in the tendering of the Banana orchard. Briefly explain each technique. **4 marks**
- c. In your answer in 5b., describe how each technique protects:
- a. The environment. **4 marks**
  - b. The ecosystem. **4 marks**
- d. Define the term "ecosystem." **4 marks**

**End of Examination**

**UNIVERSITY OF ZAMBIA**

**SCHOOL OF AGRICULTURAL SCIENCES**

**CROP SCIENCE DEPARTMENT**

**AGC 3042: Molecular Genetics and Plant Biotechnology**

**Final Exam**

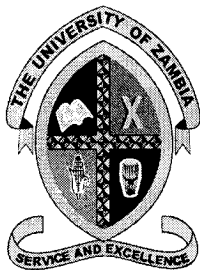
**INSTRUCTIONS**

**Answer all questions**

**Marks for each question are indicated in brackets.**

**TIME: 3 hours**

1. Describe the detailed structure of DNA [10 Marks]
2. Give a detailed description of the structure of a eukaryotic gene [10 Marks]
3. Give a detailed description of the Central Dogma of Molecular Biology? [10 Marks]
4. What is a Polymerase Chain Reaction (PCR)? [2 Marks]
5. Describe the three key steps/stages in a PCR (15 Marks)
6. List three examples of DNA markers that are used in plant breeding [3 Marks]
7. What is marker-assisted selection? [5 Marks]
8. List and describe in detail four applications of marker-assisted selection in plant breeding [20 Marks]
9. Compare and contrast conventional breeding and plant genetic engineering [10 Marks]
10. List three methods that can be used to transfer a gene from one species to another in genetic engineering [4 Marks]
11. Give a detailed description of a structure of a Ti Plasmid and how it is used in the development of genetically modified crops [10 Marks]
12. Write short notes on (i) embryo culture (ii) Meristem culture (iii) Anther/pollen culture [15 Marks]



**THE UNIVERSITY OF ZAMBIA  
INSTITUTE OF DISTANCE EDUCATION**

**FINAL EXAMINATIONS  
2020/21 ACADEMIC YEAR**

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<b><u>PROGRAMME:</u></b>	BACHELOR OF SCIENCE IN AGRICULTURAL ECONOMICS
<b><u>COURSE NAME:</u></b>	INTERMEDIATE MICROECONOMICS
<b><u>COURSE CODE:</u></b>	AGE 3031
<b><u>DURATION:</u></b>	THREE HOURS
<b><u>EXAMINER:</u></b>	DR CHEWE NKONDE

**INSTRUCTIONS TO CANDIDATE:**

1. This examination paper has four (4) questions. Answer all questions.
2. Points for each question are shown in parenthesis. Therefore, allocate your time appropriately.
3. Please be concise when answering the questions and write legibly.
4. Show all your work to earn you partial credit.

1. Consider a consumer with the following Cobb-Douglas utility function

$$U(X, Y) = X^{0.3}Y^{0.7}$$

Suppose the price of  $X$  is  $P_X$  and the price of  $Y$  is  $P_Y$  and the consumer's income is  $M$ :

- a) Assuming the consumer maximizes utility, derive the Marshallian demand function for good  $X$  and that for good  $Y$  using the Lagrangian approach. **[15 marks]**
- b) Are the two Marshallian demand functions for  $X$  and  $Y$  increasing, constant or decreasing functions of income? Explain and show your work. **[6 marks]**
- c) Derive the consumer's indirect utility function. **[4 marks]**

2. Consider a firm with the following Cobb-Douglas production function

$$q = 100K^{0.7}L^{0.8}$$

- a) Derive the following functions for the firm's production process:
- i. Average productivity of labour. **[2 marks]**
  - ii. Average productivity of capital. **[2 marks]**
  - iii. Marginal productivity of labour. **[2 marks]**
  - iv. Marginal productivity of capital. **[2 marks]**
  - v. Marginal rate of technical substitution. **[2 marks]**
- b) Suppose the wage rate for labour is  $w$  and the rental rate of capital is  $r$ , derive the optimal levels of  $K$  and  $L$  using the Lagrangian approach. **[15 marks]**

3. A monopolist has the possibility of discriminating between market 1 and 2 for a product where the demands are

$$Q_1 = 21 - 0.1P_1$$

$$Q_2 = 50 - 0.4P_2$$

The total cost for the firm of producing the product is

$$TC = 2000 + 10(Q_1 + Q_2)$$

Suppose the firm is able to implement a price discrimination strategy, which market will generate more profit for the firm? Show your work. **[25 marks]**

4. The domestic demand and supply for an agricultural product in Country A are represented by the following equations

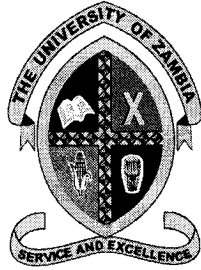
$$Q_d = 5000 - 100P$$

$$Q_s = 150P$$

Where  $Q_d$  is quantity demanded,  $Q_s$  is quantity supplied and  $P$  is price in \$ per unit.

- a) Compute the equilibrium price and quantity assuming the government in country A does not charge excise tax for production of the product. Show this equilibrium on a well-labelled demand and supply diagram. **[8 marks]**
- b) Suppose the government in country A decides to impose an excise tax of \$5 per unit of the product produced, compute the new equilibrium price and quantity. Show the new equilibrium on a well-labelled demand and supply diagram. **[8 marks]**
- c) Compute and interpret the welfare effects of the excise tax on relevant economic actors in country A. **[9 marks]**

----- END OF EXAM-----



**THE UNIVERSITY OF ZAMBIA  
INSTITUTE OF DISTANCE EDUCATION**

**FINAL EXAMINATIONS  
2020/21 ACADEMIC YEAR**

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<b><u>PROGRAMME:</u></b>	BACHELOR OF SCIENCE IN AGRICULTURAL ECONOMICS
<b><u>COURSE NAME:</u></b>	RESEARCH METHODOLOGY
<b><u>COURSE CODE:</u></b>	AGE 3381
<b><u>DURATION:</u></b>	THREE HOURS
<b><u>EXAMINER:</u></b>	DR REBECCA KIWANUKA-LUBINDA

**INSTRUCTIONS TO CANDIDATE:**

1. Answer all five (5) questions.
2. This examination is worth 100 marks. Marks for individual questions are indicated in parenthesis next to each question.
3. Please be concise when answering the questions and write legibly

1. a) Outline the advice you would give colleagues regarding the purpose of reviewing literature for their research project **(10 marks)**
- b) Outline the advice you would give your colleague concerning how to write the problem statement section of his research proposal **(10 marks)**

2. Distinguish between the following terms

- a. Snowballing and Purposive sampling. **(5 marks)**
- b. Probability and Non- probability sampling. **(5 marks)**
- c. As part of a case study research-based in an agribusiness firm with over 500 customers, you have been given access to an internal market research report, which the firm's marketing department undertook. The report presents results of a recent customer survey as percentages. The section in the report that describes how the data were collected and analysed is reproduced below:

Data were collected from a sample of current customers selected from our customer database. The data were collected using an online questionnaire designed and administered via the online software tool SurveyMonkey. Twenty-five customers responded, resulting in a 12.5 per cent response rate. These data were analysed using SPSS software. Additional qualitative data based on in-depth interviews with customers were also included.

Do you consider these data to be reliable? Give reasons for your answer **(10 marks)**

3. a) What are the advantages of using focus group discussions when collecting primary data? **(5 marks)**
- b) What are the key issues to consider when planning to use focus group discussions? **(5 marks)**
- c) Highlight the advantages of using key informant interviews? **(5 marks)**
- d) You have won a consultancy bid for a Non-Governmental Organization (NGO) interested in developing the mango value chain in Zambia. Subsequently, you are expected to present your research proposal to the NGO directors. As part of the presentation, you outline your methodology, which includes pilot testing your questionnaire. In the ensuing question and answer session, one of the directors asks you to justify the need for pretesting of the questionnaire, arguing that the pretesting can be left out due to time and monetary constraints.

List the arguments you would use to convince her that pretesting the questionnaire is essential for your methodology. **(5 marks)**

4. The following secondary data have been obtained from the Lubinda Ltd audited annual accounts:

<b>Year end</b>	<b>Income</b>	<b>Expenditure</b>
2012	11 000	9 500
2013	15 200	12 900
2014	17 050	14 000
2015	17 900	14 900
2016	19 000	16 100
2017	18 700	17 200
2018	17 100	18 100
2019	17 700	19 500
2020	19 900	20 000

- a) Which are the variables, and which are the cases? **(5 Marks)**
- b) What diagram would you use to emphasize the years with the lowest and highest income, give reasons for your choice? **(5 Marks)**
- c) Which measures of central tendency would you choose to describe the income over the period? Give reasons for your choice? **(5 Marks)**
- d) Which measures of dispersion would you choose to describe the income over the period and give reasons for your choice? **(5 Marks)**
5. a) Your research project supervisor has returned your draft research report with the suggestion that you make a clear distinction between your results/findings and your conclusions. How will you go about this? **(10 marks)**
- b) Why is it always considered good practice to acknowledge the limitations of your research in the project report? **(10 marks)**

----- **END OF EXAM**-----



**THE UNIVERSITY OF ZAMBIA**

UNIVERSITY EXAMINATIONS 2020/21

**AGG 3040- FINAL EXAMINATION**

INSTRUCTIONS: ANSWER ALL QUESTIONS AND WRITE LEGIBLY

TIME ALLOWED: 3 HOURS

TOTAL MARKS: 100

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1. Briefly define the following terms/phrases. Give examples for clarity where necessary

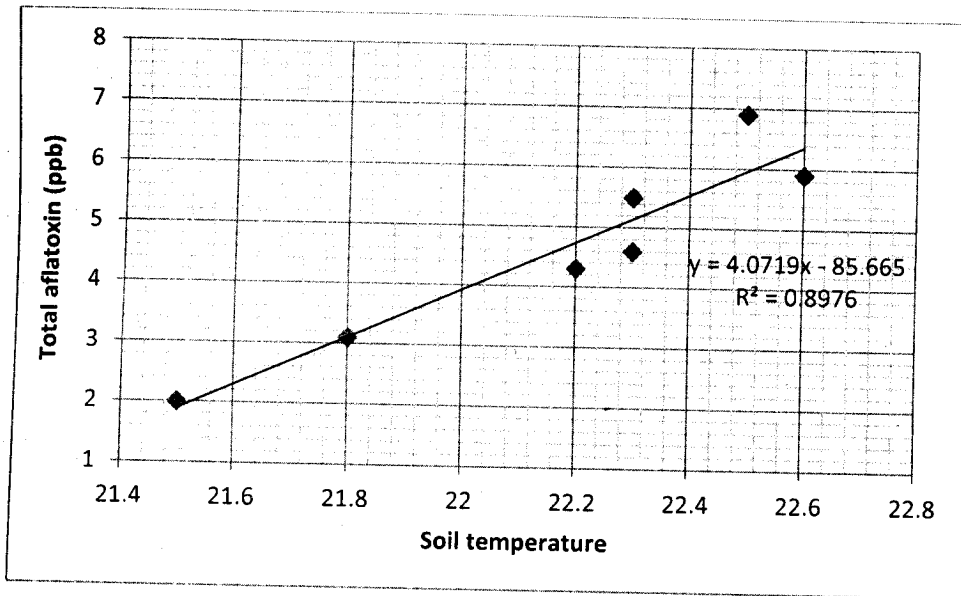
**[20 marks]:**

- a. Randomization
- b. p-value
- c. Outlier
- d. Blocking
- e. Hypothesis testing
- f. Data variability
- g. Noise
- h. Treatment
- i. Experimental unit
- j. Independent variable

2. A researcher investigated the effect of cleaning and sorting (removal of discolored and insect-damaged kernels) on total aflatoxin content ( $\mu\text{g}/\text{kg}$ ) in groundnuts. Using data in the table below show whether or not there is a significant difference in aflatoxin content before and after sorting the kernels **[20 marks]**.

Variety	Before sorting ( $\mu\text{g}/\text{kg}$ )	After sorting ( $\mu\text{g}/\text{kg}$ )
Luena	8.5	8.1
Luena	9.3	8.5
Luena	10.2	8.9
Luena	8.3	6.2
Luena	10.8	12.2
Luena	11.5	12
Luena	8.8	8.8
Luena	12.5	6.3
Luena	10.9	9.3

3. An agronomy student wanted to evaluate the effects of chemical fertilizer and planting spacing on the kernel yield of a selected groundnut variety. She decided to apply the fertilizer at rates of 0, 100 and 150 kg/ha to groundnuts planted at three planting densities as follows: 60 cm x 20 cm, 60 cm x 10 cm, and 60 cm x 5 cm, inter row by intra row spacing, respectively. The experimental site is a field with uniform soil conditions.
- Identify the independent and dependent variables in this experiment. [3 marks]
  - With respect to the fertilizer, state the null and alternative hypotheses [4 marks]
  - Suggest the most appropriate experimental design for this study? Give reasons for your answer. [5 marks]
  - Calculate the number of possible treatment combinations are there in this experiment? [2 marks]
  - If the treatments are applied in triplicates, how many experimental units would she need for the experiment? [3 marks]
  - Briefly explain the term interaction in the context of this experiment. [2 marks]
4. The graph below shows the relationship between soil temperature during pod-development and total aflatoxin content in groundnut kernels. Using the information provided in the graph, answer the following questions:



- Identify the independent and the dependent variables in this study [2 marks]
  - Interpret the equation that describes the relationship between the two variables [6 marks]
  - Interpret the  $R^2$  valued displayed on the graph [2 marks]
  - Calculate the correlation coefficient and interpret it [4 marks]
  - Calculate the expected total aflatoxin content when soil temperature is at 22.1 °C [2 marks]
  - Calculate the expected change in total aflatoxin content for a 1 °C change in temperature [2 marks]
  - Briefly explain why the constant (beta zero) would not have a meaningful interpretation in this and many other situations. [2 marks]
5. A fertilizer company would like to promote its new brands of basal dressing fertilizer in your locality. As an agronomist working in the area, you have been tasked to conduct a study to compare maize yields using 4 brands of this fertilizer. One of the 4 brands of fertilizer is Compound D, which you are using as “reference material”. The other three brands (A, B and C) are new on the market. This study is to be conducted in a field experiment. The site for the experiment can be sub-divided into three sections of equal sizes according to current land use- improved fallow, maize monocrop and virgin, respectively.

- a. What term is used in reference to the “reference material” used in an experiment? [1 mark]
- b. Identify the independent and dependent variables in this experiment [2 marks].
- c. What would be the most appropriate design for this experiment? Give reasons for your answer [5 marks].
- d. How many treatments are in this experiment? [2 marks]
- e. If the treatments are applied 4 replicates, how many experimental units would you need? [2 marks]
- f. Draw a clearly labeled field layout for this experiment [6 marks]
- g. Briefly explain randomization in the context of this experiment [2 marks]

### IMPORTANT FORMULAE/INFORMATION

$$t = \frac{\bar{x} - \mu}{\hat{\sigma} / \sqrt{n}}$$

$$df = n - 1$$

$$t = \frac{\bar{x}_D - \mu_0}{s_D / \sqrt{n}}$$

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s_p \sqrt{\frac{2}{n}}}$$

$$s_p = \sqrt{\frac{s_{x_1}^2 + s_{x_2}^2}{2}}$$

$$df = 2n - 2$$

$$F = \frac{MSTr}{MSE}$$

Standard t-value (alpha = 0.05, df = 9, = **1.833**)

Standard t-value (alpha = 0.05, df = 8, = **1.860**)

Standard t-value (alpha = 0.05, df = 7, = **1.895**)

**END OF EXAMINATION!**



UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS – SEPTEMBER, 2021

AGS 3842 MODELING ENVIRONMENTAL PROCESSES

**Time:** Three (3) Hours

**Instructions:** Answer ALL Questions

Total Marks: 100

**Non-programmable** calculators are allowed

1. Below is a table showing soil data for a field trial at UNZA's Liempe Farm. Study the data and answer the questions that follow. [30 Marks]

1Bar			15Bar			Mass of dry soil + ring	Mass of empty ring	volume of soil
Empty can	wet soil + can	dry soil+can	Empty can	wet soil + can	dry soil+can			
g	g	g	g	g	g	g	g	cm <sup>3</sup>
19.52	38.62	36.03	19.52	41.85	39.95	183.18	71.9	79.5

- a. Calculate the bulk density [2 Marks]
- b. Calculate the gravimetric and volumetric moisture contents at FC and PWP. [7 Marks]
- a. Calculate the depth of water considering a rooting depth of 0.4 m. [4 Marks]
- b. As a modeler, you want to design an irrigation system for a crop with an average water requirement of 0.12 cm/day, how long will it take for the moisture content in soil profile to drop to an amount equal to PWP for the two scenarios above? [7 Marks]
- c. Assuming you receive 3 mm of rainfall between two irrigation events, how much water will you add during the next irrigation event? [5 Marks]
- d. Briefly describe how you would validate the model above. [5 Marks]

2. With regards to modelling; [25 Marks]
- a. Define a model [3 Marks]
  - b. Describe and explain the three types of models [12 Marks]
  - c. Explain the importance of modeling [5 Marks]
  - d. Describe model calibration [5 Marks]
3. The transport of solutes in a soil is important in translocation of nutrient elements towards the plant root system. [20 Marks]
- a. **With the aid of a diagram**, describe and explain the three main methods by which soil solutes are transported; [15 Mark]
  - b. Rank the three solute transport methods above in order of increasing volume of solute transported and for each one state whether the movement occurs under saturated or unsaturated conditions. [5 Marks]
4. **AquaCrop** is one of the classical and widely used model in crop production and environmental management developed by the Food and Agriculture Organisation (FAO) of the United Nations. It describes the interactions between the plant and the soil through the extraction of water and nutrients from the root zone by plants. [25 Marks]
- a. Describe and explain the following four steps which **AquaCrop** uses to simulate the final crop yield;
    - i. Development of green canopy cover (**CC**) [5 Marks]
    - ii. Crop transpiration (**Tr**) [5 Marks]
    - iii. Above-ground biomass (**B**) [5 Marks]
    - iv. Crop yield (**Y**) [5 Marks]
  - b. Explain how you would classify this model. [5 Marks]

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**END OF EXAMINATION**



**THE UNIVERSITY OF ZAMBIA**  
**INSTITUTE OF DISTANCE EDUCATION**

**2021/2022 ACADEMIC YEAR FINAL EXAMINATION SEPTEMBER 2021**

**COURSE DPE 1020 FUNDAMNETALS OF NUTRITION SCIENCE**

**TIME: THREE (3) HOUR**

**MARKS: 100**

**INSTRUCTIONS**

1. Read the instructions carefully before you start answering the questions. This paper has **TWO** sections A and B.
  2. Section A carries **60 marks**, section B carries **40 marks**.
  3. Use the booklet provided for your answers.
  4. Credit will be awarded to legible, good and orderly presentation of work.
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**SECTION A (60 MARKS)**

**Answer All the Questions in this Section.**

1. Define nutrition. [ 1 Mark]
2. Mention the four (4) common methods used to assess nutrition status of an individual or community. [ 2 marks]
3. State three (3) nutrients which provide the body with energy. [2 marks]
  - a) State the energy value of 1g of each of the nutrients named above in 3. [2 marks]
4. Proteins are made from amino acids. All amino acids contain the elements carbon and hydrogen. Give two (2) other elements found in amino acids. [1 mark]
5. Name one (1) animal food high in protein and one (1) non-animal food high in protein. [ 2 marks]
6. List three (3) functions of fat in the body. [ 3 marks]
7. Outline two (2) functions of protein. [ 2 marks]
8. What is dietary fibre?[ 1 mark]
9. Give two (2) functions of water in the human body. [ 2 marks]
10. List four(4) vitamins that belong to the B- complex group. [ 2 marks]
11. State six health problems that an overweight person may suffer from.[ 3 marks]
12. Carbohydrates can be classified as monosaccharides, disaccharides or polysaccharides.

Complete the table, identifying types and food sources. [ 10 mark]

	Monosaccharides	Disaccharides	Polysaccharides
Types	a) -----	d) -----	g)-----
	b)-----	e)-----	h)-----
	c) galactose	f)-----	
Food sources	j) -----	g)-----	k)-----

13. Minerals are essential micronutrients. Two of these are calcium and iodine. Write;[ 4 marks]
  - a) Calcium Function: ----- Good food source: -----
  - b) Iodine Function:----- Good food source: -----

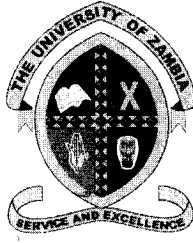
14. Iron is another essential micronutrient. Name the condition caused by a lack of iron in the diet. Give two symptoms of this condition. [ 3 marks]
15. Describe two different ways in which the body uses energy. [ 4 marks]
16. Define the term energy balance. How does Body Mass Index (BMI) indicate if an individual is maintaining an energy balance?[ 3 marks]
17. List two reasons individuals have different energy requirements.[ 2 marks]
18. List the functions of Vitamin C.[ 2 marks]
19. Give a brief account on Anorexia Nervosa. [4 marks]
20. What are the causes of malnutrition?[ 2marks]
21. Explain the nutritional and food requirements of a pregnant woman.[ 3 marks]

### **SECTION B (40 MARKS)**

Answer only **Two** Questions in this section. Each Question Carries **20 Marks**

1. Explain any four tools for studying nutrition. [ 20 marks]
2. Describe the process/ flow of digestion in GI tract. Mention the names of enzymes responsible for digestion of different nutrients. [20 marks]
3. Explain Vitamin A with reference to;
  - a) Functions
  - b) Deficiency
  - c) Requirement
  - d) Sources [ 20 marks]
4. Give an account of causes, symptoms and treatment of Kwashiorkor. [ 20 marks]

***END OF THE EXAMINATION!!!***



**THE UNIVERSITY OF ZAMBIA**

**INSTITUTE OF DISTANCE EDUCATION**

**2021/2022 ACADEMIC YEAR FINAL EXAMINATIONS**

**COURSE: DPE 3020-COMMUNITY HEALTH AND NUTRITION**

**TIME: THREE (3) HOURS**

**MARKS: 100**

**INSTRUCTIONS**

1. Read the instructions carefully before you start answering the questions. This paper has **two (2)** sections **A and B**
  2. **Section A** carries **20 marks** while **section B** carries **80 marks**
  3. Use the booklet provided for section B.
  4. Credit will be awarded to legible, good and orderly presentation of work.
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**Section A (20 Marks)**

**Answer All the Questions in this Section.**

1. What do the four Ps stand for.....
  - a) Product, Price, Place, Promotion
  - b) Price, Primary, Place, Promotion
  - c) Product, Plate, Price, Product
  - d) Place, Plate, Primary, Price
2. The following are methods of instruction in health education **except** one.
  - a) Demonstration
  - b) Role play
  - c) Health talks
  - d) Books
3. Nutrition health status is the physical health of a person as it results from consumption and .....of the food in the body.
  - a) Metabolism
  - b) Utilization
  - c) Balancing
  - d) Breaking down
4. There are..... sources of information about nutrition problems in a country or in a specific community.
  - a) 6
  - b) 3
  - c) 4
  - d) 2
5. Are qualities of a successful community nutritionist **except** one.
  - a) Flexible
  - b) Innovative/creative
  - c) Versatile
  - d) Kind

6. How would you define Therapeutic Diet?
  - a) Is a regular diet that is adjusted or tailored to meet special nutritional needs.
  - b) Meal for the sick
  - c) Special diets given to the invalids.
  - d) Every sick person is able to get enough food throughout the year to satisfy his or her nutritional needs.
7. Place of work for a nutritionist include hospitals, clinics, medical schools, work sites, universities, college, schools, community health centres and .....
  - a) Villages
  - b) Day care centres
  - c) Individual homes
  - d) None of the above
8. What liver disease is associated with alcohol consumption?
  - a) Diabetes
  - b) Asthma
  - c) Cirrhosis
  - d) Hepatitis
9. ....is the field of nursing that has the family and the community as patients with activities taking place in the community and not in the hospital.
  - a) Public nursing
  - b) Community nutrition nursing
  - c) Health nursing
  - d) Community health nursing
10. In..... first nutritionist was employed in New York and Massachusetts in the state health department.
  - a) 1902
  - b) 1946
  - c) 1917
  - d) 1921

11. Define Community nutrition.

- a) Community nutrition is a discipline that strives to improve the health, nutrition and wellbeing of individual and group within communities.
- b) Community nutrition is the food given to people in the community.
- c) Community nutrition is the programme that solves people's nutrition problems in the community.
- d) Community nutrition is a health programme that identifies people's needs in the community.

12. The methods most frequently used to collect data for monitoring and evaluation are....., key informant interview, focus groups surveys and direct measurement.

- a) Demonstrations
- b) Observation
- c) Lecturing
- d) Telephone interview

13. To be..... means that Food is available, Food is affordable, Food is utilized.

- a) Health secure
- b) Nutritional secure
- c) Community secure
- d) Food secure

14. The..... is the portion of the earth in which biotic organisms exist and interact with one another and with their abiotic environment.

- a) Spheres
- b) Hydrosphere
- c) Lithosphere
- d) Biosphere.

15. State the origin of primary health care.

- a) The hospital
- b) The community
- c) The village
- d) The school

16. Community..... and.....is referred to as needs assessment.
- a) Analysis, diagnosis
  - b) Analysis, monitoring
  - c) Diagnosis, evaluation
  - d) Programme, monitoring
17. .... is a disease in which plaques builds up inside the arteries.
- a) Angina
  - b) Rheumatic heart
  - c) Atherosclerosis
  - d) Dysphagia
18. There are three ways in which socialization occurs: by observation, by the way others treat us and .....
- a) Story telling
  - b) By visiting museums
  - c) By direct instruction
  - d) By studying the history of the family
19. State at least three ways in which people pay for goods and services.
- a) Hire purchase, cash, pick and pay
  - b) Debit or Laser card, village bank, Buying on credit
  - c) Credit cards, Debit or Laser card, interest rate
  - d) Cash, Credit cards, Hire purchase
20. What are symptoms of Nephritic syndrome?
- a) Oedema and proteinuria, fatigue, excessive sweating, anaemia, and unexplained weight loss
  - b) Albuminuria, haematuria, oedema and proteinuria, hypertension and diminished renal functions.
  - c) Fever, pain, dry mouth, diarrhoea vomiting, and depression.
  - d) Fatigue, unexplained weight loss, polydipsia, Excessive eating (polyphagia)

## **SECTION B (80 MARKS)**

There are **eight (8)** questions in this section. Answer any **four (4)**.

1. Explain how global issues affect nutrition.(20 marks)
2. Blocks to food path are factors that can prevent people from having enough food or not having food at all. Discuss. (20 marks)
3. You have been invited at Home Economics Association of Zambia (HEAZ) provincial conference to present a paper on how your school implements health education and promotion programmes (20 marks)
4. Social marketing is a technique which aims to raise public awareness and provide advice on health issues. Explain how this technique can be used in health education and health promotion.(20 marks)
5. What factors do people consider when choosing a site or house in your locality?(20 marks)
6. Alcohol has detrimental effects on a human body where by nutrients ingested cannot be absorbed and used by the body. Discuss. ( 20 marks)
7. Describe how you would assess the nutritional status of individuals in your community.(20 marks)
8. Discuss theProblems with feeding programmes and food aid.(20 marks)