THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE EXAM PAPERS 1ST AND 2ND SEMESTER 2012/2013

AGA 342.....Principles of Genetics

AGA 4301.....Beef and Small ruminant production (Deferred Exam)

AGA 4301.....Beef and Small ruminant production

DHM 101.....Herd Management

DHM 101.....Herd Management

DHM 111.....Introductory Bovine Anatomy

DHM112.....Bovine Anatomy and Reproduction

DHM 132.....Livestock Genetics and Breeding

DHM 132.....Livestock Genetics and Breeding (Supplementary)

DHM 202.....Herd Health and Production in the tropics

DHM212.....Beef/ Dairy Nutrition

DHM 213.....Mechanization of Dairy Farms

DHM 222.....Dairy Housing and Farmstead Design +Beef/Dairy industry and Applications (modules 16 and 17)

DHM 223.....Bovine Reproduction

DLD 111.....General Pathology

DLD 112.....Systematic Pathology

DLD 131.....General Microbiology

DLD 141.....General Parasitology

DLD 221.....Immunodiagnostic

DLD 231.....Diagnostic Microbiology 1

DLD 241.....Diagnostic Parasitology

DLD 252.....Laboratory Management

VMB 312.....Veterinary Anatomy

VMB 332.....Veterinary Biochemistry

VMB342.....Veterinary Physiology

VMC 512.....Clinical Veterinary Medicine II

VMC 512.....Veterinary Clinical Medicine II

VMC 522.....Veterinary Operative Surgery I

VMC 532.....Theriogenology I

VMC 612.....Clinical Veterinary Medicine IV

VMC 622.....Veterinary Operative Surgery III

VMD 532.....Veterinary Economics

VMD 512.....Veterinary Clinical Pathology

VMD 642.....Veterinary Extension and Jurisprudence

VMP 412.....Systematic Veterinary Pathology

VMP 412.....Systematic Veterinary Pathology

VMP 432.....Veterinary Virology and Mycology

VMP 442.....Veterinary Parasitology

VMP 442.....Veterinary Parasitology (Deferred)

THE UNIVERSITY OF ZAMBIA

SECOND SEMESTER UNIVERSITY EXAMINATIONS – AUGUST, 2013

AGA: 342 - Principles of Genetics.

TIME: THREE (3) HOURS

INSTRUCTIONS:

a) Answer FIVE (5) questions only.
b) All calculations must be clearly shown.
c) All questions carry equal marks of 20 marks each.

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1. Explain the relationship between the following terms:
   a. RNA and DNA.
   b. RNA and Transcription.
   c. Gene expression and trait.
   d. Mutation and allele.

2. Briefly answer the following questions:
   a. With regard to sister chromatids, which phase of mitosis is the organization phase and which is the separation phase.
   b. Describe the key events during meiosis that results in 50% reduction of genetic material per cell.
   c. Why is it necessary that the chromosomes condense during mitosis and meiosis? What do you think might happen if the chromosomes were not condensed?
   d. The arrangement of homologues chromosomes during metaphase of meiosis 1 is a random process. Explain what this means.

3. What are the primary interests of researchers working in the following fields of genetics?
   a. Transmission genetics
   b. Molecular genetics
   c. Population genetics.
   d. Gene expression that occurs at molecular level

4. If the ability to roll your tongue is inherited as a recessive trait and the frequency of the rolling allele is approximately 0.6 and the dominant (non-rolling) allele is 0.4, what is the frequency of individuals who can roll their tongues?

5. What is the difference between broad-sense heritability and narrow-sense heritability? Why is narrow-sense heritability a useful concept in the field of Agriculture genetics?

6. State the Hardy-Weinberg Law. In a randomly mating and closed population, it was found that the frequencies of AA = 30%, Aa = 40% and aa = 30%. Is this population at Hardy Weinberg equilibrium?

THANK YOU

UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF PARACLINICAL STDIES

2012/13 ACADEMIC YEAR SECOND SEMESTER DEFERRED EXAMINATIONS.

AGA: 4301: Beef and Small Ruminant Production.

TIME: THREE HOURS

INSTRUCTIONS:

1. Please read the instructions.
2. Answer **FIVE** (5) questions only.
3. All questions carry equal marks of 20 marks each.

1

a. Briefly describe how Zambian indigenous cattle breeds are better adapted to tropical climatic conditions than the imported temperate breeds found in commercial beef ranches.

b. Explain the conditions that would make you, as a District Veterinary Officer (DVO), recommend early breeding of heifers.

20 Marks

2 Explain how the following affect re - breeding in beef cattle;

a. Nutrition.
b. Stockmanship.
c. Diseases.
d. Breed.

20 Marks

3 List the:

a. Advantages and disadvantages of summer breeding system of beef cattle in Zambia.
b. Non infectious causes of infertility in beef cattle.

20 Marks

4 Briefly, Describe once and twice per breeding in sheep and goat production. Include advantages and disadvantages.

20 Marks

5 In Zambia, cattle are finished in feedlots using concentrate feeds. This is usually done in the dry season. Give reasons why this is carried out during this time of the year.

20 Marks

6

a. Write short notes on any four Key considerations in organic livestock production.
b. List the main steps followed in accreditation of organic livestock products

20 Marks

UNIVERSITY OF ZAMBIA

SECOND SEMESTER EXAMINATIONS – AUGUST 2013

BEEF AND SMALL RUMINANT PRODUCTION (AGA: 4301)

TIME: THREE (3) HOURS

ANSWER: ALL FIVE QUESTIONS ONLY

ALL QUESTIONS CARRY EQUAL MARKS

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1. (a) Re-breeding in beef cattle is not influenced by any one single factor for the overall reproduction performance of a beef herd. List at least five factors that affect re-breeding in beef cattle **(10 marks).**

   (b) Give a brief explanation of how these factors affect re-breeding in beef cattle. Explain the conditions that need to be met before early breeding of heifers is recommended in a beef herd **(10 marks)**.

2. (a) Indigenous cattle breeds enter the fattening phase of growth at an earlier stage of growth than exotic breeds. How do sex and feeding levels/nutrition affect the growth of body tissues in cattle **(10 marks)**.

   (b) Briefly illustrate how "grading up breeding system" in livestock breed improvement is carried out **(10 marks)**.

PLEASE TURN OVER

3. Write short notes on **ALL** of the following:
   (a) Non Protein Nitrogen Feeds (NPN) for beef cattle **(5 marks)**.
   (b) Methods of controlling urea intake **(5 marks)**.
   (c) Factors affecting calf birth weight **(5 marks)**.
   (d) Role of hormones in parturition **(5 marks)**.

4. Briefly discuss **ALL** of the following:
   (a) Organic livestock production system **(5 marks)**.
   (b) Important considerations in organic animal husbandry that producers and other stakeholders need to take into account **(5 marks)**.
   (c) Challenges developing countries face in developing organic livestock production **(10 marks)**.

5. Explain the main challenges associated with sheep and goat production in Zambia. How would you overcome these challenges? **(20 marks)**.

6. Write short notes on **ALL** of the following:
   (a) Three times breeding of sheep and goats in two years **(5 marks)**.
   (b) Flushing of ewes before tupping season **(5 marks)**.
   (c) Reducing lamb and Kid mortality **(5 marks)**.
   (d) Suitable dairy and beef goat breeds for Southern African climatic conditions **(5 marks)**.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
INSTITUTE OF DISTANCE EDUCATION

DIPLOMA IN HERD HEALTH AND PRODUCTION IN THE TROPICS

FIRST YEAR SECOND SEMESTER 2013 EXAMINATION

COURSE	: DHM 101 HERD MANAGEMENT
DATE	: 28TH NOVEMBER 2013
DURATION	: 3 HOURS
INSTRUCTIONS	: ANSWER ANY FIVE QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS ANSWER EACH SECTION IN SEPARATE SET OF ANSWER BOOKLETS

SECTION A

1. write short but concise notes on four (4) of the following:
   a) Aetiology and clinical signs of bovine babesiosis (5 **marks**)
   b) Diagnosis and treatment of Dermatophilosis (5 **marks**)
   c) Epidemiology and control of theileriosis (5 **marks**)
   d) Aetiology and distribution of Foot and Mouth Disease in Zambia (5 **marks**)
   e) Epidemiology and control of Contagious bovine pleuropneumonia in Zambia (5 **marks**)

2. Sound immunological responses are vital for protection of animals from infectious diseases. Briefly describe the following:
   a) Primary and Secondary immunologic organs (**5 marks**)
   b) Monocyte maturation and their tissue distribution (**5 marks**)
   c) Components of innate and adaptive immune responses (**5 marks**)
   d) Major cells of the immune system and their functions (**5 marks**)

3. The control of animal disease outbreaks requires application of either one or a combination of disease control strategies. Define and briefly discuss the application of the following disease control strategies:
   a) Livestock movement control (**4 marks**)
   b) Vaccination (**4 marks**)
   c) Test and slaughter policy (**4 marks**)
   d) Disinfection (**4 marks**)
   e) Vector control (**4 marks**)

SECTION B

3 To be efficient and profitable, herd operations require good and simple management practices that will be followed.

a). What is herd management? (6 marks)

b). What are the important components of management of different herds of livestock(14 marks).

4 It is very important to have appropriate skills in herd management in order to ensure profitability in the operation of the beef/dairy enterprises.

a). Define skills in relation to management of a herd **(4 marks).**

b). Explain the different types of general basic skills required to manage a herd **(6 marks).**

c). Describe the specific types of skills needed for the various types of herd management **(10 marks).**

5. A variety of herd management tools and solutions available on the market today make it possible for farm staff and managers to get complete control of their herd and thus expedite decision making, save time and money and enhance the overall performance of their farm through automation.

a). Define what an automated production systems is and give examples **(5 marks).**

b). Describe most important features of the automatic system **(5 marks).**

c). Discuss benefits as well as the problems associated with automated systems **(10 marks).**

THE END

THE UNIVERSITY OF ZAMBIA
INSTITUTE OF DISTANCE EDUCATION

DIPLOMA IN HERD HEALTH AND PRODUCTION IN THE TROPICS

FIRST YEAR SECOND SEMESTER 2013 EXAMINATION

COURSE	:	**DHM 101- HERD MANAGEMENT SKILLS**
DATE	:	**18TH SEPTEMBER, 2013**
DURATION	:	**3 HOURS**
INSTRUCTIONS	:	**ANSWER ANY FIVE QUESTIONS.** **ALL QUESTIONS CARRY EQUAL MARKS** **ANSWER EACH SECTION IN SEPARATE SET OF ANSWER BOOKLETS**

SECTION A

1. Write short but concise notes on four (4) of the following:
   a) Aetiology and clinical signs of bovine babesiosis (4 **marks**)
   b) Diagnosis and treatment of Dermatophilosis (4 **marks**)
   c) Epidemiology and control of theileriosis (**4marks**)
   d) Aetiology and distribution of Foot and Mouth Disease in Zambia (**4 marks**)
   e) Epidemiology and control of Contagious bovine pleuropneumonia in Zambia (**4 marks**)

2. Sound immunological responses are vital for protection of animals from infectious diseases. Briefly describe the following:
   a) Primary and Secondary immunologic organs (**5 marks**)
   b) Monocyte maturation and their tissue distribution (**5 marks**)
   c) Components of innate and adaptive immune responses (**5 marks**)
   d) Major cells of the immune system and their functions (**5 marks**)

3. The control of animal disease outbreaks requires application of either one or a combination of disease control strategies. Define and briefly discuss the application of the following disease control strategies:
   a) Livestock movement control (**4 marks**)
   b) Vaccination (**4 marks**)

c) Test and slaughter policy (**4 marks**)
d) Disinfection (**4 marks**)
e) Vector control (**4 marks**)

SECTION B

3 To be efficient and profitable, herd operations require good and simple management practices that will be followed.

a). Define herd management? **(6 marks).**

b). What are the important management practices that should be carried out in beef and dairy herds **(10 marks).**

4 It is very important to have appropriate skills in herd management in order to ensure profitability in the operation of the beef/dairy enterprises.

a). Define skills in relation to management of a herd **(4 marks).**

b). Explain the different types of general basic skills required to manage a herd **(6 marks).**

c). Describe the specific types of skills needed for the various types of herd management **(10 marks).**

5. A variety of herd management tools and solutions available on the market today make it possible for farm staff and managers to get complete control of their herd and thus expedite decision making, save time and money and enhance the overall performance of their farm through automation.

a). Define what an automated production systems is and give examples **(5 marks).**

b). Describe most important features of the automatic system **(5 marks).**

c). Discuss benefits as well as the problems associated with automated systems **(10 marks).**

THE END

THE UNIVERSITY OF ZAMBIA

UNIVERSITY FIRST SEMESTER EXAMINATIONS

August/ September 2013

AGRICUTURAL STATISTICS (DHM 102)

Instructions:

1. This examination consists of three (3) pages. Please read the instructions and each question carefully before you start writing.
2. It is essential that you indicate your student ID number on every answer booklet.
3. You should attempt to answer all questions and indicate the number of booklets handed in.
4. All questions carry equal marks.
5. Time allowed : 3 hours

Question 1

The following experiment was designed to determine the relative merit of two different feeds with regard to the gain weight in pigs. A group of 20 pigs is divided at random into two lots with 10 pigs each. Each lot is given a different sort of feed (A or B). The weight gain in kg by each of the pigs for a fixed length of time is given in the table.

FEED	
A	B
6	21
12	14
7	16
15	13
11	19
8	36
16	32
10	40
13	34
15	35

Construct an appropriate hypothesis, statistically test it and make appropriate conclusions. Use $\alpha = 0.05$ (20 marks).

Question 2

The Department of Veterinary services has three inspectors, who inspect all drugs and veterinary related products that are imported ino the country through the KK International Airport. After three months of working, the number of items passed or rejected by each of the three inspectors was as follows:

Inspector	passed	Rejected	Total
1	73	23	96
2	81	34	115
3	65	17	82
Total	219	74	293

Are the three inspectors equally stringent in their inspections? Use $\alpha = 0.05$ (20 Marks)

Question 3

The Zambia National Farmers Union (ZNFU) wants to know which breed of dairy cattle it should promote for the production of butter and cheese in Zambia. Such an ideal breed should have a high fat content in the milk. You are given two sets of data (15 in each group) to compare in terms of fat content (in %) between Friesian and Jersey cows as follows:

Friesian	Jersey
5.2	6.7
4.6	5.5
4.6	4.9
4.9	5.1
3.9	4.9
2.5	5.7
4.6	4.9
5.7	5.2
4.0	6.2
3.9	5.6
4.2	5.1
3.8	6.1
4.3	5.1
4.6	5.1
4.4	6.5

a) From the data above, calculate the 95% confidence interval of the difference in milk fat content between the two breeds (10 marks)
b) Carry out a significance test to determine if there is a significant difference in milk fat content between the two breeds so that you can make an appropriate recommendation to ZNFU. Use $\alpha = 0.05$. (10 Marks)
c) Do the results from (a) and (b) above agree? Give reasons for your answer. (5 marks).

Question 4

A farmer has noticed that there could be a variation in the amount of milk obtained by two different people milking his cows. To verify this he makes the two workers milk the same cows on alternate days. The following results are obtained from ten (10) cows (milk is recorded in litters):

Cow Number	Worker 1	Worker 2
1	18	22
2	19	20
3	18	17
4	16	21
5	15	19
6	17	18
7	16	19
8	18	20

9	20	23
10	17	24

I) What would be appropriate statistical test that the farmer should use to determine whether the amount of milk obtained by the two workers is different? Justify your answer (5 marks).

II) Formulate an appropriate hypothesis and test it to determine whether there is variation in the amount of milk obtained by the two workers from the same cows. Use $\alpha = 0.05$ (15 marks)

Question 5

Write short and concise notes on any four (4) of the following

a) Hypothesis formulation(5 marks)
b) Measures of central tendency (5 marks)
c) Graphical representation of data (5 marks)
d) Interquatile range
e) Measures of dispersion

End of Examination

THE UNIVERSITY OF ZAMBIA

FIRST YEAR UNIVERSITY EXAMINATIONS, SEPTEMBER 2013

DHM 111: INTRODUCTORY BOVINE ANATOMY

TIME: THREE (3) HOURS

INSTRUCTIONS: Answer all questions in Section A and any two (2) in Section B.

SECTION A: ANSWER ALL QUESTIONS

QUESTION 1

Explain the meaning of the following basic subjects of study:

- Gross Anatomy
- Microscopic Anatomy
- Physiology
- Embryology **15 marks**

QUESTION 3

List and **briefly explain** the functions of five major anatomical structures found in the abdominal cavity of the cow. **15 marks**

QUESTION 2

Compare and contrast the following muscle types:

- Skeletal
- Cardiac
- Smooth **15 marks**

QUESTION 4

Explain the meaning of the following anatomical terms of the domestic animal skeleton and give an example of each:

- Axial skeleton
- Appendicular skeleton
- Visceral skeleton **15 marks**

SECTION B: ANSWER ANY TWO QUESTIONS

QUESTION 1

What is the nervous system? What are the anatomical parts of the nervous system and where in the animal body are they located and what are their functions?

20 marks

QUESTION 2

List, in ordered sequence, the different components of the respiratory system of domestic animals and briefly explain the function(s) of each component

20 marks

QUESTION 3

Describe in detail the structural and functional aspects of the bovine cardiovascular system.

20 marks

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

FIRST YEAR UNIVERSITY EXAMINATIONS- SEPTEMBER, 2013

DHM 112- BOVINE ANATOMY AND REPRODUCTION

DATE: 20th SEPTEMBER, 2013

TIME: THREE (3) HOURS

INSTRUCTIONS: Answer all questions in Section A and any two (2) in Section B. All questions carry equal marks (20). Answer each question in a separate answer sheet

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SECTION A:

Question 1

(i) List in ordered sequence the components of the reproductive tract of the male animal and explain the functional anatomy of each component

(ii) List in ordered sequence the components of the reproductive tract of the female animal and explain the functional anatomy of each components

Question2

With the aid of a diagram, describe the layers that make up the teat cups of a milking machine and describe the events that take place in the teat cup chambers during the milking and resting phases of milking.

Question 3

The bovine estrus cycle is made up of four phases each with specific hormonal characteristics. In detail describe each of these phases and effects of the dominating hormones thereof

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SECTION B:

Question 4

Intramammary infections are often described as subclinical or clinical mastitis with clinical cases being described as mild, severe or acute.

a. What clinical syndrome(s) does *Escherichia coli* typically cause?
b. What types of factors make a cow susceptile to infection by this organism?
c. How can such an infection be prevented?

Question 5

Outline four hormones that are produced by the pituitary, and briefly describe their mode of actions on the target organs. Furthermore, illustrate any abnormalities that may arise due to over- or under-production of these hormones in a cow.

Question 6

Breeding soundness evaluation of a bull is critical to its optimal performance during the breeding season, and a lot of factors have to be taken into consideration when carrying out this exercise in a bull, therefore:

1. In a sentence or two describe what you understand the terms "spermatogenesis" and "spermiogenesis".
2. Describe the entire process of breeding soundness of a bull with detailed explanation of the importance of each step you to achieve a desired result
3. Mention at least five spermatozoa abnormalities that you know

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

Institute of Distance Education (IDE)

Diploma in Herd Health and Production in the Tropics

Second Year Second Semester 2013 Examination

COURSE DHM 132 (MODULE 10) – LIVESTOCK GENETICS AND BREEDING

TIME ALLOWED: THREE (3) HOURS ONLY

DATE: FRIDAY 27TH SEPTEMBER 2013

INSTRUCTIONS TO CANDIDATES:

a) All Questions carry equal marks (20).
b) Answer any four (4) questions and clearly show all the calculations.

Q.1 a) Explain the sequence of events that take place during Prophase I of Meiosis and indicate their genetic consequences.

b) What do you understand by the terms Cross Breeding as opposed to Inbreeding? What are their effects?

Q. 2 Write notes on the following:

a) The test cross and its use;
b) Co-dominance and multiple allelism; and
c) The Second Law of Inheritance; and
d) Sex determination and linkage.

Q. 3 A group of emergent commercial farmers recently learned at a Field Day about the use of Multiple Ovulation and Embryo Transfer (MOET) in dairy production. Discuss with the emergent commercial farmers the advantages and disadvantages of the use of this technique in dairy production in Zambia.

Q. 4 The new Ministry of Agriculture and Livestock (MAL) would like to see rapid genetic improvements in the beef industry by promoting the use of Artificial Insemination (AI) among small livestock producers in Zambia. As an expert in livestock improvement and breeding prepare detailed notes of what you would like to cover in order to convince the livestock producers to adopt the use of AI. In your presentation, highlight the advantages and disadvantages of Artificial Insemination (AI) over natural service.

Q. 5 The use of Artificial Insemination (AI) by small livestock producers in Zambia shall require that oestrus detection is improved. What are signs of oestrus in cattle? Also discuss the possible aids that can be put in place to improve the efficiency of oestrus detection in cattle on a dairy farm of your choice.

Q. 6 a) Albinism in humans is controlled by a recessive gene (c). From marriages between normally pigmented people known to be carriers (Cc) and albinos (cc):

i. What is the proportion of children that are expected to be albinos?
ii. What is the chance that any pregnancy would result in an albino child?
iii. What is the chance that in a family of three that one would be normal and two albino?

b) What do you understand by the terms Performance Testing as opposed to Progeny Testing? Discuss how they be used to improve certain traits in a herd of your choice.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

Institute of Distance Education (IDE)

Diploma in Herd Health and Production in the Tropics

First Year Second Semester 2013 Supplementary Examination

Course DHM 132 Module 10 – Livestock Genetics and Breeding

Time Allowed: Three (3) Hours Only

Date: Wednesday 27th November 2013

Instructions to Candidates:

a) All Questions carry equal marks (20).
b) Answer any five (5) questions and clearly show all the calculations.

Q. 1 With the aid of examples, write notes on the following:

a) Additive gene effects;
b) Dominance gene effects;
c) Sex determination and linkage; and
d) Co-dominance and multiple allelism;

Q. 2 What are the advantages and disadvantages of the use of Multiple Ovulation and Embryo Transfer (MOET) technique in dairy cattle in Zambia.

Q. 3 a) Explain the sequence of events that take place during Prophase I of Meiosis and indicate their genetic consequences.

b) With aid of examples state the Laws of Inheritance.

Q. 4 Discuss the advantages and disadvantages of the use of Artificial Insemination (AI) over natural service?

Q. 5 a) What are signs of oestrus in cattle?

b) Discuss the possible systems that can be used to improve the efficiency of oestrus detection in cattle on Zambian dairy farms.

Q. 6 What do you understand by the term Epistasis?

a) What must be the genotypes of the two parents for the outcome to always be an offspring with walnut comb?

b) Show a Punnett Square or a Checker-board for the following cross and describe the phenotypic ratios.

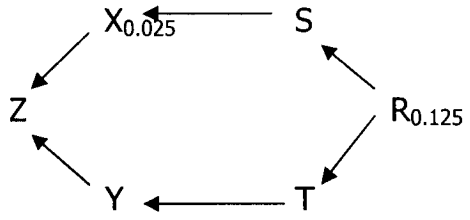
RrPp x RrPp

c) Show a Punnett Square or a Checker-board for the following cross and describe the phenotypic ratios.

Single comb x Walnut

Q. 7 a) Writes notes on Gregor Johann Mendel.

b) Given the pedigree (arrow diagram) below, work out the Coefficient of Inbreeding, F and the Coefficient of relationship, R. Comment on the answers you get.



END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
INSTITUTE OF DISTANCE EDUCATION

DIPLOMA IN HERD HEALTH AND PRODUCTION IN THE TROPICS

SECOND YEAR SECOND SEMESTER 2013 EXAMINATION

COURSE : DHM 202 BEEF/DAIRY FARM BUSINESS MANAGEMENT
DATE : 16th SEPTEMBER, 2013
DURATION : 3 HOURS
INSTRUCTIONS: ANSWER ANY FIVE QUESTIONS

1. The success or failure of a farm business rests primarily on its management. If the available resources are not utilized effectively then the farm business will definitely fail.
   a). Define farm management (5 marks).
   b). Explain the scope of farm management (5 marks).
   c). What are the general functions of farm management (5 marks).
   d). The selection of alternatives that we are going to analyze is the third step in forward planning in management. If our farm business is going to be successful in forward planning, there is need for us to carefully analyze the alternatives that are available. What are the factors that hinder success when identifying other business alternatives? (5 marks).

2. a). What are steps involved in enterprise budgeting (6 marks).
   b). Describe partial budgeting and identify the three main changes where partial budgeting can be used (8 marks).
   c). Outline the procedure that is used in total budgeting (6 marks).

3 Farm records are power tools which are very helpful to us in decision making because they enable us to identify the strong and weak points of the farm business.
   a). Identify the different types of farm records, their use and purpose (6 marks).
   b). Explain the types of accounting systems and the steps involved in cash flow budgeting (8 marks).
   c). The balance sheet has the following features:(i) Current Assets, (ii)Fixed Assets and (iii) Liabilities. Explain the meaning of these features and give examples of each feature (6marks).

4. From the information in the table below make a Cash flow Budget for the first quarter of the year 2012

Receipts		**Payments**	
Sales	**K**		**K**
		Machinery cash costs	500.00
Crops	2 500.00	Variable Costs	750.00
Livestock	1 000.00	Market costs	150.00
Account receivable	4 000.00	Overhead costs	350.00
Other receipts	150.00	Interest	500.00
		Living costs	1 250.00
		New investment	750.00
		Taxes	100.00
		Other	150.00
		Loan repayment	3 500.00

(20 marks).

5 Farming is a business that requires us to make decision in a risk environment every day. The consequences of our decisions are generally not known to us at the time we are making decisions. When we invest our money in capital investments we expect to get more than was invested in the project but sometimes this is not the case. The outcome from our decisions may be worse off than what we had expected. The sources of risk in agriculture are many

a). Identify and explain the sources of risks (6 marks)..
b). Explain risk bearing ability and the different types of Risk Attitudes (8 marks).
c). Describe the various methods that can be used to measure risks (6 marks).

6. We usually purchase fixed assets because they are helpful to us in the production of farm produce. However their use in the production process over time causes them to depreciate and this depreciation is considered as an expense in farm business because it is a direct result of our use of the asset in farm production.

a). What is depreciation and what are the two types of depreciation (8 marks).

b). Mention and explain the methods used to calculate depreciation (12 marks).

THE END

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

SECOND SEMESTER EXAMINATIONS – SEPT 2013

DHM 212: BEEF/DAIRY NUTRITION

TIME: THREE (3) HOURS

INSTRUCTIONS:

1. ALL QUESTIONS CARRY EQUALL MARKS
2. ANSWER **ALL** QUESTIONS
3. ANSWER EACH SECTION IN A SEPARATE SET OF ANSWER BOOKS

SECTION A: MODULE 14 - BEEF/DAIRY FEEDING

1. Feeding is one of the most important aspects of dairy management as it is also the most expensive component of dairy production. Feeding costs between 70 and 80% of the total cost of producing milk on the farm. Mention and give examples of the various categories of feedstuffs that can be used to feed dairy animals on the farm. (15 marks).

2. Mention and explain the factors that determine that amount of nutrients required by a dairy animal (8 marks).

3. Discuss the feeding of dairy animals under the following headings:
   a). Cow feeding (8 marks)
   b). Bull feeding. (4 marks)

4. Explain how to feed beef cattle in the dry season under Zambian conditions (10 marks)

5. What is the significance of using urea-mollasses block in the nutrition of cattle (5 marks)

SECTION B: MODULE 15 - FEEDLOTTING CATTLE

6. Define feedlotting and describe the common methods of finishing cattle for the market.

7. Many farmers might find it attractive to start a feedlot in order to earn more money within the shortest time possible. Discuss in detail, factors that a farmer should take into consideration before starting a feedlot operation.

8. Explain what feedlot profit margin is and discuss factors that affect feedlot profit margin.

9. Discuss how breed maturity type, age and sex affect the performance of cattle in a feedlot.

10. Briefly describe five (5) diseases that are commonly encountered in feedlot operations.

END OF EXAM

THE UNIVERSITY OF ZAMBIA

Institute of Distance Education (IDE)

Diploma in Herd Health and Production in the Tropics

Second Year Second Semester 2013 Examination

COURSE DHM 213 Mechanization of Dairy Farms (Module 20)

TIME ALLOWED: THREE (3) HOURS ONLY

DATE: WEDNESDAY 25TH SEPTEMBER 2013

INSTRUCTIONS TO CANDIDATES:

a) All Questions carry equal marks (20).
b) Answer any four (4) questions.

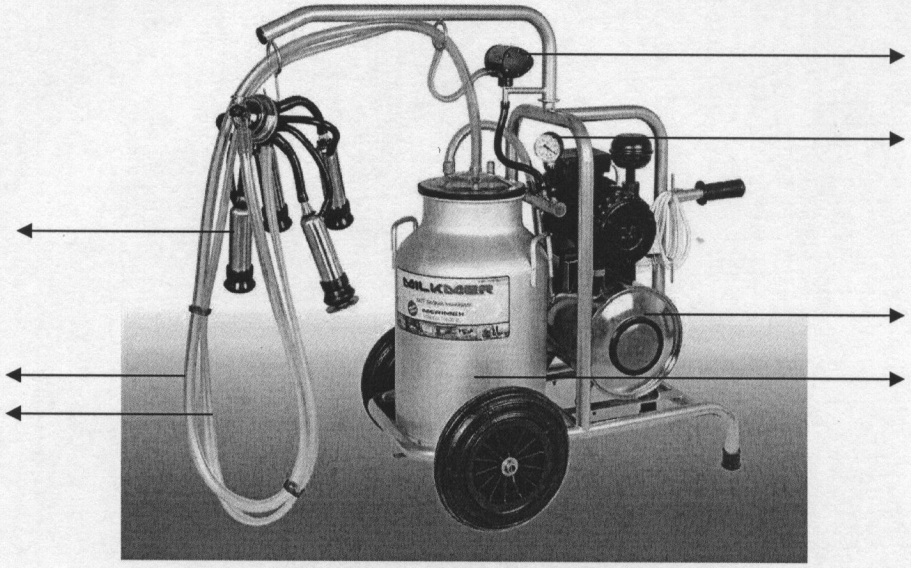
Q. 1 Dairy farm mechanisation includes the use of heavy machinery such as tractors in land preparation and the planting of pastures, in the preparation of hay and silage and to speed up the process of milking dairy cows. As a result, less labour is employed. Give a detailed account of the steps you would undertake in the preparation and successful hand milking a dairy cow.

Q. 2 Discuss the importance of the milk let-down process and any circumstances that should be avoided in the milking parlour.

Q. 3 Discuss the advantages and disadvantages of the use of the milking machine in order to remove milk from the udder of the dairy cow.

Q. 4 a) Milk is produced and stored in the cow's udder. Discuss the various techniques that can be used to remove milk from the udder after the milk-let-down has occurred.

b) Label the parts of the portable milking machine below indicated by the six arrows.



Q. 5 Write notes on the following:

a) The correct hand milking technique;
b) The correct use of the strip cup;
c) Direct-to-churn milking; and
d) Systems of cooling milk after milking.

THE END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

Institute of Distance Education (IDE)

Diploma in Herd Health and Production in the Tropics

Second Year Second Semester 2013 Examination

COURSE DHM 222 Dairy Housing and Farmstead Design and Beef/Dairy Industry and Applications (Modules 16 and 17)

TIME ALLOWED: THREE (3) HOURS ONLY

DATE: FRIDAY 20TH SEPTEMBER 2013

INSTRUCTIONS TO CANDIDATES:

a) All Questions carry equal marks (20).
b) Answer any five (5) questions, at least two from each section. Answer each section in separate set of answer booklets

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SECTION A: Beef/Dairy Industry and Applications

1. Zambia's ability to capture the potential economic benefits of expanded beef and dairy industries is constrained by gaps in productivity and price competitiveness. The beef and dairy industries in Zambia have great potential to becoming a major Foreign Exchange contributor to the national treasury.

   a) Give reasons as to why the beef/dairy industry has great potential for growth in Zambia (10 marks)

   b) What would it take for the industries to achieve their potential (10 marks).

2. Zambia is endowed with a several indigenous cattle species that provide a wide range of social and economic importance in the lives of the local people. In recent years, survival threats for the local breeds has been on the increase.

   a) Outline the importance of the local cattle breeds in the beef/dairy industry in Zambia (6 marks)
   b) What are the major threats to the survival of the local cattle breeds in Zambia? (8 marks).
   c) What are the benefits of inclusion of exotic cattle breeds in the beef/dairy industry in Zambia? (6 marks).

3. The global livestock sector is growing faster than any other agricultural sub-sector. It provides livelihoods to about 1.3 billion people and contributes about 40 percent to global agricultural output. But such rapid growth exacts a steep environmental price, according to the FAO 2006 report, *"Livestock's Long shadow–Environmental Issues and Options".*

   a) Describe the various environmental issues that affect the beef/dairy industry (10 marks).
   b) Advise on appropriate remedies for each environmental issue (10 marks).

4. Marketing beef/dairy cattle products involves various types of markets and the players involved.

   a) Outline the different type of markets and market players involved in the bee/diary industry (15 marks).
   b) What has been the impact of the ban on live animal movement on the marketing of beef and beef products (5 marks).

SECTION B: Dairy Housing and Farmstead Design

5. The aim of housing dairy animals is to provide a congenial environment for better growth, reproduction and production performance. Discuss the functions of any five (5) structures that are found close to the milking parlour to provide comfort and good health and for economic use of labour.

6. On commercial farms where several cows are milked at the same time, a milking parlour becomes a major investment. Discuss four (4) the most common types or designs of milking parlours.

7. Discuss the structures that should be at least 30 metres from the dairy unit and give reasons.

THE END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

SECOND YEAR UNIVERSITY EXAMINATIONS- SEPTEMBER, 2013

DHM 223 Bovine Reproduction

DATE: 27TH SEPTEMBER, 2013

TIME: THREE (3) HOURS

INSTRUCTIONS: Answer all questions in Section A and any two (2) in Section B. All questions carry equal marks (20). Answer each question in a separate answer sheet

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SECTION A

QUESTION 1

(i) Explain the process of spermatogenesis and oogenesis
(ii) What are accessory glands of the male genital system

QUESTION 2

(i) What is pregnancy diagnosis?
(ii) Briefly explain the various criteria used in pregnancy diagnosis

QUESTION 3

Achieving both dairy and beef production goals is greatly affected by how the cow is managed during the three stages of their reproductive cycle. Discuss the care and management of a cow in following stages:

a) Peripaturient period.
b) Lactating (milking) period
c) Dry period

SECTION B

QUESTION 4

Discuss in detail:

a) Care and management of newly born calves
b) Calf rearing methods
c) Other general calf management practices

QUESTION 5

Describe the anatomy and physiology of the male and female reproductive system

QUESTION 6

(i) What do you understand by dystocia?

(ii) How can you identify problems of parturition in the cow?

(iii) Briefly explain how you would assist a cow in dystocia

QUESTION 7

(i) What do you understand by "reproductive technology"?

(ii) Briefly describe the various breeding programmes available for use in cattle.

(iii) Describe the following assisted reproductive techniques used in cattle:

a) Embryo Transfer (ET)

b) Artificial Insemination (AI)

END OF EXAMINATION

UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

FINAL EXAMINATION (2OTH SEPTEMBER 2013

GENERAL PATHOLOGY (DLD 111)

TIME: THREE (3) HOURS

ANSWER: ALL QUESTIONS

Q1. Define the following terms

a). Pathogenesis

b. Diagnosis

c). Etiology

Q2. Define intracellular degenerative Change and list the different type

Q3. List all the cardinal signs of inflammation

Q4. Define the following terms

a). Hyperemia

b) . Edema

c) . Heart failure cells

Q5. Discuss jaundice and its different types

Q6. Define and discuss shock

Q7. Tabulate the differences between begin and malignant neoplasms (tumours)

Q8. Define embolism and list the different types of embolus

Q9. a) Define thrombosis

b) Define infarction

Q10. a) Define calcification

b) Discuss the types of calcification

END OF EXAMINATION. GOOD LUCK TO YOU ALL!!

UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

FINAL EXAMINATION (27th September 2013)

SYSTEMIC PATHOLOGY (DLD 112)

TIME: **THREE HOURS**

ANSWER: **ANY FIVE (5) QUESTIONS**

Q1. Classify different types of pneumonia found in domestic animals giving the gross and microscopic pathology (20)

Q2. Write short notes on any four (4) of the following;

a). Vegetative endocarditis(5)

b). Hemopericardium (5)

c). Acute heart failure(5)

d). Ectopia cordis(5)

e). Terratology of fallot(5)

f). Hematuria(5)

Q3. Discuss the pathogenesis and causes of jaundice (20)

Q4. a) List any five (5) Central nervous system malformation(10)

b) What are the microscopic findings in rabies infection?(10)

Q5. a). Name one parasitic disease of the oesophagus in dogs and the responsible parasite(10)

b). Discuss the pathological changes this parasite induces in the oesophagus and the likely complications (10)

Q6. Describe the two main aetiological classifications of aneamia (10)

Q7. Discuss the following

a). Liver atrophy(5)

b). Hepatic focal necrosis(5)

c). Disseminated Intravascular Coagulation (DIC)(5)

d). Traumatic pericarditis (5)

Q8. List five (5) viral diseases and five (5) bacterial diseases of the respiratory system(20)

Q9. List the conginatal anomalies of the kidney (20)

10. Write short notes on the following

a) Polycystic kidney

b) Macroscopic and microscopic pathology of Transmissible Venereal Tumours (TVT) in male dogs

END OF EXAMINATIONS – GOOD LUCK TO ALL

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

FINAL EXAMINATIONS (18TH SEPTEMBER 2013)

DLD 131: GENERAL MICROBIOLOGY

TIME: THREE (3) HOURS
ANSWER: **ALL** QUESTIONS IN **ALL** THE SECTIONS

SECTION 1: GENERAL MICROBIOLOGY

1. Explain the biological differences of viruses, bacteria, mycoplasma and fungi placing emphasis on size and survival. (*10 marks*).

2. Briefly explain the following: (*10 marks*):
   a. Microbiology
   b. Infectious agent
   c. Light microscope
   d. Prokaryotes

SECTION 2: BACTERIOLOGY

3. List the various shapes of Bacteria. (*4 marks*)

4. List the four main phases of bacteria growth in a liquid medium. (*4 marks*)

5. Briefly explain the following: *(12 marks*)
   a. Significance of normal microbial flora
   b. Establishment and multiplication of bacteria within the host.
   c. Aerobic and anaerobic bacteria.

SECTION 3: VIROLOGY

6. List the building blocks of a virus structure. ***(5 marks)***

7. Mention four properties of a virus. ***(5 marks)***

8. What is the difference between a prion and a virus. ***(5 marks)***

9. List the three stages in virus replication. ***(5 marks)***

SECTION 4: MYCOLOGY

10. Enumerate **three (3)** examples of each of the following: *(20 marks)*
    a. Dermatophytes
    b. Fungal genera under Phylum Ascomycota
    c. Sexual spores
    d. Fungal genera that produces conidiospores
    e. Vegitative spores

SECTION 5: IMMUNOLOGY

11. List **four (4)** examples of each of the following *(20 marks)*
    a. Myeloid cells
    b. Antibody types produced by B cells
    c. Secondary lymphoid organs
    d. Body secretions involved in innate immunity
    e. Lymphokines that T cells may produce

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

IDE - FINAL EXAMINATIONS SEPTEMBER 2013

DLD 141: GENERAL PARASITOLOGY

TIME: THREE (3) HOURS
ANSWER: **ALL** QUESTIONS IN **ALL** THE SECTIONS

SECTION 1: GENERAL PARASITOLOGY (25 marks)

1. Briefly define the following terms (*6 marks*):
    a. Parasite
    b. Host
    c. Vector

2. Name and briefly explain the two types of vectors in parasitology (7 *marks*)

3. Clearly define the major groups of organisms considered under the subject of Parasitology (*6 marks*).

4. Briefly discuss, in general, how various groups of parasites affect the health and well-being of animals and man, giving examples (*6 marks*).

SECTION 2: ENTOMOLOGY (25 marks)

5. In Entomology, explain the meaning of **five (5)** of the following terms/phrases referring to? (*10 marks)*
    a. *Holometabolic* and *hemimetabolic* insects (give an example of each)
    b. Bivoltine cycle
    c. Pheromones
    d. Primary host
    e. Indirect damage of arthropods
    f. Ectoparasite (Give **two** examples)

6. Briefly explain the following: (*9 marks*)
    a. The difference between biological and mechanical transmission of pathogens
    b. Larviparous insects
    c. Acarology
7. Name three (3) major features characteristic of an insect belonging to the subclass Pterygota. (*6 marks*)

SECTION 3: HELMINTHOLOGY (25 marks)

8. Describe the basic morphology of a trematode and list the types of trematodes you know. (10 *marks*)
9. List the five types of oesophagus in nematodes that you know (5 *marks)*
10. List at least five (5) morphological features that you can use to identify nematodes (*5 marks*)
11. What is an Amphistome? (*2 marks*)
12. Define the following terms (*5 marks*):
    a. Scolex
    b. Segment
    c. Cuticle

d. Tegument

e. Bursa

SECTION 4: PROTOZOOLOGY (25 Marks)

13. Clearly classify to species level the Phylum Apicomplexa (10 *marks*)

14. List the different features you can use to differentiate African Tsetse transmitted *Trypanosoma* species on a Giemsa stained thin blood smear preparation (2.5 *marks*).

15. What is Oocysts? (*2.5 marks*)

16. Clearly DEFINE the following terminologies (*10 marks)*
    a. Sporogony
    b. Merogony
    c. Transtadial transmission
    d. Antigenic variation
    e. Protozoa

17. List at least two (2) differences in *Theileria parva parva* and *Theileria parva lawrencei (5 marks)*

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
FINAL EXAMINATIONS (SEPTEMBER 2013)

DLD 221 (IMMUNODIAGNOSTICS)

TIME: THREE (3) HOURS
ANSWER: **ALL** QUESTIONS. THE **MARKS** ARE INDICATED **IN PARENTHESIS**.

Q1. Using examples and illustrations, explain the principal and procedure of the Double-Immunodiffusion test and the interpretation of the two possible resultant reactions (***15 marks***).

Q2. What immunodiagnostic test would you use for the diagnosis of the following diseases?

a. Newcastle disease in chickens (***1 mark***)
b. Brucellosis (***1 mark***)
c. Influenza (***1 mark***)
d. Contagious bovine pleuropneumonia (CBPP) (***1 mark***)
e. Rabies (***1 mark***)

Q3. Compare and contrast between the procedure and result interpretation For Haemagglutination test and Haemagglutination inhibition test (***15 marks***).

Q4. Define the following:

a. Haemagglutination (***2 marks***)
b. Antigen (***2 marks***)
c. Antibody (***2 marks***)
d. Immune complex (***2 marks***)
e. Viral neutralization (***2 marks***)

Q5. Using examples and illustrations, describe the principal and procedure of the Complement Fixation test (**15 marks**)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
FINAL EXAMINATIONS (20th September 2013)

DLD 231: DIAGNOSTIC MICROBIOLOGY 1

TIME: THREE (3) HOURS
ANSWER: **ALL** QUESTIONS IN **ALL** THE SECTIONS

SECTION 1: BACTERIOLOGY

1. Submission of unsatisfactory specimens is of no value to disease diagnosis. List and explain 3 important details to take note when receiving specimens for Bacteriology analysis. (7 Marks)
2. What is the significance of direct microscopic examination of Clinical specimens and provide an example of a Bacterial disease which can be diagnosed by direct microscopy. (7 Marks)
3. Briefly explain 3 systems or methods you can use to identify Bacterial microorganisms (6 Marks).

SECTION 2: VIROLOGY

4. What type of samples would you collect for the laboratory diagnosis of suspected influenza virus infections? How would you collect them and transport them to laboratories (your description could be both in wild and domestic birds). (12 Marks)
5. Briefly describe the procedure for the diagnosis of rabies? (8 Marks)

SECTION 3: MYCOLOGY

6. Write short and informative notes on the following: (20 marks)
    a. Germ tube test
    b. Sources of fungi for laboratory investigations
    c. Lactophenol Cotton blue mounting solution
    d. Sabouraud's dextrose agar

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

IDE - FINAL EXAMINATIONS SEPTEMBER 2013

DLD 241: DIAGNOSTIC PARASITOLOGY

TIME: THREE (3) HOURS
ANSWER: **ALL** QUESTIONS IN **ALL** THE SECTIONS
ANSWER: EACH SECTION SEPARATELY

SECTION A: HELMINTHOLOGY (25 marks)

1. You have just been employed as a chief laboratory technician at a government Research Institution in Chipata. A farmer brings to you pork which has small pea size bladders. At the centre of these small bladders is a whitish spot.
   (a) What is your diagnosis? **(5 marks)**
   (b) What name is given to the whitish spot seen on each of these bladders? **(5 marks)**
   (c) Classify the causative agent of the disease you have mentioned in (a) above. (5 marks)
   (d) How did the pig get the infection? **(5 marks)**
   (e) What advice would you give to the pig farmers in Chipata? **(5 marks)**

2. You have been invited by a meat inspector in Mongu to assist in the diagnosis of some of the parasitic diseases that may be encountered during meat inspection at Mongu abattoir. During the inspection, the inspector condemns a lot of bovine livers. On you close examination of these livers you find that the bile ducts are very enlarged and calcified. Cutting through them reveals some parasites that look like small pieces of leaves, greyish in colour.
   (a) What would be your diagnosis? **(4 marks)**
   (b) Name and classify the parasite causing this condition (6 marks).
   (c) One of the farmers would like to know how his cattle got the infection. What would you tell him? **(10 marks)**
   (d) State the laboratory method you would use to diagnose this problem **(5 marks)**

SECTION B: PROTOZOOLOGY (25 Marks)

3. You a newly graduated veterinary assistant in Siavonga district and your first assignment is to find out if your camp is suffering from Trypanosomoses.

   (a) Clearly explain how you will plan your investigation **(10 marks)**

   (b) List down the check list for the necessary consumables, reagents and equipment you need to purchase for your successful survey **(15 marks)**.

4. Assume that you are deployed to work in Katete, Eastern province of Zambia. You are told that farmers have been losing a lot of young cattle during the rainy season.

   (a) What would be your first suspicion **(5 marks)**

   (b) What would you do to confirm your suspicion **(10 marks)**

   (c) What advise(s) would you give the farmers **(10 marks)**

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
FINAL EXAMINATIONS (SEPTEMBER 2013)

DLD 252 (LABORATORY MANAGEMENT)

TIME: THREE (3) HOURS
ANSWER: **ALL** QUESTIONS. THE **MARKS** ARE INDICATED **IN PARENTHESIS**.

Q1. Explain why it is important that you, a laboratory technologist, be involved in budgeting and procurement of laboratory consumables, supplies and equipment (***10 marks***).

Q2. Give **one (1)** example of a condition/disease in which you would requires to collect the following specimens for laboratory investigations.
a. Faces/stool (***2 marks***)
b. Blood (***2 marks***)
c. Milk (***2 marks***)
d. Urine (***2 marks***)
e. Skin scrapings (***2 marks***)

Q3. Describe the detailed and systematic procedure for sample collection, preservation and transportation in a suspected case of contagious bovine pleuropneumonia (CBPP) (***10 marks***).

Q4. Write brief and informative notes on the following:
a. Record keeping in the laboratory (***5 marks***)
b. Laboratory waste management (***5 marks***)
c. Storage of chemicals in the laboratory (***5 marks***)
d. Collection of specimens fro laboratory analysis (***5 marks***)

Q5. Compare and contrast between Biosafety levels one (1) and three (3) (**10 marks**)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF BIOMEDICAL SCIENCES

SECOND SEMESTER EXAMINATIONS - AUGUST 2013

VMB 312

VETERINARY ANATOMY II

TIME: THREE (3) HOURS

INSTRUCTIONS:

1. **ATTEMPT ONLY FIVE (5) QUESTIONS**
2. **ALL QUESTIONS CARRY EQUAL MARKS**

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1. A horse suspected to be lame in the distal part of the limb was brought to the clinic. Students in attendance decided to immediately inject an anaesthetic agent on the axial surfaces of the proximal ends of the split bones. The lameness disappeared but an argument broke out among the students as to the location of the lesion that was causing lameness. Help them by discussing this nerve block in details and analyze the appropriateness of their action in diagnosing lameness.

2. Give a detailed account of the frontal sinus in domestic ruminants.

3. Write short notes on the following in **ruminants**
   (i) hard palate
   (ii) muscles of mastication
   (iii) lymph nodes of the head
   (iv) cutaneous innervation of the head

4. Write short notes on the following in the **pig**

   (i) internal appearance of the stomach

   (ii) venipuncture

   (iii) male accessory glands

   (iv) ovary

5. Describe in detail the equine hindlimb passive stay apparatus.

6. Describe the following structures of the avian digestive system

   (i) palate

   (ii) stomach

   (iii) liver

   (iv) crop

7. Describe the following aspects of the mare's reproductive system.

   (i) ovary

   (ii) uterus

   (iii) vestibule

   (iv) vascularisation

END OF EXAM

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

2012 ACADEMIC YEAR SECOND SEMESTER FINAL EXAMINATIONS

AUGUST/SEPTEMBER 2013

COURSE: VMB 332 VETERINARY BIOCHEMISTRY II

DURATION: THREE (3) HOURS

SECTION A: Answer Question A1 and two (2) other questions in this section.

Question A1

Your dog, Noni, has been admitted to a veterinary clinic because of jaundice. Preliminary investigations show an increase in unconjugated bilirubin in the blood, a decrease in urinary urobilinogen and there is no accompanying gastrointestinal pain.

a) Determine the type of jaundice the dog has and explain what it is. [7]
b) Name three marker enzymes you would include in follow-up tests to confirm your answer in (a) above and state why? [4]
c) What is unconjugated bilirubin? [2]
d) With the aid of equations, explain the detoxication/biotransformation the unconjugated bilirubin using phase II detoxification mechanisms. [7]

Question A2

In the genetic control of metabolism,

a) Define the term operon. [1]
b) If you were given the nucleotide sequence of the mRNA coding for the polypeptides of the structural genes of the *lac* operon, name six specific codons you would be looking for to help you determine the amino acid sequences. [6]
c) Show the nucleotide sequence for each codon identified in (b) above [2]
d) Name the polypeptides arising from the structural genes of the *lac* operon and explain their roles. [6]
e) Briefly explain the events on the *lac* operon when lactose is the only energy source available. [5]

Question A3

In nucleic acids,

a) What is the difference between a deoxyribonucleic acid (DNA) template strand and its messenger ribonucleic acid (mRNA) transcript? [3]
b) Name two post-transcription features of eukaryotic RNA and describe the processes and reactions leading to their formation. [12]
c) With the aid of equations, describe the activation step of protein synthesis. [5]

Question A4

Write notes on the following:

a) Phenylketonuria [8]
b) Deamination and transamination [5]
c) Tyrosinemia [7]

SECTION B: Answer Question B1 and one other Question in this section.

Question B1

a) State one major difference and one major similarity between the biodegradation of a purine and a pyrimidine and hence give chemical equations for the biodegradation of cytosine. [8]

b) Compare and contrast the biodegradation of a guanylic acid in a cow and a crocodile. Chemical equations and names of the end-products are required in your answer. [7]

c) Describe the non-enzyme materials that you would need to produce a parent pyrimidine and a parent purine and state where you would obtain them from and hence give the pathway of the *de novo* synthesis of uridine monophosphate. [5]

Question B2

a) State the function and provide the chemical equation for two (2) of the following enzymes:

i. Amidophosphoribosyl transferase [5]

ii. Adenylosuccinate lyase [5]

iii. Inosine monophosphate cyclohydrolase [5]

b) Write notes on three (3) of the following defects of purine and pyrimidine metabolism:

i. Orotic aciduria [3]

ii. Gout [3]

iii. Lesch-Nyhan syndrome [3]

iv. Immune deficiency disease [3]

Question B3

a) Write notes to compare and contrast the preferred sources of energy for brain, liver and muscle soon after a meal, during short-term fasting and long-term fasting. [8]

b) Name and draw two (2) vitamins present in each of the following foods: butter, egg, liver and apple. Name one mineral present in egg, liver and milk. [8]

c) Define a deficiency disease and write notes on the causes and characteristics for xerophthalmia, goitre, rickets and scurvy. Suggest one way of preventing each condition as well. [4]

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF BIOMEDICAL SCIENCES

SECOND SEMESTER UNIVERSITY EXAMINATIONS-AUGUST, 2013

VMB 342-VETERINARY PHYSIOLOGY

DURATION: THREE (3) HOURS

INSTRUCTIONS

i. Please read all the instructions and each question carefully
ii. Answer any **FIVE (5)** questions
iii. All questions carry equal marks
iv. Answer each question in a separate answer booklet

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1. Describe in detail the mechanism of parturition in a cow.
2. With the aid of a schematic diagram
    a. Discuss the regulation of blood calcium levels by the parathyroid glands in relation to other organs like the kidneys and intestines, among others.
    b. Discuss blood sugar regulation in animals.
3. Below is a list of five classes of diuretics. For each one of them, describe the mechanism of action and name the site(s) of action in the nephron.
    - Osmotic diuretics
    - Loop diuretics
    - Thiazide diuretics
    - Carbonic unhydrase inhibitors
    - Aldosterone antagonists
4. The hypothalamus and pituitary glands regulate a number of physiological processes in the body through the hormones they discharge to other organs. Therefore:
    a. Name the two (2) sets of neurosecretory cells of the hypothalamus whose hormonal secretions are stored in or regulate the activity of the pituitary gland.
    b. Name and briefly discuss two (2) neurohormones of the posterior pituitary.
    c. Name and briefly discuss:
        i. Tropic hormones produced by the pituitary
        ii. Non-tropic hormones produced by the anterior pituitary
        iii. The hormone with both tropic and non-tropic properties

5. Write short notes on each of the following

    a. Shivering thermogenesis
    b. Non shivering thermogenesis
    c. Determinants of glomerular filtration rate
    d. Renal mechanisms for regulating acid base balance
    e. Body fluid compartments

6. Homeotherms keep their core body temperature constant by physiological adjustments controlled by the hypothalamus. Describe the physiological responses by the body to
    a. A warm environment
    b. A cold environment
7. Give a detailed account of the process of urine formation by the nephron.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF CLINICAL STUDIES

2012/13 ACADEMIC YEAR SECOND SEMESTER FINAL EXAMINATIONS

VMC 512: CLINICAL VETERINARY MEDICINE II

TIME: THREE HOURS

INSTRUCTIONS:

1. Please read the instructions and each question carefully.
2. Answer **ALL** questions in Section A and **THREE** questions in Section B.
3. Write the answers to each question in a separate examination answer book.
4. **ALL** questions carry equal marks.

****

SECTION A

1. Sarcoids are one of the most common causes of locally aggressive, non-metastatic fibroblastic nodular neoplastic lesions accounting for 35–90% of dermatological neoplasms in horses.
    a) Outline the aetiology of equine Sarcoids. **(2 marks)**
    b) Describe the parts of the body of the horse where sarcoids would normally occur. **(3 marks)**
    c) List the **six (6)** classes of equine sarcoids. **(3 marks)**
    d) List **two (2)** differentials for equine sarcoids. **(2 marks)**
    e) Briefly discuss the available treatment options for equine sarcoids. **(10 marks)**

2. A five-year-old Schnauzer that was diagnosed with osteoarthritis a year ago, is presented to your practice with lethargy and anorexia of three days duration. The owner tells you that she ran out of the regular medication for the dog which is meloxicam, a week ago, and decided to replace it with a high dose of Ibuprofen which she found in her bathroom cabinet. On examination the rectal temperature is 39°C and you notice that the stool is dark and tarry.
    a) What is your tentative diagnosis? (**2 marks**)
    b) List **two (2)** differential diagnoses. (**2 marks**)
    c) Outline the pathogenesis of the condition in (a) above. (**2 marks**)
    d) Outline how you would come up with a definitive diagnosis. (**4 marks**)

e) Describe the management of the condition in (a) above. (**10 marks**)

3. The Headmaster at Kasonjola Basic School is having problems with his cattle herd and upon your examination you notice the following clinical findings and signs: pyrexia of 40 to 41.5 °C, lacrimation, anorexia, some depression and a reluctance to move. Some animals also showed firm and slightly raised skin lesions.

    a) What is your tentative diagnosis? (**2 marks**)
    b) Outline the pathogenesis of this condition. (**5 marks**)
    c) List other major clinical signs you would see in the condition mentioned in (a) above? (**5 marks**)
    d) Discuss how you would manage this case and what advice you would give to Farmers. (**8 marks**)

SECTION B

4. Diagnosing and treating any case of poisoning requires an understanding of the properties of specific poisons prevalent in an area. Describe in detail the information necessary for the managing poisoning due to the following toxicants (**20 marks**):

    a) Zinc phosphide,
    b) Lead,
    c) Paraquat,
    d) Cytotoxic venom and
    e) Cyanogenic glycosides.

5. You are a recent graduate from the University of Zambia working at a private clinic in Lusaka. A client presents to you a 3-year-old female miniature Doberman which he says whelped four (4) days ago. Prior to parturition, the bitch was having 'fits' which he says have since worsened. On clinical examination, the bitch is panting, restless and there is focal twitching of muscles.

    a) What is your tentative diagnosis? (**2 marks**)
    b) Outline the pathogenesis of this condition. (**5 marks**)

c) Outline other important clinical signs you would see in the condition mentioned in (a) above. (**5 marks**)

d) Discuss how you would manage this case and what advice you would give to the client. (**8 marks**)

6. For some time now you have not been able to cross the Lukusuzi River to visit one of your commercial sheep farmers. During a short window of dry spell you managed to visit one of these farms and to your surprise the farmer reports that he has lost 10 sheep of different age groups. Upon individual and herd examination you notice a few sheep with severe anaemia labored breathing and the majority with soiled perennial area.

   a) What is your tentative diagnosis? (**3 marks**)

   b) List **four (3)** differential diagnoses. (**3 marks**)

   c) Discuss the pathogenesis of the condition in (a) above. (**8 marks**)

   d) Describe the management of the condition in (a) above. (**6 marks**)

7. Mastitis is defined as inflammation of mammary gland and is almost always due to the effects of infection by bacterial or mycotic pathogens. Pathological changes to milk-secreting epithelial cells from the inflammatory process often bring about a decrease in functional capacity.

   a) Discuss in detail the expected clinical manifestation of peracute mastitis and that of acute mastitis in a high yielding cow. (**10 marks**)

   b) Outline the pathogenesis of acute coliform mastitis. (**5 marks**)

   c) Describe the management of acute coliform mastitis in a thirty dairy herd. (**5 marks**)

.....END OF EXAMINATION.....

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF CLINICAL STUDIES

2012/13 ACADEMIC YEAR

SECOND SEMESTER DEFERRED FINAL EXAMINATIONS

VMC 512: VETERINARY CLINICAL MEDICINE II

TIME: THREE HOURS

INSTRUCTIONS:

1. Please read the instructions and each question carefully.
2. Answer **ALL** questions in Section A and **THREE** questions in Section B.
3. Write the answers to each question in a separate examination answer book.
4. **ALL** questions carry equal marks.

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SECTION A

1. Equine colic can often be successfully managed medically.
   a. Briefly outline the diagnostic aids you would utilize in the field to investigate a colic case. **(5 marks)**
   b. For **each** of the following colic conditions, discuss the medical treatment option you would use, stating your reasoning for selecting your preferred treatment option:
      i. Pelvic flexure impaction that is moderately large and identifiable on rectal palpation. **(4 marks)**
      ii. Gastric dilatation due to grain overload. **(3 marks)**
   c. Outline the situations when surgical intervention is indicated in the management of a colic case. **(3 marks)**
   d. Discuss the criteria most useful in identifying the acute surgical colic case. **(5 marks)**

2. You are called to examine a cow that has been down for 36 hours following parturition. Upon arrival, you notice that the cow is in sternal recumbency with her head tucked into her flank. On closer clinical examination, you notice that the cow has mydriasis, the muzzle is dry and there are obvious signs of tympany.
   a) Which disease condition would you suspect? **(2 marks)**
   b) List **two (2)** differential diagnoses and your reasons. **(4 marks)**

c) Describe in detail the aetiology and pathogenesis of this condition. **(6 marks)**

d) Discuss the treatment of this condition. **(6 marks)**

e) Briefly outline your client education. **(2 marks)**

3) Congestive heart failure (CHF) is a common sequel of heart disease in both dogs and cats.

a) List the factors involved in the development of CHF. **(5 marks)**

b) Discuss the pathophysiology of CHF. **(15 marks)**

SECTION B

4 Mastitis-metritis-agalactia syndrome (MMA) or post-partum dysgalactia syndrome (PPDS) is a disease of multiple aetiology and has close links with coliform mastitis and cystitis in sows.

a) Which are the causes and risk factors of this syndrome? **(6 marks)**

b) What clinical signs are you likely to observe in a sow with this disease complex? **(6 marks)**

c) Discuss the treatment possibilities of this condition. **(4 marks)**

d) Briefly outline your client education. **(4 marks)**

5. An 8-month old mongrel is presented with pruritis and alopecia of two weeks duration. On examination there is evidence of pruritus and alopecia on the feet, flanks, groin, axillae, face and ears. There is evidence of secondary lesions due to self-trauma in the affected areas; excoriations, hyperpigmentations, lichenification, crusts and evidence of salivary staining. The owner tells you that the problem always seems to flare up around the month of October each year.

a. What is your tentative diagnosis? **(2 marks)**

b. List **two (2)** differential diagnoses. **(2 marks)**

a. Briefly outline the ancillary tests you will carry out in order to come up with a definitive diagnosis **(5 marks)**

b. Outline the pathogenesis of this condition. **(3 marks)**

c. Discuss the management of this condition **(8 marks)**

6. During a visit to the Zambia Police stables, you are presented with a 14-year-old mare that has bilateral swollen lower hind limbs and is lame on these limbs. You are informed that the problem has been there for over three months and that it started off as a nodule on one of the hind limbs. Your physical examination reveals a normal temperature but reactive local lymph nodes. A closer examination of the hind limbs reveals lesions showing cycles of ulceration, granulation, partial healing and renewed eruptions. The skin surrounding the lesions is hardened, variably painful and swollen. Some scars can also be observed in the affected area.

   a) What is your diagnosis? **(2 marks)**

   b) Give **two (2)** differential diagnoses. **(2 marks)**

   c) Briefly outline how you would confirm the diagnosis in (a) above. **(4 marks)**

   d) Outline how the condition in (a) above is transmitted. **(2 marks)**

   e) Discuss how you would manage and control the condition in (a) above. **(10 marks)**

7 A 3-year-old female, domestic short haired cat is presented to you with a history of having lost weight rapidly and not eating. You examine the cat and find that she is depressed and dehydrated and she appears to be exhibiting signs of hepatic encephalopathy.

   a) What is your tentative diagnosis? **(2 marks)**

   b) What other information would you want to get from history to help you come up with the diagnosis mentioned in (a) above? **(2 marks)**

   c) Outline the predisposing factors associated with the condition mentioned in (a) above. **(4 marks)**

   d) List **three (3)** differential diagnoses. **(3 marks)**

   e) Outline your client education and how you would manage this case. **(9 marks)**

.....THE END.....

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF CLINICAL STUDIES

2012/13 ACADEMIC YEAR SECOND SEMESTER FINAL EXAMINATIONS

VMC 522: VETERINARY OPERATIVE SURGERY I

TIME: THREE HOURS

INSTRUCTIONS:

1. Please read the instructions and each question carefully
2. Answer **ALL** questions in Section A and **THREE** questions in Section B
3. Write the answers to each question in a separate examination answer book
4. **ALL** questions carry equal marks

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SECTION A

1. An endoscope is a fibreoptic piece of equipment which is used to look inside some parts of the body of an animal in order to identify abnormalities. One of the most commonly examined organ systems in the horse is the respiratory system.
   a) List the other systems that can be endoscopically examined in the horse. (**2 marks**)
   b) List the common clinical signs that warrant 'scoping' of a horse. (**4 marks**)
   c) Describe in detail how you would place an endoscope in a 9-year-old mare to examine its respiratory tract, giving examples of conditions that you can diagnose as the scope is advanced up the tract (include patient/instrument preparation and patient restraint). (**12 marks**)
   d) A cystoscopic examination of a 9-year-old gelding with chronic weight loss revealed a purulent fluid pulsating into the bladder from both ureters. What would be your diagnosis? (**2 marks**)

2. Outline the radiographical findings of the conditions listed below. (**5 marks each**)
   a) Prostatomegaly
   b) Chronic bronchitis
   c) Maxillary squamous cell carcinoma
   d) Idiopathic megaoesophagus

3. You are presented with a 6-year-old Friesian cow with sudden onset of ruminoreticular atony, a sharp fall in milk production and a reduced faecal output. Clinical examination of the affected cow reveals a mildly increased rectal temperature, slightly increased heart rate and a rapid shallow respiration. Further examination reveals an arched back, reluctance to move and a grunt is elicited when you apply pressure to the xiphoid or by firmly pinching the withers.

   (a) What is your tentative diagnosis? **(2 marks)**

   (b) List **two** (**2**) differential diagnoses for the condition in (a) above? **(4 marks)**

   (c) Describe how you would surgically manage the condition in (a) above? (include preoperative management, anaesthetic protocol and postoperative care). **(10 marks)**

   (d) Briefly describe how you would prevent the condition in (a) above. (**4 marks**)

SECTION B

4. Laparatomy is a very important procedure in animals for management of various conditions. Compare and contrast paramedian and paralumbar fossa approaches in the cow. In your discussion, include indications, pre- and post-operative care, anaesthesia, procedure, advantages and disadvantages. (**20 marks**)

5. Write concise notes on the following: (**5 marks each**)

   a) Inspiration verses expiration thoracic radiograph

   b) Use of contrast media in radiographic diagnosis

   c) Importance of positioning in radiology

   d) Loss of serosal detail

6. You are a recent graduate working as an intern at UNZA veterinary clinics. A client presents to you a 3-year-old Jack Russell which he says fell from a tree house two days ago. The client tells you that his son had gone into the tree house with the dog and the dog accidently fell, and since then, the dog has been anorexic and dyspnoeic. On physical examination, you

find that the mucous membranes are pale, there is tachypnoea and tachycardia and borborygmic sounds can be heard in the thoracic cavity.

a) What is your tentative diagnosis? **(2 marks)**

b) List **two (2)** differentials **(2 marks)**

c) What other clinical signs would you see in the condition named in (a) above? **(4 marks)**

d) Discuss in detail how you would surgically manage this case? **(12 marks)**

7. You are presented with a 2-year-old cross-breed dog which has been vomiting and has had diarrhoea for the past seven days. You examine the dog and find that there is abdominal guarding and you palpate a sausage-like mass.

a) What is your tentative diagnosis? **(2 marks)**

b) Outline the pathophysiology of the condition mentioned in (a) above. **(4 marks)**

c) Outline how you would confirm your diagnosis in (a) above? **(2 marks)**

d) Describe how you would surgically manage this case? (Include preoperative assessment, anaesthesia, and post-operative care). **(12 marks)**

.....END OF EXAMINATION.....

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF CLINICAL STUDIES

2012/13 ACADEMIC YEAR SECOND SEMESTER FINAL EXAMINATIONS

VMC 532: THERIOGENOLOGY I

TIME: THREE HOURS

INSTRUCTIONS:

1. Please read the instructions and each question carefully.
2. Answer **ALL** questions in Section A and **THREE** questions in Section B.
3. Write the answers to each question in a separate examination answer book.
4. **ALL** questions carry equal marks.

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SECTION A

1. On one of your routine farm fertility visits, a farmer complains to you that he has seen a sudden drop in milk production in one of his cows. History indicates that the cow was inseminated and confirmed pregnant six (6) and three (3) months ago, respectively. However, the cow is eating well and shows no sign of any sickness. Upon rectal examination of the reproductive tract, you notice that the uterus is enlarged there is a *corpus luteum* (CL) on the right ovary.
   a) Which disease condition would you suspect? **(2 marks)**
   b) List **two (2)** differential diagnoses and your reasons. **(4 marks)**
   c) Describe in detail the aetiology and pathogenesis of this condition. **(6 marks)**
   d) Discuss the treatment of this condition. **(6 marks)**
   e) Briefly outline your client education. **(2 marks)**

2. a) Discuss the endocrinology of pregnancy in the mare. **(6 marks)**
   b) Induction of parturition in the mare is rarely necessary since long pregnancies are normal and fetal oversize is not usually a problem.

i) Outline circumstances when induction of parturition in the mare would be necessary. **(2 marks)**

ii) Sate the necessary precautions to undertake before induction of parturition in the mare. **(2 marks)**

iii) Discuss the drugs used in induction of parturition in the mare and the expected outcome. **(4 marks)**

c) Briefly outline the common abnormalities in the peri-parturient period of the mare and how you would manage each one of them. **(6 marks)**

3. A 3-year-old heavily pregnant bitch is presented to you because the owner thinks that she has dystocia and is worried about both the bitch and the unborn puppies. The owner tells you that she has noticed that the dog was restless and panting for the past four (4) hours. On examination the temperature of the dog is 36.7°C.
   a) State whether the owner has cause to worry and give reasons for your answer. **(5 marks)**
   b) Discuss in detail the stages of parturition in the bitch. **(15 marks)**

SECTION B

4. You have been invited to give a lecture to National Resource Development College graduates managing peri-urban pig farms. You have been asked specifically to discuss the oestrous cycle in a sow.
   a) What characterises the pig oestrous cycle? **(3 marks)**
   b) Explain in detail what happens during the follicular phase of a sow. **(8 marks)**
   c) Explain in detail the luteal phase in a sow. **(4 marks)**
   d) Differentiate follicular development in pigs from other species. **(3 marks)**

5. A 4-year-old cow is presented to you for examination at a farm in Lusaka West. According to the farmer, the cow has been in labour for almost 24 hours but no calf has

been born. On examination *per rectum*, you notice four legs lodged in the pelvis and protruding from the vulva. Two of the legs are hind-limbs and the other two are fore-limbs.

a) What is your tentative diagnosis? (**2 marks**)

b) List **two (2)** differential diagnoses giving reasons for each. **(4 marks)**

c) Describe in detail how you would manage this condition in view of your diagnosis in (a) above (use proper medical terms). **(12 marks)**

d) Concisely outline your client education. (**2 marks**)

6. It may be necessary at times to terminate pregnancy in the cow.
   a) List indications for termination of pregnancy in the cow. **(8 marks)**
   b) State the necessary precautions you would underatke to ensure a calf will survive after induction of parturition? **(2 marks)**
   c) Discuss the mechanism of action of all the various agents you would use to terminate pregnancy or induce parturition at the following days of gestation: **(10 marks)**
      i) Day 3
      ii) Day 20
      iii) Day 140
      iv) Day 165
      v) Day 275

7. Write concise notes on the following: **(5 marks each)**
   i) Functions and uses of non-pituitary gonadotrophins in cattle.
   ii) Indications and methods of oestrus synchronization in sheep.
   iii) Factors affecting the length of the postpartum return to ovarian cyclicity in cows.
   iv) Compare and contrast the oestrous cycle of the doe and ewe.

.....END OF EXAMINATION.....

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF CLINICAL STUDIES

2012/13 ACADEMIC YEAR SECOND SEMESTER FINAL EXAMINATIONS

VMC 612: CLINICAL VETERIBARY MEDICINE IV

TIME: THREE HOURS

INSTRUCTIONS:

1. Please read the instructions and each question carefully.
2. Answer **ALL** questions in Section A and **THREE** questions in Section B.
3. Write the answers to each question in a separate examination answer book.
4. **ALL** questions carry equal marks.

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SECTION A

1. A three-year-old mongrel is presented with tonic and clonic seizures. The owners have no idea when the seizure activity started. It is now two hours since they found the dog in that state in the garage. On examination, the dog is found recumbent, temperature is 41°C, and mucous membranes are congested.
   a) What is your diagnosis? (**2 marks**)
   b) List **two (2)** differential diagnoses. (**2 marks**)
   c) Outline how you would differentiate syncope from seizures. (**6 marks**)
   d) Describe how you would manage this case? (**10 marks**)

2. Mr Victor Muyangana, a commercial sheep farmer along the Kafue River calls and asks you to examine his flock of sheep that seems to have health problems. When you get to the farm, you find six lambs in a sick pen. You examine the lambs and find that rectal temperature is within the normal range, pulse and respiratory rates are elevated. The lambs have pale and icteric mucous membranes, and have submandibular oedema.
   a) What is your tentative diagnosis? (**2 marks**)
   b) List **three (3)** differential diagnoses. (**3 marks**)
   c) Describe the pathogenesis of the icterus seen in these lambs. (**5 marks**)

d) Describe how you would investigate the icterus in order to come up with a definitive diagnosis. **(5 marks)**

e) Describe how you would control this problem in order to limit production losses of the flock. **(5 marks)**

3. Mr Chioza has lost some calves in his feedlot and the other affected animals are dull and isolate themselves. These animals show high head carriage and stagger. There is also an onset of blindness but animals react abnormally to sudden touch and loud noises. Seizure activity is common during the later stages if the condition is not treated.

   a) What is your tentative diagnosis? **(2 marks)**

   b) Outline the pathogenesis of this condition. **(5 marks)**

   c) What other clinical signs would you see in the condition mentioned in (a) above? **(5 marks)**

   d) Discuss how you would manage this case and what advice would you give the farmer. **(8 marks)**

SECTION B

4. The most classic clinical sign of Pituitary Pars Intermedia Dysfunction (PPID) or Cushing's syndrome is hirsuitism. Other clinical signs that have been associated with PPID include polyuria/polydipsia, laminitis, lethargy, excessive sweating, muscle mass loss, predisposition to infections and bulging eyes that are as a result of redistribution of supraorbital fat.

   a) Briefly outline how polyuria/polydipsia comes about in a case of PPID. **(2 marks)**

   b) A condition that is commonly a part of PPID is diabetes inspidus which can be of central or nephrogenic origin. Discuss the difference between these two types of diabetes inspidus. **(5 marks)**

   c) Discuss a test you would use to determine whether polydypsia associated with PPID is psychogenic or due to diabetes inspidus. **(5 marks)**

   d) Describe how you would manage a 21-year-old gelding with a confirmed diagnosis of PPID. **(8 marks)**

5. Neonatal care is important in ensuring the optimal growth of puppies.

   a) Discuss how you would differentiate between healthy and sick puppies. **(6 marks)**

b) Discuss the three (3) main categories of the causes of death in new born puppies. (**9 marks**)

c) Outline the pathophysiology of acute gastroenteritis and myocarditis in puppies infected with Parvovirus. (**5 marks**)

6. You are a new animal health coordinator of an NGO formed to promote livestock production in the newly established Shangombo District. One of the leading farmers, Mr Michael Munkombwe, calls you to attend to his herd of cattle experiencing cases of abdominal distension in calves. When you get to his farm, you confirm a condition characterised by rough hair coat, unthriftness, pitting of the limbs on palpation, ventral abdomen distension, and pale mucous membranes.

   a) What is your tentative diagnosis? (**2 marks**)

   b) List **three** (**3**) differential diagnoses. (**3 marks**)

   c) Describe how you would confirm your diagnosis in (a) above. (**3 marks**)

   d) Outline the pathogenesis of the oedema in this condition. (**6 marks**)

   e) Describe the procedure that you would follow in investigating the cause of oedema in this case. (**6 marks**)

7. Lameness is one of the three reasons for premature exclusion from a breeding programme or culling in dairy industry. There are a number of risk factors which can be grouped into environmental, management and animal factors.

   a) List **three (3)** risk factors belonging to each of the three groups mentioned above. (**6 marks**)

   b) Outline the pathogenesis of Laminitis in cattle. (**4 marks**)

   c) Describe how you would treat foot rot in a dairy cow. (**4 marks**)

   d) Discuss preventive measures a farmer needs to undertake to prevent foot rot in a dairy herd. (**6 marks**)

.....END OF EXAMINATION.....

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF CLINICAL STUDIES

2012/13 ACADEMIC YEAR SECOND SEMESTER FINAL EXAMINATIONS

VMC 622: VETERINARY OPERATIVE SURGERY III

TIME: THREE HOURS

INSTRUCTIONS:

1. Please read the instructions and each question carefully.
2. Answer **ALL** questions in Section A and **THREE** questions in Section B.
3. Write the answers to each question in a separate examination answer book.
4. **ALL** questions carry equal marks.

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SECTION A

1. Dentistry is an important component in small animal practice.
   a) List any **five** (**5**) malocclusions that can occur in dogs and state the significance of each. **(10 marks)**
   b) Describe in detail how you would extract a canine tooth (include preoperative preparation, anaesthesia and post-operative care). **(10 marks)**

2. You are presented with a 12-year-old gelding experiencing a bout of colic. The horse was seen to violently roll but is now only pawing the ground and kicking at its flanks. Your physical examination reveals slightly elevated temperature, respiratory, heart and pulse rates with reduced borborygmis. Suspecting impaction colic, you institute appropriate medical treatment and collect faecal and blood samples for laboratory analysis. Three days later the horse is still showing similar signs. Faecal sample analysis reveals evidence of *Anoplocephala perfoliata.* Rectal examination reveals a firm tubular structure at the base of the caecum and distended small intestines.
   a) What is your diagnosis? **(2 marks)**
   b) Discuss how the *Anoplocephala perfoliata* could have caused the condition in (a) above. **(2 marks)**
   c) Describe the medical management directed at the suspected impaction colic. **(4 marks)**

d) Discuss in detail how you would surgically manage the condition in (a) above (include patient preparation, anaesthesia and post operative care). **(12 marks)**

3. Fractures of the femoral metaphysis and diaphysis can be divided into several subcategories that reflect their anatomical location and better denote differences that require special handling. Most dogs or cats will be presented with complete dysfunction of the involved limb. Mild to severe soft-tissue swelling may also be present depending on the degree of associated vascular injury.
    a) Describe the surgical approaches to the proximal, midshaft and distal femoral fractures in a dog. **(7 marks)**
    b) With the aid of schematic diagrams, describe two methods of open reduction and internal fixation that you could use to repair the following fractures in a dog: **(3 marks each)**
        i. Subtrochanteric fracture
        ii. Diaphyseal fracture
        iii. Supracondylar fractures
    c) Briefly outline the complications associated with repair of subtrochanteric fractures using either internal or external methods in a dog. **(4 marks)**

SECTION B

4. A farmer calls you to his farm to examine a cow that has an eye problem. Upon close examination, you find that there is a growth affecting both the upper and lower eyelids, the third eyelid and seems to be affecting the cornea. An examination of a biopsy in the lab reaveals that it is a neoplasm.
   Discuss how you would surgically manage this case (include in your discussion the pre-operative care, anaesthesia and post-operative care). **(20 marks)**

5. Forelimb fractures are common in small animal practice.
    a) Discuss the classification criteria for linear external skeletal fixators (ESFs). **(4 marks)**
    b) Outline the aetiopathogenisis of *radius curvus.* **(4 marks)**
    c) With the aid of sketches or line drawings, discuss the surgical management of a case of *radius curvus* in a six-month-old Boerboel puppy. **(12 marks)**

6. The most common equine fractures involve the bones of the lower limbs and usually occur either as a result of direct trauma from a fall, kick or knock or during strenuous exercise.
    a) Outline the prognosis of fractures in horses. **(2 marks)**
    b) Discuss how you would evaluate a fracture in a horse. **(4 marks)**
    c) Emergency stabilisation followed by comprehensive radiographic examination to allow a full evaluation of an equine fracture is an important step towards determining the best course of action. Discuss the objectives of emergency stabilisation and how you would achieve them. **(6 marks)**
    d) For each of the following fractures state how you would repair it (technique only). **(2 marks each)**
        i. A parasagittal distal sesamoid bone fracture.
        ii. A parasagittal fracture of the pedal bone.
        iii. A complete transverse fracture of the cannon bone.
        iv. A chip fracture of the ulnar carpal bone in the hock joint.

7. Dentistry is an important part of equine practice to treat and prevent oral and other gastrointestinal conditions.
    a) Give the dental formula for permanent teeth in a horse. **(2 marks)**
    b) Describe how you would carry out an oral examination in an adult horse. **(3 marks)**
    c) Outline the differences between teeth extraction and repulsion. **(4 marks)**
    d) Teeth rasping is a routine procedure in equine dentistry. Discuss teeth rasping highlighting the indications and consequences of not carrying out this procedure. **(6 marks)**
    e) Discuss the complications associated with dental surgery in equine practice and how these can be prevented. **(5 marks)**

.....END OF EXAMINATION.....

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF DISEASE CONTROL

VETERINARY ECONOMICS (VMD 532)

SEMESTER II EXAMINATION, 2013

TIME: 3 HOURS

INSTRUCTIONS: ANSWER ALL QUESTIONS

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QUESTION 1

i. Outline any four methods of calculating depreciation. [4 marks]

ii. Which method of depreciation calculation assumes that the value of an asset is more in the first years of its useful life? [1 mark]

iii. The book value of a pure Friesian cow is K20, 000 and the salvage value is K 5, 000. It has a useful life of 10 years.

a) Calculate the value of this cow in the 2^{nd} and 5^{th} year of its useful life using the declining balances depreciation method. [5 marks]

b) Assume you are using a straight line depreciation method, by how much does the cow depreciate each year? [2 marks]

c) Using the straight line depreciation method, what is the net book value of this cow in year 10? [5 marks]

d) Write down the formula for calculating the sum of digits depreciation [1 mark]

e) What is a salvage value? Give an example in broiler and pullet production [2 marks]

QUESTION 2

The table below depicts the possible combination of resources in the health and veterinary sectors.

% of resources devoted towards construction of health centres	Number of lives saved (million)	% of resources to devoted toward development of veterinary services	Number of animals saved (million)
0	0	100	15
20	4	80	14
40	7	60	12
60	9	40	9
80	11	20	5
100	12	0	0

i. Plot the information provided in this table on the graph. [3 marks]

ii. What do you call the curve on the graph you have plotted? [1 mark]

iii. What economic concept does it illustrate? [1 mark]

iv. What factors cause the inward and outward shift of this curve? [3 marks]

v. What does the area outside and inside the curve tell us about production frontier of the nation? [2 marks]

vi. What is the importance of a livestock production process? [10 marks]

QUESTION 3

Write brief but concise notes on the following decision making tools

i. Cost benefit analysis [4 marks]

ii. Cost effective analysis [4 marks]

iii. Quality adjusted life years [4 marks]

iv. Gross domestic product [4 marks]

v. Consumer price index [4 marks]

QUESTION 4

A. You have decided to go into private veterinary practice as a fresh graduate from the school of veterinary medicine.

i. What steps would you need to take in order to set up a veterinary practice? [4 marks]

ii. OUTLINE the range / types of livestock services that can be provide by a veterinary surgeon as an entrepreneur. [4 marks]

iii. OUTLINE any 2 forms of business entities that you may wish to operate [2 marks]

B. Animal health care is a commodity that is traded in health markets. Discuss some of the causes of market failure in animal health care markets [10 marks]

QUESTION 5

A. Outline the following;

i. Any 5 factors that affect demand for goods and services [5 marks]

ii. Any 3 factors affecting supply for goods and services. [3 marks]

iii. Any 3 demand shifters [2 marks]

B. Using beef and milk as examples, give a detailed and concise discussion of the concept of elasticity. (10 marks)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF DISEASE CONTROL

2012/2013 SECOND SEMESTER EXAMINATION

Veterinary Clinical Pathology - VMD 512

Instructions	:	**Answer all questions**
Time	:	**3 Hours**
Total	:	**100 marks**

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1. Increased blood urea nitrogen (BUN) is by definition azotemia. Discuss the causes of azotemia and state why the test of BUN is usually done together with a blood creatinine, a more specific indicator of kidney function. **(20 Marks)**
2. Give a detailed discussion on the hormonal activities on the kidney and the influence of various disease conditions on the body homeostasis. **(20 marks)**
3. State full names of ten (10) serum enzymes of Veterinary importance and mention five (5) that indicate hepatic damage. **(20 Marks)**

4. (a) Name the different common skin diseases (at least four in each species) of dogs, horses and cattle and describe in detail their laboratory findings and diagnosis. **(15 Marks)**

(b) Following is the laboratory findings in a dog suffering from severe pruritus, all over the body with loss of hair. Skin scrapings were negative for any evidence of common ectoparasite or their developmental stages. Based on the following hemogram give your laboratory diagnosis with suitable explanations. **(5 Marks)**

Hemogram:

Red blood cell (x 10^6 µl)	4.94	White blood cell (µl)	12,300
Hemoglobin (g/dl)	9.3	Monocyte (%)	6
Hematocrit (%)	28.70	Neutrophil (%)	62
MCV (fl)	58	Lymphocyte (%)	18
MCH (pg)	18.9	Eosinophil (%)	14
MCHC (g/dl)	32.5	Basophil (%)	0

5. Biomarkers are an important aspect in management of diseases. Define biomarkers and give a thorough discussion on the principle of biomarkers, and why and how they are exploited in the management of heart disease conditions. **(20 Marks)**

.....END OF EXAMINATION.....

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF DISEASE CONTROL
2012/2013 SECOND SEMESTER EXAMINATIONS

Veterinary Extension and Jurisprudence- VMD 642

Instructions	**:**	**Answer all questions**
Time	**:**	**3 Hours**
Total	**:**	**100 marks**

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1. A. Describe in detail how can you improve and uphold the veterinary profession in Zambia? (12 Marks)

   B. Write the most important legal requirement and procedure for a fresh veterinary graduate to work as veterinary surgeon in Zambia. (8 Marks)

2. A. Describe different types of wounds which could be encountered by vetero-legal practitioner. (10 Marks)

   B. Write the differences between ante-mortem and post-mortem wounds and causes of death due to wounds. (10 Marks)

3. A. Discuss briefly the potential of village chicken in uplifting socioeconomic status of rural poor farmers and in improving their livelihood. (8 Marks)

   B. What are the factors negatively affecting development of the village chicken in Zambia? How can extension play a role to contribute in the development of village poultry industry? (8 Marks)

   C. Explain briefly why currently commercial New Castle Disease Vaccines are not popular for use among rural poultry farmers? (4 Marks)

4. A. List the different laws of Zambia involving Veterinary Surgeons and livestock / products import and export. (10 Marks)

   B. Give the salient features of the two most important Acts for a veterinarian to have a thorough knowledge for legally acceptable veterinary service delivery. (10 Marks)

5. A. Define agriculture extension. What do you understand by the term participatory extension? Explain in detail giving examples. (8 Marks)

   B. Write short notes on:

   (i) Professional and Personal Qualities of an extension agent (3 Marks)
   (ii) Formal and Non formal Education (3 Marks)
   (iii) Contrast between rural and Urban Community(3 Marks)
   (iv) Communication Methods (3 Marks)

----------END OF EXAMINATION----------

UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

SECOND SEMISTER EXAMINATIONS – AUGUST 2013

SYSTEMIC VETERINARY PATHOLOGY - VMP 412

TIME: **Three (3) hours**

INSTRUCTIONS: **(i) Answer all questions in this paper**

(ii) Answer each question in a separate answer book

Question 1

(a) Describe the two (2) main aetiological classifications of anaemia in detail (**10 marks**)

(b) Discuss ovarian cysts in detail (**10 marks**)

Question 2

Write short notes on **any four (4)** of the following:

(a) Pyotraumatic dermatitis (**5 marks**)

(b) Zinc responsive dermatitis **(5 marks)**

(c) Primary photosensitization **(5 marks)**

(d) Hyperadrenocroticism **(5 marks)**

(e) Acute mastitis **(5 marks)**

Question 3

(a) Give detailed account of disease developmental stages in lungs describing gross and microscopic pathology **(5 marks)**

(b) Classify different types of pneumonia found in domestic animals giving their lesion distribution pattern, etiology, gross and microscopic pathology, sequelea including

example of at least one disease in which such type of pneumonia is prominent (**15 marks**)

Question 4

Write short notes on **any four (4)** of the following:

(a) Vegetative endocarditis **(5 marks)**

(b) Hemopercardium **(5 marks)**

(c) Acute heart failure **(5 marks)**

(d) Teratology of fallot **(5 marks)**

(e) Ectopia cordis **(5 marks)**

(f) Pathogenesis of heamaturia **(5marks)**

Question 5

(a) Discuss the various pathophysiology of diarrhea in detail **(10 marks)**

(b) Discuss ruminal tympany (bloat) in detail **(10 marks)**

Question 6

Write short notes on any **four (4)** of the following:

(a) Salt poisoning **(5 marks)**

(b) White Muscle Disease (Nutritional Myopathy) **(5 marks)**

(c) Interstitial (Leydig) cell tumor **(5 marks)**

(d) Rickets **(5 marks)**

(e) Scrapie **(5 marks)**

(f) Gastric dilation & volvulus (**5 marks**)

END OF EXAMINATION

UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

SECOND SEMISTER SUPPLENTARY/DEFERRED EXAMINATIONS – October 2013

VMP412 SYSTEMIC VETERINARY PATHOLOGY

TIME: **Three (3) hours**
INSTRUCTIONS: **(i) Answer all questions in this paper**
(ii) Answer each question in a separate answer book let

Question 1

1. Discuss the Central nervous system edema with reference to
a) the types of edema(4)
b) Its causes(2)
c) Its pathological appearance(4)

1 b. Discuss anuria and explain the pathogenesis of its occurence(10)

Question 2

Write short notes on any four of the following:
(a) Aneurisms(5 marks)
(b) Dietetic liver dystrophy(5 marks)
(c) Canine distemper(5 marks)
(d) Vegetative endocarditis(5 marks)
(e) Central chromatolysis(5 marks)
(f) Obstruction of the portal vein(5 marks)

Question 3

Write short notes on any four (4) of the following:
(a) Pyotraumatic dermatitis (5 marks)
(b) Acanthosis (5 marks)
(c) Parakeratosis (5 marks)
(d) Hyperparathyroidism (5 marks)
(e) Pseudopregnancy (5 marks)

Question 4

(a) Describe Polycythaemia in detail (10 marks)

(b) Discuss ovarian cysts in detail (10 marks

Question 5

(a) Discuss the pathology of intestinal obstruction in detail **(10 marks)**

(b) Discuss canine parvovirus enteritis in detail **(10 marks)**

Question 6

Write short notes on any **four (4)** of the following:

(a) Lead (Pb) poisoning **(5 marks)**

(b) Hyperplasia of the prostate gland **(5 marks)**

(c) Compare and contrast osteoporosis and osteomalacia **(5 marks)**

(d) Muscle (myofiber) atrophy **(5 marks)**

(e) Cerebral edema **(5 marks)**

(f) Seminoma in dogs (**5 marks**)

THE UNIVERSITY OF ZAMBIA

SECOND SEMESTER EXAMINATION – AUGUST/SEPTEMBER 2013

VETERINARY VIROLOGY AND MYCOLOGY (VMP 432)

Time : **THREE (3) HOURS**

Answer : **ALL THE QUESTIONS.** THE **MARKS** ARE INDICATED **IN PARENTHESIS.**
EACH QUESTION IN A SEPARATE ANSWER BOOK

SECTION I: VIROLOGY

Q1. Compare and contrast *Picornavidae* and *Rhabdovidae* family of viruses **(20 marks)**

Q2. Write short illuminating notes on **any four (4)** of the following:

a) Factors determining whether or not overt disease will result following a viral infection **(5)**
b) Mechanisms of virus exit from an infected host **(5)**
c) Considerations for selection of a DNA polymerase for use in a PCR reaction **(5)**
d) Antigenic shift and antigenic drift in influenza virus infections **(5)**
e) Virus quantitation by end-point titration assays **(5)**
f) Mechanisms responsible for persistence in herpesvirus infections **(5)**

Q3. Why is virus isolation still the "gold standard" in the diagnosis of viral diseases despite the upsurge of modern techniques such as nucleic acid detection that can provide "same-day diagnosis"? **(20 marks)**

Q4. Write short notes on **any four (4)** of the following:

a) Protein-only theory of prions **(5)**
b) Positive and negative sense RNA viruses **(5)**
c) Immuno-histochemistry **(5)**
d) Replication mechanisms in retroviral infections **(5)**
e) Factors responsible for emergency and re-emergency of viruses **(5)**
f) Define the terminology used in virology (capsomere, capsid, envelope, virion, nucleic acid) **(5)**

PLEASE TURN OVER

SECTION II: MYCOLOGY

Q5. Briefly comment on the following:

a) Control of fungal diseases **(5)**

b) Lactophenol Cotton Blue mounting solution **(5)**

c) Dimorphic fungi **(5)**

d) Asexual fungal spores **(5)**

e) Ultraviolet Lamp **(5)**

Q6. Fungi show a much more diverse pathogenic activity compared to viruses and bacteria.

a) Discuss three (3) main ways fungi cause disease **(10)**

b) Describe Mycotic abortion taking into consideration the route of inhalation as a main pathway **(10)**

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

SECOND SEMESTER DEFERRED EXAMINATION – OCTOBER 2013

VETERINARY VIROLOGY AND MYCOLOGY (VMP 432)

Time : **THREE (3) HOURS**

Answer : **ALL THE QUESTIONS.** THE **MARKS** ARE INDICATED **IN PARENTHESIS.**
EACH QUESTION IN A SEPARATE ANSWER BOOK

SECTION I: VIROLOGY

Q1. Describe the four differences between viruses and the true unicellular and multi-cellular organisms **(20 marks)**

Q2. Write short illuminating notes on **any four (4)** of the following:

a) Why is cell culture used as a "gold" standard in the diagnosis of viral infections **(5)**

b) Replication of retroviruses **(5)**

c) What is polymerase chain reaction? **(5)**

d) Briefly describe how the One-Step Growth experiment is performed as regards to viral replication **(5)**

e) What are the forms and reasons for viral persistence **(5)**

f) Mechanisms of virus exit from an infected host (animal) **(5)**

Q3. Compare and contrast the virus families, *orthomyxoviridae* with *paramyxoviridae*. **(20)**

Q4. Write short notes on **any four (4)** of the following:

a) Factors determining whether or not overt disease will result following a viral infection **(5)**

b) Biological functions of viral proteins **(5)**

c) Factors that lead to emergence of viruses **(5)**

d) What is meant by antigenic drift and antigenic shift in virology **(5)**

e) What is meant by positive and negative sense RNA viruses **(5)**

f) What is meant by mutation in viral infections **(5)**

PLEASE TURN OVER

SECTION II: MYCOLOGY

Q5. Briefly comment on the following:

a) *Aspergillus flavus* versus *Aspergillus fumigatus* **(10)**

b) Deuteromycotina versus Ascomycotina **(10)**

Q6. Discuss the entry and the haematogenous spread of *Aspergillus fumigatus* to cause Bovine mycotic abortion **(20)**.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

SECOND SEMESTER DEFERRED EXAMINATION – OCTOBER 2013

VETERINARY VIROLOGY AND MYCOLOGY (VMP 432)

Time : **THREE (3) HOURS**

Answer : **ALL THE QUESTIONS.** THE **MARKS** ARE INDICATED **IN PARENTHESIS.**
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END OF EXAMINATION

UNIVERSITY OF ZAMBIA

SECOND SEMESTER EXAMINATIONS – AUGUST 2013

VETERINARY PARASITOLOGY (VMP 442)

TIME: THREE (3) HOURS

ANSWER: ALL QUESTIONS

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK

SECTION A: PROTOZOOLOGY

Q1. Discuss African Animal Trypanosomoses (AAT) with special emphasis on its diagnosis and control **(20 marks)**

Q2. Write brief notes on **ANY FOUR (4)** of the following:

(a) Theileriosis **(5 marks)**

(b) Enzootic stability in any named tick-borne disease control **(5 marks)**

(c) Antigenic variation phenomenon in protozoan disease control **(5 marks)**

(d) Pathogenicity of *Tritrichomonus foetus* **(5 marks)**

(e) Chagas disease **(5 marks)**

(f) Leishmaniasis **(5 marks)**

PLEASE TURN OVER

SECTION B: HELMINTHOLOGY

Q3. You have just been employed as a District Veterinary officer in one of the newly formed district of Zimba. Mr. Hills Syalwele, a veterinary assistant tells you that muelleriosis is very common cause of mortality in goats in this district.

(a) **Name** and **classify** the causative agent of this disease condition? **(4 marks)**

(b) List the possible post mortem findings in a case of muelleriosis **(4 marks)**

(c) In your view, what causes the death of an animal which dies from such a condition? **(1 marks)**

(d) Briefly describe the life cycle of the causative agent of this condition **(6 Marks).**

(e) What laboratory method would you use to investigate this problem in Mr. Syalwele's flock? **(2 Marks)**

(f) Give a brief description of this laboratory method **(3 Marks)**.

Q4. Write short notes on **ANY FOUR (4)** of the following:

(a) The gapeworm **(5 marks)**

(b) Types of life histories in nematodes **(5 marks)**

(c) Hypobiosis **(5 marks)**

(d) The largest nematode of poultry **(5 marks)**

(e) The transmission of the cattle eye worm **(5 marks)**

(f) The oesophageal worm of canines **(5 marks)**

PLEASE TURN OVER

SECTION C: ENTOMOLOGY

Q5. Describe in detail the life cycle, veterinary significance and the methods that can be used to control the vectors of *Theileria parva* **(20 marks)**

Q6. Write short notes on **ANY FOUR (4)** of the following:

a) Clinical classification of myiasis **(5 marks)**

b) External characteristics of bed bugs **(5 marks)**

c) Life cycle of parasites belonging to the family *Argasidae* **(5 marks)**

d) Medical importance of some species belonging to the family *Tabanidae* **(5 marks)**

e) *Tunga penetrans* **(5 marks)**

f) The general life cycle of mites **(5 marks)**

END OF EXAMINATION

UNIVERSITY OF ZAMBIA

SECOND SEMESTER DEFERRED EXAMINATIONS – OCTOBER 2013

VETERINARY PARASITOLOGY (VMP 442)

TIME: THREE (3) HOURS

ANSWER: ALL QUESTIONS

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK

SECTION A: PROTOZOOLOGY

Q1. Clearly **DESCRIBE** the general life cycle of *Theileria parva lawrencei.* How would you relate this parasite to enzootic stability? **(20 marks)**

Q2. Write short notes on **ANY FOUR** of the following:

(a) *Trichomonus foetus* **(5 marks)**

(b) Mode of transmission of Trypanosome species. **(5 marks)**

(c) *Toxoplasma gondii* **(5 marks)**

(d) *Histomonus meleagridis* **(5 marks)**

(e) Espundia **(5 marks)**

(f) Life cycle of *Eimeria tenella* **(5 marks)**

PLEASE TURN OVER

SECTION B: HELMINTHOLOGY

Q3. *Dictyocaulus viviparous* is a common lungworm infection of cattle. **DISCUSS** in **DETAIL** the life cycle of this lungworm species. How would you investigate lungworm infection in a herd? **(20 marks)**

Q4. Write short notes on **ANY FOUR (4)** of the following:

(a) Ascaris **(5 marks)**

(b) Heterakis gallinarum. **(5 marks)**

(c) Cutaneous larval migrams **(5 marks)**

(d) Simple test tube flotation **(5 marks)**

(e) Wuchereriasis **(5 marks)**

(f) Factors limiting the accuracy and significance of faecal examination **(5 marks)**

PLEASE TURN OVER

SECTION C: ENTOMOLOGY

Q5. *Culicoides* are important vectors of several important diseases of livestock in Africa.

(a) **MENTION** three other genera, known to feed on blood, that belong to the same family as *culicoides* and briefly describe the general external features for this family **(8 Marks)**.

(b) **BRIEFLY DESCRIBE** the life cycle of *culicoides*, their veterinary significance and how you can control these insects **(12 Marks)**.

Q6. Write short notes on **ANY FOUR (4)** of the following:

(a) Life cycle of *melophagus ovinus* **(5 Marks)**.

(b) External characteristics of tsetse flies **(5 Marks)**.

(c) Veterinary significance *Cordylobia anthropophaga* and their control **(5 Marks)**.

(d) The family *Cimicidae* **(5 Marks)**.

(e) The direct and indirect losses associated with ticks in livestock production **(5 Marks)**.

(f) Medical and veterinary significance of *Sarcoptes scabiei* and their control **(5 Marks)**.

END OF EXAMINATION

UNIVERSITY OF ZAMBIA

SECOND SEMESTER DEFERRED EXAMINATIONS – OCTOBER 2013

VETERINARY PARASITOLOGY (VMP 442)

TIME: THREE (3) HOURS

ANSWER: ALL QUESTIONS

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK

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