THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

1.	DLM	1011	..... ANIMAL/LIVESTOCK MANAGEMENT
2.	DLM	1122	..... LIVESTOCK ANATOMY AND REPRODUCTION
3.	DLM	2121	..... LIVESTOCK FEEDING
4.	DLM	2232	..... BOVINE REPRODUCTION
5.	VMB	2100	..... VETERINARY GROSS ANATOMY PAPER II
6.	VMB	2110	..... VETERINARY HISTOLOGY AND EMBRYOLOGY I
7.	VMB	2110	.....VETERINARY HISTOLOGY AND EMBRYOLOGY II
8.	VMB	2200	..... VETERINARY BIOCHEMISTRY
9.	VMB	2409	..... BIOSTATISTICS, GENETICS AND ANIMAL BREEDING
10.	VMB	2500	..... ANIMAL PRODUCTION AND NUTRITION
11.	VMB	3121	..... COMPARATIVE AND APPLIED VETERINARY ANATOMY
12.	VMB	3600	..... VETERINARY PHARMACOLOGY
13.	VMP	3100	..... VETERINARY PATHOLOGY
14.	VMP	3300	..... VETERINARY MICROBIOLOGY AND IMMUNOLOGY
15.	VMP	3400	..... VETERINARY PARASITOLOGY
16.	VMC	4101	..... PROPAEDEUTIC TO VETERINARY CLINICAL MEDICINE
17.	VMC	4112	..... COMPANION ANIMAL MEDICINE
18.	VMD	4201	..... VETERINARY EPIDEMIOLOGY
19.	VMC	5100	..... PROPAEDEUTIC TO CLINICAL VETERINARY MEDICINE
20.	VMC	5200	..... PRINCIPLES AND INTRODUCTION TO VETERINARY SURGERY
21.	VMC	5309	..... INTRODUCTION TO VETERINARY REPRODUCTION AND OBSTETRICS
22.	VMD	5100	..... VETERINARY CLINICAL PATHOLOGY
23.	VMD	5319	..... VETERINARY EPIDEMIOLOGY AND ECONOMICS
24.	VMC	6210	..... VETERINARY OPERATIVE SURGERY
25.	VMC	6319	..... VETERINARY REPRODUCTION AND GYNAECOLOGY
26.	VMD	6609	..... PREVENTIVE VETERINARY MEDICINE
27.	VMD	6701	..... VETERINARY JURISPRUDENCE AND EXTENSION.

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

IN CONJUNCTION WITH

INSTITUTE OF DISTANCE EDUCATION (IDE)

END OF YEAR SUPPLEMENTARY EXAMINATION-2016/17 ACADEMIC YEAR

DIPLOMA IN LIVESTOCK MANAGEMENT IN THE TROPICS

ANIMAL/LIVESTOCK MANAGEMENT (DLM 1011)

DURATION : 3 HOURS
INSTRUCTIONS : ANSWER ANY FIVE QUESTIONS.
ALL QUESTIONS CARRY EQUAL MARKS
ANSWER EACH SECTION IN SEPARATE SET OF ANSWER BOOKLETS

SECTION A

QUESTION 1.

A variety of livestock management tools and solutions available on the market today make it possible for farm staff and managers to get complete control of their herds 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 the benefits as well as the problems associated with automated systems **(10marks).**

QUESTION 2.

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

a). Define livestock management? **(6 marks).**
b). What are the important management practices that should be carried out in livestock enterprises **(14 marks).**

QUESTION 3.

It is very important to have appropriate skills in livestock management in order to ensure profitability in the operation of the livestock enterprises.

a). Define skills in relation to management of a livestock**(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).**

SECTION B

QUESTION 4.

Write short notes on any two (2) of the following:

a) Clinical signs and postmortem lesions of babesiosis. (**10 marks**)
b) Control of Theileriosis (**10 marks**)
c) Clinical signs and postmortem lesions of bovine tuberculosis (**10 marks**)
d) Control of brucellosis in cattle (**10 marks**)

QUESTION 5.

Briefly discuss the diagnosis, transmission and prevention/control measures for each of the following diseases:

a) Anthrax (**10 marks**)
b) Blackleg (**10 marks**)

QUESTION 6.

You are a district livestock officer in Kazungula District. A farmer calls you to attend to his animals showing lameness, salivation and vesicles in the mouth and feet.

a) What disease is this? (**2 marks**)
b) What is the epidemiology of this disease? (**8 marks**)
c) What other disease in cattle will show similar clinical signs? (**2 marks**)
d) How would you control this disease mentioned in a) above? (**8 marks**)

THE END

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

IN CONJUNCTION WITH

INSTITUTE OF DISTANCE EDUCATION (IDE)

END OF YEAR SUPPLEMENTARY EXAMINATION-2016/17 ACADEMIC YEAR

LIVESTOCK ANATOMY AND REPRODUCTION (DLM 1122)

Duration: 3 hours

INSTRUCTIONS:

1. Please read the instructions and each question carefully
2. Answer **FIVE (5)** questions only
3. **ALL** questions carry equal marks
4. Answer **ALL** questions

SECTION A: Answer all questions in this section

QUESTION 1.

Describe:

a) The characteristics of the four phases of the bovine estrus cycle (10 marks)
b) The major characteristics determined when carrying out semen evaluation (10 marks)

(20marks)

QUESTION 2.

Give a detailed description ofthe anatomy of the cow's reproductive system. **(20marks)**

QUESTION 3.

Following milk production or secretion, the milk is then temporarily stored in structures of the udder.

a) Sketch an illustrative diagram of the alveolus depicting the most important features.**(10 marks)**

b) Discuss the milk ejection process. **(10 marks)**

SECTION B: Answer ALL questions in this section

QUESTION 4.

Give a detailed description ofthe anatomy of the bull's reproductive system.

(20 marks)

QUESTION 5.

Milking machine design and function is critical for rapid and efficient removal of milk without damage to the teat or gland and with minimal risk for transmitting pathogenic microorganisms that might cause mastitis.

c) List five (5) components of a milking machine.**(5 marks)**

d) Explain how a basic milking machine works. Use a diagram depicting a teat cup assembly during the milking phase and the resting phase of the pulsation cycle to complement your explanation. **(10 marks)**

e) Briefly discuss the local factors that play a role in the process of lactogenesis. **(5 marks)**

END

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
IN CONJUNCTION WITH
INSTITUTE OF DISTANCE EDUCATION (IDE)
END OF YEAR SUPPLEMENTARY EXAMINATION-2016/17 ACADEMIC YEAR
DIPLOMA IN LIVESTOCK MANAGEMENT IN THE TROPICS

DLM 2121–LIVESTOCK FEEDING

SUPPLEMENTARY EXAMINATION OCTOBER, 2017

INSTRUCTIONS:
1. Answer ALL questions
2. Time: Three (3) hours
3. Answer EACH Section in SEPARATE SET of answer books

SECTION A: MODULE 14 – LIVESTOCK FEEDING

QUESTION 1

a) Mention and give examples of the various categories of feedstuffs that can be used to feed animals on the farm. [**5 marks**].
b) What are the suitable supplementary feeds that can be used to supplement grazing animals in the dry season.[**5 marks**].

QUESTION 2

Using the Pearson Square formulate 100kg of Pig Grower containing 16% Crude Protein(CP) using Maize meal with 7.4 % CP and Soya cake with 40 %CP. Please show all the calculations. [**10 marks**].

QUESTION 3

The proximate analysis of Sunflower-cake reveals the following figures in % Fresh Matter: Carbohydrates 56%, NFE 16%, OM 87% and DM 91%

a) What is the percentage of Ashes of the sunflower-cake (in FM)?
b) What is the percentage of CF of the sunflower-cake?
c) Do you consider the percentage of CF hiqh or low?
d) What is the percentage of EE of the sunflower-cake?
e) What is the moisture content of the sunflower-cake? [**10 marks**].

QUESTION 4

What is the significance of using urea-mollasses block in the nutrition of cattle, sheep and goats.[**10 marks**].

QUESTION 5

Outline the feeding regime of the broiler chickens and pigs and explain why the animals should be fed that way. [**10 marks**].

QUESTION 6

Why are the following feedstuffs restricted when formulating rations for poultry?
i). cottonseed cake ii) sunflower cake iii) red sorghum iv) fish meal v) Cassava
[**10 marks**].

SECTION B: MODULE 15 – FEEDLOTTING CATTLE

QUESTION 7

Describe the main biological characteristics of cattle that affect their response to feeding in a feedlot [**10 marks**].

QUESTION 8

Discuss in detailfactors that a farmer should take into consideration before starting or expanding a feedlot [**10 marks**].

QUESTION 9

Discuss feedlot profit margin, price margin and feed margin [**10 marks**].

QUESTION 10

Explain how manure disposal, fly control and digestive disorders should be managed in a feedlot [**10 marks**].

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE&

INSTITUTE OF DISTANCE EDUCATION

END OF YEAR SUPPLEMENTARY EXAMINATION

DLM 2232 (BOVINE REPRODUCTION)

DATE: Friday, 27/10/2017

TIME: THREE (3) HOURS

INSTRUCTIONS: Answer all questions in section A and select 2 questions in section B.

Section A, answer all questions

QUESTION 1

Briefly describe:

a) The criteria for selecting replacement heifers and the different mating options
b) Calf rearing methods and general calf management practices
c) Ten (10) diseases that mainly affect the reproductive system or pregnancy of a cow.
d) The general calf management practices

[20 marks]

QUESTION 2

a) Give a detailed description of the processes of spermatogenesis and; **[10 marks]**
b) Give a detailed description of the process of oogenesis **[10 marks]**

QUESTION 3

Identify two reproductive technologies that you know and explain what they are and their benefits in improving reproduction in the animal industry

[20 marks]

Section B, select two questions

QUESTION 4

Discuss in detail the following stages of the cow's reproductive cycleand explain their management importance in cattle production;

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

[20 marks]

QUESTION 5

Write short notes on the following:

a) Pregnancy diagnosis
b) Positive signs of pregnancy and additional signs of pregnancy
c) Stages of parturition

[20 marks]

QUESTION 6

a) What is dystocia?
b) Give five (5) reasons for dystocia. .
c) What are the rules of thumb to interfere in a dystocia case?
d) Briefly explain the importance of calving facilities and feeding and nutrition of the calf

[20 marks]

QUESTION 7

Discuss infertility in the cow under the following headings:

a) Congenital morphological causes
b) Functional causes of infertility
c) Cystic ovaries and retained corpora lutea

(20 marks)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE

END OF YEAR AUGUST/SEPTEMBER EXAMINATIONS-2016/17 ACADEMIC YEAR

VETERINARY GROSS ANATOMY (VMB 2100)

PAPER II

TIME: THREE (3) HOURS

INSTRUCTIONS:

1. Answer **ALL** questions
2. Write as clearly as possible as poor handwriting cannot be marked

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QUESTION 1

Answer the questions below concerning the **CERVICAL** region of ruminant animals

a. Briefly explain four reasons or the importance of studying neck anatomy in domestic animals. **(4 marks)**
b. Briefly describe the comparative anatomy of the atlas bone of the domestic animals. **(6 marks)**
c. Knowledge of the horse's neck vertebral column biomechanics is important in understanding normal gait as well as pathological stress on the neck. What are the three main motions that can be observed on the horse's neck? **(3 marks)**
d. The cervical vertebral column of domestic animals can be divided into three basic motion segments based on joint morphology:
    i. List the three main joints in the neck of the horse. **(3 marks)**
    ii. Briefly describe the movements associated with each of the joints you have listed in (i) above. **(3 marks)**
    iii. Approximately what percentage (%) of vertical motion does the neck of a galloping horse undergo and what is the significance of this? **(1 mark)**

QUESTION 2

Answer the questions below concerning the **THORACIC** region of ruminant animals.

(a) Name the dorsal, ventral, and lateral BONY parts of the thoracic cage and briefly explain how they are anatomically related to each other. **(5 marks)**
(b) Name the dorsal, ventral, and lateral MUSCULATURE of the thoracic cage of the bovine and state the actions. **(5 marks)**
(c) From the below listed blood vessels, select **10** blood vessels that can be found in the thoracic cavity of the ruminant animal:
    i. Brachiocephalic trunk
    ii. Maxillary artery

iii. Subclavian artery
iv. Occipital artery
v. Subclavian vein
vi. Thoracodorsal artery
vii. Jugular vein
viii. Azygous vein
ix. Bicarotid trunk
x. Internal thoracic artery
xi. Internal thoracic vein
xii. Pulmonary artery
xiii. Costocervical trunk
xiv. Cranial vena cava
xv. Bicipital vein

QUESTION 3

(a) Group the below listed spinal cord tracts into either ascending or descending pathways.

i. Fasciculus gracilis
ii. Tecto spinal tract
iii. Lateral reticulospinal tract
iv. Ventral spinothalamic tract
v. Dorsal spinal cerebellar tract
vi. Lateral corticospinal tract
vii. Vestibulospinal tract
viii. Lateral spinothalamic tract
ix. Medial reticulospinal tract
x. Ventral corticospinal tract

(10 marks)

(b). Draw a diagram showing the following anatomical parts of a transverse section of the spinal cord and the branches of a typical spinal nerve

i. Central canal
ii. Dorsal root
iii. Dorsal root ganglion
iv. Ventral root
v. Sensory pathway
vi. Motor pathway
vii. Ventral ramus
viii. Spinal nerve
ix. Ventral horn
x. Dorsal horn

(10 marks)

QUESTION 4

(a) Draw a diagram of the pupillary light reflex indicating the positions of the eyeballs, various nuclei/ganglia and the nerves involved. What would happen if there is damage to the pretectal nucleus of the pupillary light reflex? **(10 marks)**

(b) Name the anatomical components and functions of the following parts of the ear:

i. External ear
ii. Middle ear
iii. Inner ear

(10 marks)

QUESTION 5

(a) Describe the anatomy of the cow's udder **(10 marks)**

(b) List **FIVE** muscles of the forelimb and **FIVE** muscles of the hindlimb of the ruminant animal and state their actions. **(10 marks)**

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE

FINAL YEAR AUGUST/SEPTEMBER EXAMINATIONS - 2016/17 ACADEMIC YEAR

VMB2110 – VETERINARY HISTOLOGY AND EMBRYOLOGY **PAPER I**

INSTRUCTIONS:

1. DURATION: 3 HOURS
2. ANSWER ALL QUESTIONS IN SECTION A,AND ANY OTHER 2 IN SECTION B
3. EACH QUESTION SHOULD BE ANSWERED IN A SEPARATE ANSWER BOOKLET
4. ALL QUESTION CARRY EQUAL MARKS

SECTION A

1. Write short notes on:
    a. Transitional epithelium [5 marks]
    b. The microscopic structure of a cross section of a long bone [5 marks]
    c. Histological arrangement of nerve fibres in the peripheral nervous system [10 marks]
2. List down:
    a. Supportive cells of the central nervous system [8 marks]
    b. Microscopic structure of the rough endoplasmic reticulum [5 marks]
    c. Names of monocytes and lymphocytes found in connective tissue [2 marks]
    d. Types of cell inclusion bodies [5 marks]
3. Discuss in detail:
    a. The functional histology of the spleen [10 marks]
    b. The primary lymphoid organs [5 marks]
    c. Splenic blood circulation [5 marks]

SECTION B

4. Discuss in detail the microscopic structure of
    a. hyaline cartilage [10 marks]
    b. compound glands [10 marks]
5. Discuss in detail:
    a. Elastic arteries [10 marks]
    b. Brachydont teeth [10 marks]
6. Write brief notes on the following:
    a. Types of taste papillae on the tongue, and the composition of a taste bud (10 marks]
    b. Mucosa of the Reticulum [5 marks]
    c. Histology of the liver [5 marks]
7. Describe the main histological features that are visible with a light microscope used to identify: eosinophils, basophils, neutrophils, lymphocytes, monocytes, smooth muscle fibres and cardiac muscle fibres [20 marks]
8. Describe the histology of the following organs when viewed under a light microscope:
    a. Teat of a goat [5 marks]
    b. The tongue of a pig [5 marks]
    c. Ovary of a bitch [5 marks]
    d. Aorta of a horse [5 marks]

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE

FINAL YEAR OCTOBER SUPPLEMENTARY EXAMINATIONS– 16/17 ACADEMIC YEAR

VMB 2110 – VETETRINARY HISTOLOGY AND EMBRYOLOGY- **PAPER I**

INSTRUCTIONS:

1. DURATION: 3 HOURS
2. ANSWER ALL QUESTIONS IN SECTION A, AND ANY OTHER 2 IN SECTION B
3. EACH QUESTION SHOULD BE ANSWERED IN A SEPARATE ANSWER BOOKLET
4. ALL QUESTIONS CARRY EQUAL MARKS

SECTION A

Question 1

Write short notes on:

a. Pseudostratified columnar epithelium [**5 marks**]
b. The microscopic structure of a cross section of a long bone [**5 marks**]
c. Receptor (sensory) organs [**10 marks**]

Question 2

1. List down:
   a. Six types of glands based on their morphological characteristics [**3 marks**]
   b. Types of neurons according to their classification [**6 marks**]
   c. Microscopic structure of the Golgi apparatus [**4 marks**]
   d. Types of adipose tissue [**2 marks**]
   e. Types of specializations on the free cell surface [**5 marks**]

Question 3

In detail discuss the following:

a) The hypsodont teeth (**10 marks**)
b) The muscular arteries (**10 marks**)

SECTION B

Question 4

a) Discuss the functional histology of the spleen (**10 marks**)
b) Discuss the splenic blood circulation (**10 marks**)

Question 5

Discuss in detail the microscopic structure of fibrocartilage [**20 marks**]

Question 6

Describe the main histological features that are visible with a light microscope used to identify:eosinophils, basophils, neutrophils, lymphocytes, monocytes, smooth musclefibres and cardiac muscle fibres [**20 marks**]

END OF EXAM

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE

FINAL YEAR OCTOBER SUPPLEMENTARYEXAMINATIONS– 16/17 ACADEMIC YEAR

VMB 2110 – VETETRINARY HISTOLOGY AND EMBRYOLOGY- **PAPER II**

INSTRUCTIONS:

1. DURATION: 3 HOURS
2. ANSWER ALL QUESTIONS
3. ALL QUESTIONS CARRY EQUAL MARKS

Question 1

Write brief notes on the following:

a) Gastrulation (**5 marks**)
b) Structures shed at ovulation (**5 marks**)
c) Barriers to fertilization (**5 marks**)
d) Intersex conditions (**5 marks**)

Question 2

The Cardiovascular is one of the earliest systems to develop in an embryo as it plays a critical role in the whole process of embryogenesis. In detail describe:

a) Atrial and ventricular septation (**5 marks**)
b) Cardiac abnormalities in embryo development (**5 marks**)
c) Ventricular septation (**5 marks**)
d) Embryonic blood circulation (**5 marks**)

Question 3

Write brief notes on the following:

a) Cleavage in birds (**5 marks**)
b) Functions of the placenta (**5 marks**)
c) Blood supply to the gut (**5 marks**)
d) Three developmental stages of bronchioles (**5 marks**)

Question 4

In order of development discuss in detail the three evolutionary kidney systems in mammals. (**20 marks**)

Question 5

Compare and contrast the development of the reproductive duct systems in male and female embryos (**20 marks**)

END OF EXAM

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF BIOMEDICAL SCIENCES

END OF YEAR OCTOBER UNIVERSITY SUPLEMENTARY/DEFERRED EXAMINATIONS
2016/17 ACADEMIC YEAR

VETERINARY BIOCHEMISTRY (VMB 2200)

DURATION: Three (3) hours.

INSTRUCTIONS:

1. Please read instructions and each question carefully
2. Answer **ANY** five (5) questions only
3. All questions carry equal marks
4. Write in a legible handwriting

Question 1

Gluconeogenesis is the synthesis of glucose from non-carbohydrate precursors and yet it is not a reverse of glycolysis, with respect to this answer the following:-

a) Clearly, show how gluconeogenesis is not a reverse of glycolysis. **(9 marks)**

b) Name three non-carbohydrate precursors of glucose and for each of the named precursors in (a), give their molecules of entry into the gluconeogenic pathway. **(6 marks)**

c) Explain the role of the reaction involving the inter-conversion of fructose-6-phosphate to fructose-1, 6-diphosphate in the regulation of both pathways. **(5 marks)**

Question 2

a) With the aid of a diagram, explain how green plants harness energy from sunlight and how this energy is utilized in the synthesis of glucose and other organic compounds required for the plant. **(10 marks)**

b) Ruminants are able to utilise plant energy for various body functions. Describe how this is achieved. **(10 Marks)**

Question 3

Describe the addition of a glucosyl unit to growing chain of glycogen molecule and hence the branching of a glycogen molecule being synthesised. **(20 marks)**

Question 4

DNA can be referred to as the molecule of life because it holds the key information required for smooth function of a living cell. in this regard;

a) Outline the features of DNA. **(5 Marks)**

b) Outline the functions of the various enzymes involved in DNA replication. **(15 marks)**

Question 5

Various RNA molecules have been identified over the years. Each one of them performs a specific function in living cells. Keeping this in mind;

a) Describe in detail the maturation of mRNA **(10 Marks)**

b) Describe how the structure of tRNA allows it to carry out its functions. **(10 Marks)**

Question 6

Write short notes on:-

a) Peptide Bond **(5 marks)**

b) Phenylketonuria **(5 marks)**

c) Shine-Delgarno Sequences **(5 marks)**

d) Chloramphenical **(5 marks)**

Question 7

Purines and pyrimidines are important nitrogenous bases that are components of various important nucleotide containing biomolecules. However, the synthesis and degradation of the two types of nucleotides follow different routes. The degradation of purine based nucleotides lead to a common end product which is excreted in different forms in different organisms.

a) What are nucleotides and hence state the general functions of nucleotides **(6marks)**

b) Showing all details including structures, outline the degradation of the common end product of purine degradation named above in different organisms up to the Teleost fish. **(9 marks)**

c) By way of the salvage synthetic route and without showing the structures, outline the synthesis of pyrimidine nucleotide cytidine triphosphate (CTP) starting with uracil. **(5 marks)**

Question 8

Carbamoyl phosphate is at the biosynthetic center of urea and pyrimidines pathways.

a) How is the competition for use of carbamoyl phosphate avoided between the two pathways. **(2 marks)**

b) Outline, including structures, the synthesis of urea. **(12 marks)**

c) Draw the general structure of a pyrimidine including the numbering of the atoms and the sources of these atoms. **(6 marks)**

End of Examination

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF BIOMEDICAL SCIENCES

END OF YEAR OCTOBER UNIVERSITY SUPLEMENTARY/DEFERRED EXAMINATIONS
2016/17 ACADEMIC YEAR

BIOSTATISTICS, GENETICS AND ANIMAL BREEDING (VMB 2409)

DURATION: Three (3) hours.

INSTRUCTIONS:

1. Please read instructions and each question carefully
2. Answer **ANY** five (5) questions only
3. All questions carry equal marks
4. Write in a legible handwriting

Question 1

The table below shows the frequencies of major causes of human death in Zambia and in 2010 by sex.

	Males	**Females**
Circulatory system	127435	137165
Neoplasms (cancers)	75172	69948
Respiratory system	33489	33223
Digestive system	7900	10779
Injury and poisoning	11073	6427
Mental disorders	4493	9225
Others	19811	27460
Total	279373	294227

a) Calculate the relative frequency of each cause of death for both sexes combined. **(7 marks)**

b) Calculate the relative frequency of each cause of death for each sex separately; and compare the two frequency distributions and comment. **(5 marks)**

c) For each cause of death, calculate the relative frequencies of males and females. How does this compare to b)? **(8 marks)**

Question 2

a) (i) What does the F-test measure? **(2 marks)**

(ii) Why can't the value of F not be smaller than 1? **(2 marks)**

(iii) How is the critical value of F determined? **(2 marks)**

b) Three machines A, B and C are designed to produce identical surgical gloves. An interested buyer wants to know whether the hourly outputs of the machines are different. Random samples of a specific number of hours for each machine are selected and output are recorded as follows:

Machine A:	2	4	5	3		
Machine B:	4	5	7	3	4	
Machine C:	6	5	7	4	6	8

Test the hypothesis that the hourly output of the three machines are not different, choosing a significant level of $\alpha = 0.05$. **(14 marks)**

Question 3

The sales of a company (in million kwacha) for each year are shown in the table below.

x (year)	2005	2006	2007	2008	2009
y (sales)	12	19	29	37	45

a) Find the least square regression line $y = ax + b$. **(14 marks)**

b) Use the least squares regression line as a model to estimate the sales of the company in 2012. **(6 marks)**

Question 4

During animal breeding, various information is considered before selecting parents for the next generation. By so doing certain population dynamics are affected such as the Hardy Weinberg equilibrium.

a) State the Hardy-Weinberg Law and how it will be affected by artificial selection of parents for the next generation. **(2 marks)**

b) Describe the conditions/factors that satisfy the Hardy-Weinberg equilibrium. **(9 marks)**

c) Describe the information an animal breeder needs to consider when selecting parents for the next progeny. **(9 marks)**

Question 5

a) Draw a labeled diagram to show the various phases or stages of the cell cycle and hence briefly, describe the cell cycle regulatory events occurring at the border between G_2 and mitosis. **(6 marks)**

b) By way of definition and cell type of occurrence, differentiate Mitosis and Meiosis and hence using a seven (7) and three (3) points statements, respectively, state the significance of each of the two processes. **(14 marks)**

Question 6

a) Clearly, describe the five (5) Watson-Crick features of Deoxyribonucleic acids (DNA). **(10 marks)**

b) Distinguish gene linkage and sex linked alleles. **(4 marks)**

c) The sex linked alleles K and k responsible for determining the rate of feathering in chicks has been applied in the poultry industry to identify male from female chicks.

i) Determine the proportion of slow feathering males and fast feathering females from a cross between rapid feathering male (kk) and a slow feathering female (KY) showing all your calculations. **(4 marks)**

ii) Clearly, describe another method you know which is used to determine the sex of the chicks at hatching. **(2 marks)**

Question 8

a) Define "Gene Transfer", hence briefly, describe a method of gene transfer that involves transfer of the whole genome and give the main advantage of using biotechnology in improving traits in animal breeding over the traditional animal breeding procedures. **(10 marks)**

b) Define Quantitative Trait Locus (QTL) and hence describe two examples, including their disadvantages, of target traits that have been improved using marker-assisted-breeding. **(10 marks)**

Question 7

Write short notes on:

a) Embryonic stem technology in biotechnology in animal breeding. **(5 marks)**

b) Nitrous Acid (HNO_2) as a mutagen. **(5 marks)**

c) General structure of a gene **(5 marks)**

d) Histones **(5 marks)**

End of Examination

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE

FINAL-YEAR SEPTEMBER EXAMINATIONS-2016/17 ACADEMIC YEAR

ANIMAL PRODUCTION AND NUTRITION (VMB 2500)

Duration: 3 hours

INSTRUCTIONS:

1. Answer a total of **five (5)** questions only.
2. ALL questionscarry equal marks of 20each
3. Write in legible handwriting

SECTION A: [Answer QUESTION 1 and ANY OTHER 2 questions from this section]

QUESTION 1. Discuss in Detail the characteristics, origin, function and temperament of the following breeds of cattle.

a) Friesians
b) Brown Swiss
c) Jersey
d) Tonga
e) Angoni
f) Brahman
g) Hereford
h) Charolais
i) Sussex
j) Afrikander

QUESTION2.Mention and discuss in detail advantages as well as disadvantages of raising pigs.

QUESTION 3.Discuss in detail a typical lactation curve of a dairy cow, mentioning all stages in the curve and the kind of management required in each stage.

QUESTION 4.Discuss in detail all milk production systems practiced worldwide.

SECTION B: [Answer the one question in this section]

QUESTION5. Answer the following questions regarding nutrition.

a) Discuss the functions of nutritionally important minerals giving three (3) specific examples.
b) Vitamin D (Calcitriol) is an important vitamin in metabolism in animals. Discuss:
   (i) the common functional forms of Vitamin D;
   (ii) factors that influence its synthesis;
   (iii) functions of Vitamin D; and
   (iv) Deficiency symptoms of vitamin D.

SECTION C: [Answer ONLY ONE question in this section]

QUESTION6.

a) The proximate analysis of a sample of maize (corn) indicates the following figures (in % of FM):

- moisture	14%	- ashes	1%
- crude protein	9%	- ether extract	4%
- crudefibre	2%	- nitrogen-free-extract	70%

i). What is the percentage of DM of this maize?

ii) What is the percentage of OM?

iii) What is the percentage of carbohydrates?

iv) How many grammes of crude protein (CP) are there in 1 kg of maize?

v) How many grammes of DM are there in 1kg of maize?

(10 marks)

b. Why are the following feedstuffs restricted when formulating rations for poultry?

i). cottonseed cake ii) sunflower cake iii) red sorghum iv) fish meal v) Cassava

(5 marks)

c. Two small scale poultry farmers formulated their own layers mash for feeding layers. Samples of their feed were brought to UNZA laboratory for analysis. The analysis revealed the following information:

Feed Source	ME (Mcal/kg)	CP %	Ca %	P %
Farmer A	2.8	17	3.6	0.5
Farmer B	3.4	8	1.0	0.6

i) What would be your comment on the feeds formulated by the two farmers?

ii) What would be your advice to each farmers?

(5 marks)

QUESTION 7.

Formulate 100 kg of Broiler Finisher using the following feedstuffs:Maize, Soyabean meal (Low fat), Dicalcium phosphate, Limestone flour, Salt and Premix. The ration should be balanced in terms of calcium, phosphorus and crude protein. Please use the following restrictions: Salt 0.5%, premix 0.3%. (20 marks).

Table 1: Nutritional Requirements of Poultry(Expressed per kg of diet) – Standard

FEED	ME (Mcal/kg)	CP %	MAXIMUM		Lys %	Meth %	M+C%	Ca %	P%
			EE%	CF%					
Chick Mash	2.8	20	5	5	1.0	0.45	0.8	1.0	0.7
Growers Mash	2.8	16	5	5	0.80	0.32	0.7	1.0	0.6
LAYERS									
Complete	2.8	16.5	6	5	0.70	0.28	0.6	3.5	0.6
High Energy	2.85	17	5	5	0.75	0.30	0.65	3.5	0.6
BROILERS									
Starter	3.1	22	9	3.5	1.2	0.50	0.9	1.0	0.8
Finisher	3.2	20	10	3.5	1.0	0.45	0.8	1.0	0.7
Parent Stock	2.7	16	5	6	0.7	0.28	0.6	3.0	0.7

Table 2. Common Feed Ingredients Available in Zambia and their NutrientLevels

FEED STUFF	ME (Mcal/kg	CP %	LYS %	M+C %	MET %	Ca %	P %	Moist %
Maize	3.34	8.7	0.22	0.35	0.2	0.04	0.30	13.1
Sorghum	3.26	10.0	0.23	0.35	0.16	0.03	0.30	12.6
Cassava	3.09	2.0	0.07	0.05	0.03	0.15	0.10	12.5
Maize bran	2.74	11.0	0.36	0.36	0.17	0.10	0.50	12.5
Soyabean meal(fullfat)	4.00	40.0	2.27	1.03	0.51	0.23	0.52	11.5
Soya bean meal (low fat)	2.18	43.5	2.65	1.26	0.61	0.31	0.65	12.0
Sunflower seed meal	1.37	28.5	0.97	1.11	0.63	0.33	1.08	11.7
Sunflower seed cake	1.51	29.1	0.99	1.13	0.64	0.36	1.16	9.5
Cotton seed meal	1.51	36.6	1.39	1.21	0.59	0.20	1.03	10.1
Cottonsed cake	1.84	37.1	1.41	1.22	0.59	0.24	1.09	8.0
Blood meal	3.02	87.5	8.4	2.27	1.14	0.17	0.17	9.4
Bone meal	1.5	40.7	1.83	0.77	0.45	16.04	7.42	9.5
Meat meal	3.09	58.2	3.26	1.4	0.87	6.0	2.9	5.2
Fish meal	3.32	65.9	5.07	2.44	1.85	3.5	2.6	8.3
Soya oil	9.3	-	-	-	-	-	-	0.5
Animal fat	8.5	-	-	-	-	-	-	0.5
Dicalcium Phosphate	-	-	-	-	-	24.0	18.0	1.0
Limestone	-	-	-	-	-	38.0	-	1.0
Salt(NaCL)	-	-	-	-	-	-	-	-

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE

SUPPLEMENTARY/DEFERRED EXAMINATIONS– OCTOBER 2017
2016/17 ACADEMIC YEAR

ANIMAL PRODUCTION AND NUTRITION (VMB 2500)

Duration: 3 hours

INSTRUCTIONS:

1. Answer a total of **five (5)** questions only
2. ALL questionscarry equal marks of 20each
3. Write in legible handwriting

SECTION A: [Answer QUESTION 1 and ANY OTHER 2 questions from this section]

QUESTION 1. Discuss in Detail the characteristics, origin, function of the following breeds of animals:

a) Large White **(2 marks)**
b) Land Race **(2 marks)**
c) Duroc **(2 marks)**
d) Berkshire **(2 marks)**
e) Hampshire **(2 marks)**
f) Friesian **(2 marks)**
g) Brown Swiss **(2 marks)**
h) Charolais **(2 marks)**
i) Jesrsey **(2 marks)**
j) Hereford **(2 marks)**

QUESTION2.

a) Mention and discuss two types of crush pens commonly used by farmers.**(10 marks)**
b) Discuss the function of the crush pens.**(10 marks)**

QUESTION 3.

a) Draw a sketch diagram of a plunge dip tank and show movement of cattle in and out of the facility. **(10 marks)**
b) Mention all the advantages of using dip tanks in the process of disease control. **(10 marks)**

QUESTION 4.

Draw sketch diagrams of the following milk parlours showing movements of dairy animals in and out of them.

a) Tandem
b) Triangle
c) Herring bone
d) Abreast
e) Rotary

SECTION B: [Answer the one question in this section]

QUESTION5.

With the aid of an illustration (diagram) give a detailed explanation of the process of lipid digestion and absorption in a monogastric animal. **(20 marks)**

SECTION C: [Answer ONLY ONE question in this section]

QUESTION6.

a) The composition of rice-bran ("as fed") is as follows:

- ashes 120 grs/Kg
- CP 140 grs/Kg
- EE 150 grs/Kg
- CF 100 grs/Kg
- NFE 390 grs/Kg

Questions:

What is the composition of the rice-bran in the DM?

i) in % of the DM **(5 marks)**

ii) in grammes per Kg of DM **(5 marks)**

b) Why are the following feedstuffs restricted when formulating rations for poultry?

i). cottonseed cake ii) sunflower cake iii) red sorghum iv) fish meal v) Cassava

(5 marks)

c) Two small scale poultry farmers formulated their own layers mash for feeding layers. Samples of their feed were brought to UNZA laboratory for analysis. The analysis revealed the following information:

Feed Source	ME (Mcal/kg)	CP %	Ca %	P %
Farmer A	2.8	17	3.6	0.5
Farmer B	3.4	8	1.0	0.6

i) What would be your comment on the feeds formulated by the two farmers?

ii) What would be your advice to each farmers?

(5 marks)

QUESTION 7.

. Formulate 100 kg of Layers Mash using the following feedstuffs:Maize, Soyabean meal (Low fat), Dicalcium phosphate, Limestone flour, Salt and Premix. The ration should be balanced in terms of calcium, phosphorus and crude protein. Please use the following restrictions: Salt 0.5%, premix 0.3%. **(20 marks).**

Table 1: Nutritional Requirements of Poultry(Expressed per kg of diet) – Standard

FEED	ME (Mcal/kg)	CP%	MAXIMUM		Lys %	Meth %	M+C %	Ca %	P %
			EE%	CF%					
Chick Mash	2.8	20	5	5	1.0	0.45	0.8	1.0	0.7
Growers Mash	2.8	16	5	5	0.80	0.32	0.7	1.0	0.6
LAYERS									
Complete	2.8	16.5	6	5	0.70	0.28	0.6	3.5	0.6
High Energy	2.85	17	5	5	0.75	0.30	0.65	3.5	0.6
BROILERS									
Starter	3.1	22	9	3.5	1.2	0.50	0.9	1.0	0.8
Finisher	3.2	20	10	3.5	1.0	0.45	0.8	1.0	0.7
Parent Stock	2.7	16	5	6	0.7	0.28	0.6	3.0	0.7

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE

SUPPLEMENTARY/DEFERRED EXAMINATIONS – OCTOBER 2017
2016/17 ACADEMIC YEAR

COMPARATIVE AND APPLIED VETERINARY ANATOMY (VMB 3121)

Duration: 3 hours

INSTRUCTIONS:

1. **Attempt only five (5) questions**
2. **All questions carry equal marks**

QUESTION 1

Describe the various types of feathers of the domestic fowl. Comment on the management of feathers in flight prevention. **(20 marks)**

QUESTION 2

Compare and contrast the colon in the pig, the domestic fowl and the horse. **(20 marks)**

QUESTION 3

a) Discuss from the anatomical point of view the statement "the horse is an obligate nasal breather" **(5 marks)**
b) Describe the strap muscles that are located ventral to the trachea in the horse. Include in your description their form, innervation and action. **(15 marks)**

QUESTION 4

Describe the neurological, myological and vascular elements of the equine metacarpus region (an illustrative diagram may be useful). **(20 marks)**

QUESTION 5

Write short notes on the following.

a) Renal portal valve in birds **(5 marks)**
b) Inguinal canal of the pig **(5 marks)**
c) Frontal bone of the bovine **(5 marks)**
d) Mediastinum of the horse **(5 marks)**

QUESTION 6

Give a detailed account of the equine maxillary sinus. **(20 marks)**

QUESTION 7

Describe the lymph nodes of the head in the bovine. **(20 marks)**

END OF EXAM

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE

SUPPLEMENTARY/DEFERRED EXAMINATIONS – OCTOBER 2017
2016/17 ACADEMIC YEAR

VETERINARY PHARMACOLOGY - VMB 3600

INSTRUCTIONS:

1. **Duration**: 3 hours
2. Answer ALL questions from Section A and two (2) questions from Section B.
3. ALL questions are 20 marks each
4. Write in LEGIBLE handwriting

SECTION A: [Answer ALL questions in this section]

QUESTION 1.

The effectiveness of drugs depends on their characteristic properties. Briefly discuss the following properties of drugs and their pharmacological importance.

a) Potency (2 **marks**)
b) Bioavailability (2 **marks**)
c) Biological half-life (2 **marks**)
d) Efficacy (2 **marks**)
e) Plasma clearance (2 **marks**)
f) Biotransformation (2 **marks**)
g) Liver mierosomal enzyme induction (2 **marks**)
h) Adverse reactions (2 **marks**)
i) Therapeutic index (2 **marks**)
j) Loading dose (2 **marks**)

QUESTION2.

a) Describe features of osmotic, secretory and mixed diarrhoea. (10 **marks**)
b) Discuss the approach you would take in treatment of a case of diarrhoea in a dog. (10 **marks**)

QUESTION 3.

Mention two (2) drugs of choice that can be used to treat diseases related to the following agents [**1 mark each**]:

i. *Trypanosomavivax*	v. *Trichomonas fetus*	xiii. *Ehrlichiaruminantium*
ii. *Babesiabovis*	vi. *Taeniasolium*	xiv. *Emeriatenella*
iii. *Moniezaexpansa*	vii. *Fasciola hepatica*	xv. *Entamoebadysenteriae*
iv. *Anaplasmamarginale*	viii. *Mange mites*	xvi. *Theileriaparva*
	ix. *Rhipicephalusappendiculatus*	xvii. *Gastrophillusintestinalis larvae*
	x. *Bunostomumphlebotomum*	xviii. *Demodexphylloides*
	xi. *Trichostrongylusaxei*	xix. *Histomonasmeleagridis*
	xii. *Mycoplasma mycoides*	xx. *Heartworm*

QUESTION4. Discuss the general properties, mode of action, clinical use and side effects of the following drugs:

a) Cephalosporines [**5 marks**]
b) Diaminopyrimidines [**5 marks**]
c) Griseofulvin [**5 marks**]
d) Quinapyramine [**5 marks**]

SECTION B: [Answer TWO (2) questions in this section]

QUESTION5.

Discuss the mode of action and pharmacological effects of acepromazine.

(20 marks)

QUESTION6.

Inflammation and pyrexia are normal physiological responses to injury. Excessive inflammatory reactions can be harmful and need to be controlled.

i) List four (4) anti-inflammatory pyrazolone derivatives, their mode of action, pharmacological effects and specific clinical indications. **(10 marks)**

ii) Summarise the arachidonic acid cascade indicating sites of action of anti-inflammatory agents. **(10 marks)**

QUESTION 7.

Name the mode of action and one disease that can be treated by each one of the following drugs **[1 mark each]**:

i. Moxidectin	v. Monensin	xiii. Clorsulon
ii. Morantel	vi. Cloxacillin	xiv. Chlorpyriphos
iii. Ketoconazole	vii. Deltamethrin	xv. Isometamidium
iv. Amprolium	viii. Parvaquone	xvi. Niclosamide
	ix. Albendazole	xvii. Dimetronidazole
	x. Vincristine	xviii. Amitraz
	xi. Praziquantel	xix. Norfloxacin
	xii. Lasalocid	xx. Imidocarb

QUESTION 8. Discuss the general properties, mode of action and clinical use of the following classes of compounds:

a) Organophosphates **[10 marks]**

b) Salicylanilides **[10 marks]**

END OF EXAMINATION

UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

VMP 3100 VETERINARY PATHOLOGY EXAMINATIONS – September 2017

TIME: **Three (3) hours**

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

(ii) Answer each question in a separate answer book let

QUESTION 1

Discuss /Describe **four (4)** of the following terms:

(a) Pathogenesis of demyelination **(5 marks)**
(b) Dystrophic calcification **(5 marks)**
(c) Types of atrophy **(5 marks)**
(d) Neoplastic metastasis **(5 marks)**
(e) Intrinsic causes of neoplasia **(5 marks)**
(f) Hepatic encephalopathy **(5 marks)**

QUESTION 2

Answer any **two (2)** of the following:

a) Describe the causes of bronchostenosis. What are the consequences of this complication? **(10 marks)**
b) Discuss the basic neuronal cellular degenerative lesions of the central nervous system **(10 marks)**
c) Define necrosis and outline the types **(10 marks)**

QUESTION 3

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

(a) Compare and contrast acute vs chronic inflammatory features **(5 marks)**
(b) Briefly discuss granulomatous inflammation **(5 marks)**
(c) Briefly describe testicular degeneration in animals **(5 marks)**
(d) Briefly describe the pathological features of hyperplasia of the prostate **(5 marks)**
(e) Briefly describe transmissible venereal tumour **(5 marks)**
(f) Briefly describe the causes and features of endometrial hyperplasia **(5 marks)**

QUESTION 4

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

(a) Briefly describe hypertrophic osteopathy **(5 marks)**
(b) Briefly describe Porcine Stress Syndrome **(5 marks)**
(c) Compare and contrast azoturia and capture myopathy **(5 marks)**
(d) Briefly describe the pathogenesis of Downer Syndrome **(5 marks)**
(e) Briefly describe the pathology of blackleg **(5 marks)**
(f) Briefly describe rhabdomyosarcoma **(5 marks)**

QUESTION 5

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

a) Factors that determine the development of pneumoconiosis **(5 marks)**
b) The pathogenesis of thrombosis **(5 marks)**
c) Cardiogenic shock **(5 marks)**
d) Tropism **(5 marks)**
e) Absolute polycythaemia **(5 marks)**
f) Myeloid hyperplasia **(5 marks)**

QUESTION 6

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

a) Acral lick dermatitis **(5 marks)**
b) Hepatogenous (Type III) photosensitisation **(5 marks)**
c) Consequences of valvular endocarditis **(5 marks)**
d) Hyperadrenocorticism (Cushings) **(5 marks)**
e) Vascular obstruction of the gut **(5 marks)**
f) Post-mortem bile dilatation of the bowel **(5 marks)**

END OF EXAMINATION

UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

VMP 3100 VETERINARY PATHOLOGY SUPPLEMENTARY EXAMINATIONS – 27th October 2017

TIME: **Three (3) hours**

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

(ii) Answer each question in a separate answer book let

QUESTION 1

Discuss /describe **four (4)** of the following terms

- **(a)** Caseous necrosis **(5 marks)**
- **(b)** Dystrophic calcification **(5 marks)**
- **(c)** Types of atrophy **(5 marks)**
- **(d)** Neoplastic metastasis **(5 marks)**
- **(e)** Intrinsic causes of neoplasia **(5 marks)**
- **(f)** Hepatic encephalopathy **(5 marks)**
- **(g)** Pathogenesis of demyelination **(5 marks)**

QUESTION 2

Write short notes on **two (2)** any of the following:

- **(a)** Vitamin A Deficiency as it affects the central nervous system **(10 marks)**
- **(b)** Hydrocephalus **(10 marks)**
- **(c)** Leukodystrophies **(10 marks)**
- **(d)** Microglial cells **(10 marks)**
- **(e)** Gliosis **(10 marks)**

QUESTION 3

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

- **(a)** Briefly describe the pathophysiology (sequence of events) of inflammation (5 marks)
- **(b)** Briefly discuss suppurative inflammation **(5 marks)**
- **(c)** Briefly describe sertoli cell tumour in animals **(5 marks)**
- **(d)** Briefly describe the pathological features of hyperplasia of the prostate **(5 marks)**
- **(e)** Briefly describe exrat0ovarian lesions of cystic ovaries in cows **(5 marks)**
- **(f)** Briefly describe granulosa cell tumour in large animals **(5 marks)**

QUESTION 4

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

- **(a)** Briefly describe nutritional myopathy **(5 marks)**
- **(b)** Briefly describe acute pyelonephritis **(5 marks)**
- **(c)** Compare and contrast acute and chronic renal failure **(5 marks)**
- **(d)** Briefly describe osteoporosis **(5 marks)**
- **(e)** Briefly describe the pathology of blackleg **(5 marks)**
- **(f)** Briefly describe cryptorchidism in dogs **(5 marks)**

QUESTION 5

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

- **a)** Lipofuscin **(5 marks)**
- **b)** Infarction **(5 marks)**
- **c)** Cardiogenic shock **(5 marks)**
- **d)** Tropism **(5 marks)**
- **e)** Absolute polycythaemia **(5 marks)**
- **f)** Myeloid hyperplasia **(5 marks)**

QUESTION 6

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

- **a)** Acral lick dermatitis **(5 marks)**
- **b)** Hepatogenous (Type III) photosensitisation **(5 marks)**
- **c)** Consequences of valvular endocarditis **(5 marks)**
- **d)** Primary hypofunction of an endocrine gland **(5 marks)**
- **e)** Intussusception **(5 marks)**
- **f)** Traumatic reticulo-pericarditis **(5 marks)**

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
END OF YEAR AUGUST/SEPTEMBER EXAMINATIONS-2016/17 ACADEMIC YEAR

VETERINARY MICROBIOLOGY AND IMMUNOLOGY (VMP 3300)

Duration: 3 hours

INSTRUCTIONS:

1. Please read the instructions and each question carefully
2. Answer **ALL** questions
3. **EACH** question must be answered in a separate answer booklet
4. **ALL** questions carry equal marks
5. Write in a legible handwriting

SECTION I: IMMUNOLOGY

Question1.

Write brief and informative comments on **ANY FOUR (4)** of the following:

a) Attenuation of organisms used in vaccines **(5 Marks)**

b) MHC Class II **(5 Marks)**

c) Reasons for failure of passive transfer **(5 Marks)**

d) IgM **(5 Marks)**

e) Macrophages **(5 Marks)**

f) Primary lymphoid organs **(5 Marks)**

g) Immunity against worms **(5 Marks)**

SECTION II: BACTERIOLOGY

Question 2

a) Discuss the process of infection and disease production by bacteria under the following headings:

i. Entrance and establishment of bacteria within the host **(5 Marks)**

ii. Mechanisms of disease production **(5 Marks)**

b) Give an account of normal bacterial flora, with examples showing their contribution to animal health and disease **(10 Marks).**

Question 3

Write brief and informative comments on **ANY FOUR (4)** of the following:

a) Isolation and identification of *Salmonella gallinarum* from an infected poultry flock **(5 Marks)**
b) The division of *Clostridium* species based on their disease producing mechanism **(5 Marks)**
c) Types of infections caused by bacteria **(5 Marks)**
d) Significance of plasmids in Veterinary science **(5 Marks)**
e) Mycolic Acid **(5 Marks)**
f) *Corynebacterium renale* **(5 Marks)**

SECTION III: VIROLOGY

Question 4

Write short illuminating notes on the following:

a) Factors determining whether or not overt disease will result following a viral infection. **(5 Marks)**
b) Biological functions of viral proteins. **(5 Marks)**
c) What is meant by antigenic drift and antigenic shift in Virology. **(5 Marks)**
d) What is meant by positive and negative sense RNA viruses. **(5 Marks)**

SECTION IV: MYCOLOGY

Question 5

Briefly and concisely comment on **ANY FOUR (4)** of the following:

a) Sabouraud's Dextrose Agar **(5 Marks)**
b) Phylum Deuteromycota **(5 Marks)**

c) Beneficial effects of fungi to man **(5 Marks)**

d) The main Nutrition component required by Dermatophytes in the skin, hail and feathers **(5 Marks)**

e) Rough classification of fungal toxins **(5 Marks)**

f) Inhalation as one of the major routes of fungi infection leading to mycotic abortion **(5 Marks)**

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
END OF YEAR AUGUST/SEPTEMBER EXAMINATIONS-2016/17 ACADEMIC YEAR

VETERINARY PARASITOLOGY (VMP 3400)

Duration: 3 hours

INSTRUCTIONS:

1. Please read the instructions and each question carefully
2. Answer **ALL** questions
3. **EACH** question must be answered in a separate answer booklet
4. **ALL** questions carry equal marks
5. Write in a legible handwriting

SECTION A: PROTOZOOLOGY

QUESTION 1

Imagine that you are posted to Monze in Southern Province of Zambia soon after graduating as a veterinary doctor. Soon on your arrival you are informed that cattle in Njola area of Monze are dying of a disease which is mainly killing animals of six (6) months and above with swellings below their ears.

a) What would be your tentative diagnosis? (**2 Marks**)

b) What steps would you take to confirm your tentative diagnosis? (**6 Marks**)

c) What control measures would you recommend against this outbreak. (**12 Marks**)

QUESTION 2

Write **SHORT NOTES** on **ANY FOUR (4)** of the following topics:

a) Life cycle of protozoan parasites belonging to the Order Piroplasmida (**5 Marks**)

b) Modes of transmission of protozoan parasites belonging to the Sub-Phylum Mastigophora (**5 Marks**)

c) Modes of reproduction in protozoan parasite (**5 Marks**)

d) Basic Classification of protozoan parasites called Coccidia (**5 Marks**)

e) Antigenic variation in a named protozoan parasite (**5 Marks**)

f) Enzootic stability in a named protozoan parasite (**5 Marks**)

PLEASE TURN OVER

SECTION B: HELMINTHOLOGY

QUESTION 3

You are a senior and only Parasitologist at a research institution. You are informed that a dairy cooperative is inviting a member of the institution to give a talk to cooperative members on trematode parasites that commonly affect ruminants. The talk should be centred on the following questions the farmers have.

a) What is a trematode? (**2 marks**)

b) Give **three (3)** examples of common trematodes in cattle and explain how cattle become infected. (**6 marks**)

c) Select **two (2)** of the three parasites named in (b) above and describe their life cycles. (**12 marks**)

QUESTION 4

Write **SHORT NOTES** on **ANY FOUR (4)** of the following topics:

a) Classical morphology of tapeworms **(5 marks)**

b) Thelaziosis in cattle (**5 marks**)

c) The whipworm of dogs **(5 marks)**

d) The importance of a flea in helminthology (**5 marks**)

e) *Strongyloides stercoralis* (**5 marks**)

f) The equine ascarid **(5 Marks).**

SECTION C: ENTOMOLOGY

QUESTION 5

During one of your lectures in the Helminthology component of Parasitology, you learnt that the intermediate host of the **cucumber worm** is one of the arthropods which you learnt about in the Entomology component of this same course (Parasitology).

a) What is the **intermediate host** of the cucumber worm **(2 marks)**

b) To what **Phylum**, **Class**, **Order** and **genus** does the intermediate host of the cucumber worm belong? **(8 marks)**

c) Explain in detail the life cycle of the **intermediate host** of the cucumber worm. **(8 marks)**

d) What developmental stage of the **cucumber worm** is found **in the arthropod**? **(2 marks)**

QUESTION 6

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

a) The lifecycle of the vectors of East Coast fever **(5 marks)**

b) Laboratory diagnosis of ~~demodicosis~~ demodicosis (5 marks)

c) The lifecycle and veterinary significance of common house flies (*Musca domestica*). **(5 marks)**

d) Veterinary importance of short-horn flies **(5 marks)**

e) Life cycle and veterinary significance of *Melophagus ovinus*. **(5 marks)**

f) The 4 types of harm that uncontrolled ticks can cause to livestock. **(5 marks)**

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

DEFERRED/SUPPLEMENTARY EXAMINATIONS-2016/17 ACADEMIC YEAR

PROPAEDEUTIC TO VETERINARY CLINICAL MEDICINE (VMC 4101)

DURATION: 3 hours

INSTRUCTIONS:

1. Please read the instructions and each question carefully.
2. Answer **All** questions from section A and **THREE (3)** questions from section B
3. Write the answer to each question on a separate answer sheet.
4. **All** questions carry equal marks
5. Write in an legible handwriting

.....SECTION A.....

QUESTION 1

Horses are primarily kept for their athletic abilities and therefore used in many equestrian events throughout the world. A healthy musculoskeletal system of the horse is important in the optimal performance of the athletic horse. A derangement of this body system causes the horse to perform poorly or not perform at all.

a) Discuss the clinical examination of the horse's muscles and bones highlighting the pathologies associated with these important parts. **(10 marks)**

b) Outline the clinical manifestations of a musculoskeletal disorder in a horse. **(2 marks)**

c) Discuss the lameness grading system of the Association of American Equine Practitioners. **(5 marks)**

d) Most lamenesses in horses occur in the foot. Outline how you would examines a horse's foot, including instruments you would use, to come up with a diagnosis of the cause of the lameness. **(3 marks)**

QUESTION 2

Discuss the investigation of nasal discharge in a dog with reference to the following:

a) Signalment **(5 marks)**

b) History **(5 marks)**

c) Clinical signs **(10 marks)**

QUESTION 3

A physical examination is a routine medical procedure in which the physical symptoms of a patient are measured in order to determine if those symptoms fall within the normal range of that animal.

a) Describe how you would carry out history-taking at a piggery afflicted by a disease? **(6 marks)**

b) List **(4) four** vital parameters that must be considered during the physical examination of a ruminant. **(4 marks)**

c) Outline how cattle should be restrained during physical examinations?**(4 marks)**

d) Discuss how you would restrain pigs of different age groups. **(6 marks)**

.....SECTION B.....

QUESTION 4

Taking of pulse is an important aspect of the clinical examination procedure.

a) Describe aspects of pulse that you would examine for. **(3 marks)**

b) Outline **(5) five** factors that would affect pulse in domestic animals. **(5 marks)**

c) For each of the major domestic animals, list two arteries which you would palpate during the assessment of pulse. **(7 marks)**

d) Describe the types of irregularities of pulse rhythm and how you would clinically differentiate them. **(3 marks)**

e) State one cause for each of the irregularities in pulse rhythm. **(2 marks)**

QUESTION 5

Briefly, discuss the importance of signalment in the following in Small Animals:

a) Skin conditions **(5 marks)**

b) Eye conditions **(5 marks)**

c) Gastrointestinal conditions **(5 marks)**

d) Neurological conditions **(5 marks)**

QUESTION 6

A five-year-old dog is presented with congestive heart failure. On auscultation, you detect a distinct heart murmur.

a) Outline other information which you may be able to get by ausculting a dog's heart **(5 marks)**

b) Outline how you would describe the heart murmur **(10 marks)**

c) Briefly, discuss the ancillary tests you would carry out in this case **(5 marks)**

QUESTION 7

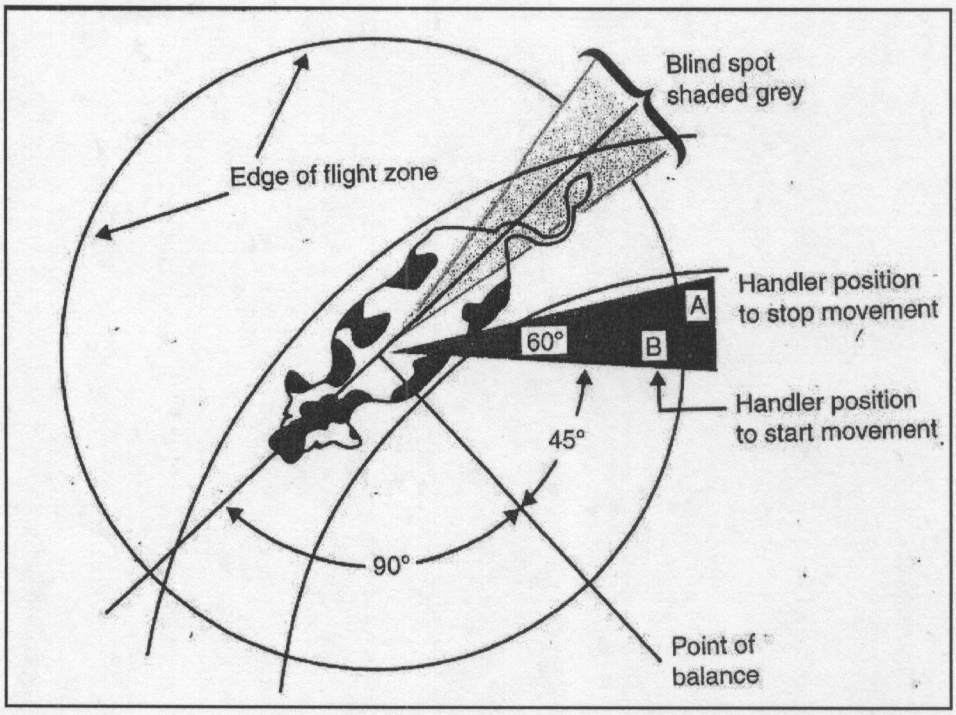
Training People in Low Stress Animal Handling is important because calm animals are easier and safer to handle. There is also need to understand the animal behavioral principles shown in the diagram below. Study the diagram below and explain what you understand by:

a) Flight zone **(5 marks)**

b) Edge of flight zone **(5 marks)**

c) Blind spot **(5 marks)**

d) Point of balance **(5 marks)**



THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
END OF YEAR SUPPLEMENTARY/DEFERRED EXAMINATIONS-2016/17
ACADEMIC YEAR

COMPANION ANIMAL MEDICINE (VMC 4112)

Duration: 3 hours

INSTRUCTIONS:

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

.....SECTION A.....

QUESTION 1

A race horse is seen to slow down and eventually stop during a competition. It later starts coughing and blood trickling from the nose as it is walked off the race track.

a) What is your tentative diagnosis? **(4 marks)**
b) List **two (2)** differential diagnoses. **(2 marks)**
c) How would investigate the case to confirm the tentative diagnosis in (a) above. **(4 marks)**
d) Outline the aetiopathogenesis of the condition in (a) above including, if any, predisposing factors. **(4 marks)**
e) Discuss in detail how you would manage the condition in (a) above. **(6 marks)**

QUESTION 2

You are presented with a 10-month-old neutered female dog with haematuria of 3 days duration. The owner reports that the dog is eating and drinking normally, however, she has noticed that the dog urinates frequently but the amount of urine is small. The dog strains when urinating, and the blood is seen at the start of urination.

a) What is your tentative diagnosis? **(2 marks)**
b) List **two (2)** differential diagnosis. **(2 marks)**
c) What are the predisposing factors in (a) above? **(4 marks)**
d) How would you confirm your diagnosis in the condition in (a) above? **(10 marks)**
e) Outline the appropriate medical management of this case. **(2 marks)**

QUESTION 3

A 5-year-old female, domestic short haired cat is presented to you with a history of anorexia and rapid weight loss. You examine the cat and find that she is depressed, dehydrated and obvious loss of muscle mass.

a) What is your tentative diagnosis? **(2 marks)**
b) List **three** (3) differential diagnoses. **(3 marks)**
c) Outline the predisposing factors associated with the condition mentioned in (a) above and outline the aetiopathogenesis of the condition. **(7 marks)**
d) Outline your client education. **(3 marks)**
e) How you would manage this case? **(5 marks)**

.....SECTION B.....

QUESTION 4

Brachycephalic airway syndrome (BAS) is a common problem in small animal practice. Early intervention is essential for the long-term survival of patients with BAS.

a) List the primary components of this syndrome. **(3 marks)**
b) List the secondary components of BAS. **(3 marks)**
c) Describe the clinical presentation of BAS. **(4 marks)**
d) Describe the pathophysiology of BAS. **(5 marks)**
e) Describe the medical management of BAS. **(5 marks)**

QUESTION 5

Sarcoids account for 35–90% of dermatological neoplasms in horses.

a) Define a sarcoid. **(2 marks)**
b) Outline the aetiology of sarcoids including, if any, predisposing factors. **(4 marks)**
c) Briefly outline four (4) types of sarcoids. **(4 marks)**
d) Outline **five** (5) treatment options for sarcoids, giving a likely prognosis for each option. **(10 marks)**

QUESTION 6

A six-month-old mongrel is presented with diarrhoea of two days duration. According to the owner, the dog was seen eating some of the spoiled food that he had thrown out. On clinical examination the diarrhoea is watery. Further clinical exam reveals dehydration and temperature of 40°C. The puppy is fully vaccinated and dewormed.

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

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

c) Briefly describe the pathogenesis of the condition in (a) above. **(4 marks)**

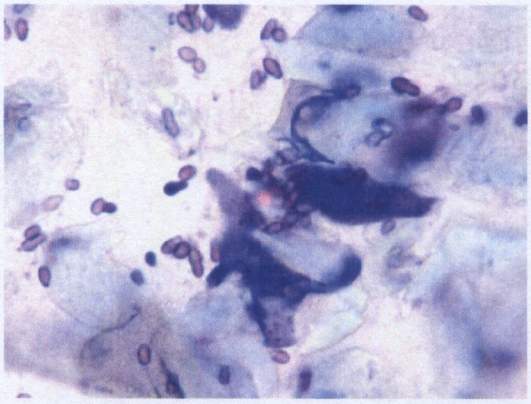
d) Outline the ancillary tests you would carry out to confirm your tentative diagnosis in (a) above.

(4 marks)

e) Briefly outline your management of this case. **(8 marks**

QUESTION 7

A seven-year-old intact female dog is presented to your practice with evidence of an intensely pruritic skin condition affecting the ventral neck, interdigital areas, axillae and perineal region. The lesions are alopecic and erythematous. You carry out a skin scrapping and find the organism shown below.



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

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

c) Briefly describe the pathogenesis of the condition in (a) **(5 marks)**

d) Briefly outline the management options of this case. **(8 marks)**

e) Outline your client advice to the owner of this dog **(2 marks)**

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
School of Veterinary Medicine
Deferred and Supplementary Examinations – 2016/2017

VETERINARY EPIDEMIOLOGY (VMD 4201)

Instructions

Read the instructions carefully before attempting to answer any questions
All questions carry equal marks
State all assumptions and show all calculations
Answer all questions
Answer each question in a separate answer booklet
Time allowed is three (3) hours

Question 1

a) What are the general objectives of investigating outbreaks? What do you understand by the following terms? **(5 Marks)**

   i) Outbreak
   ii) Outbreak investigation

b) What is epidemiological surveillance and/ or monitoring? Differentiate between epidemiological surveillance and epidemiological monitoring and state how they are related Epidemiological diagnosis. **(4 Marks)**

c) Suppose you were a district veterinary officer, what would you do if an OIE list A disease broke out in an area in your district? **(5 Marks)**

d) Define Trans-boundary diseases and classify them according to EMPESS. State which of these classes are regarded as most important and how they are important. **(6 Marks)**

Question 2

a) Compare and contrast between experimental and observational studies **(5 Marks).**

b) Describe the key characteristics of cohort, case–control and cross-sectional studies regarding subject selection, data collection and analysis **(15 Marks).**

Question 3

i) You have been mandated to ensure that the Southern province is free from Foot and Mouth disease (FMD). Explain in detail to the Honourable Minister of Fisheries and Livestock that a well-planned survey would still provide almost the same information as a census for declaration of disease freedom **(10 marks)**

ii) Using clear concise examples discuss the sensitivity versus positive predictive value; their definition, meaning, relationship, application and interpretation **(10 marks)**

Question 4

In order to establish causation in an investigation, there should be association between the putative cause and the disease.

a) Define the term association. **(2 marks)**
b) What are the types of association that we describe in epidemiology? **(6 marks)**
c) Describe the various methods that are used to establish a causal association. **(10 marks)**
d) What measure of association do we calculate in order to establish the strength of association between the cause and the disease? **(2 marks)**

Question 5

At the beginning of the month, a herd had 300 cattle. The owner sold 20 bulls and bought 30 heifers within the same month. Within the same month, there was an outbreak of ECF, which affected 50 cattle from which 10 died of the disease.
From the information given above:

a) Calculate the time at risk (5 Marks)
b) The incidence risk of ECF (5 Marks)
c) The incidence rate of ECF (5 Marks)
d) The case fatality of ECF (5 Marks)

END OF EXAMINATION
Good luck

UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

CLINICAL STUDIES DEPARTMENT

2017 ACADEMIC YEAR

UNIVERSITY DEFERED/SUPPLIMENTARY EXAMINATION

VMC 5100: PROPAEDEUTIC TO CLINICAL VETERINARY MEDICINE

TIME: THREE HOURS (3 HRS)

INSTRUCTIONS:

1. Please read the instructions and each question carefully
2. Answer **ALL** the 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

****

QUESTION 1

1. A client reports to you that while participating in a high level Zambia-Australia polo tournament over the weekend, he noticed that one of his horses did not perform as well as he had expected. The 12-year-old gelding kept slowing down and started bleeding intermittently from the nose during a match. When cooling down, it was also noticed to be coughing. He was hence forced to abandon the horse and use his reserve horse.
   a) What is your diagnosis? **(2 marks)**
   b) Outline the aetiology of the condition in (a) above **(4 marks)**
   c) How would you confirm your diagnosis? **(4 marks)**
   d) List your differential diagnoses? **(2 marks)**
   e) Discuss how you would manage the problem highlighting the prognosis for return of the horse to its previous level of performance. **(8 marks)**

QUESTION 2

Ear diseases are common in small animal practice and are associated with several predisposing factors and primary causes. A thorough investigation is therefore essential for the successful management of these patients.

a) Describe how you would examine a 3-month-old cat presented with head shaking and ear scratching of two weeks duration. **(12 marks)**

b) List **four (4)** clinical signs associated with Horner's syndrome. **(4 marks)**

c) List **four (4)** clinical sings associated with vestibular syndrome. **(4 marks)**

QUESTION 3

The first step of the lameness examination in horses and food animals starts with evaluation of the animal Posture and gait for any obvious signs of disease.

a) Discuss the visual appearance of the standing animal you would consider during your examination. **(5 Marks)**

b) How would you go about examination of posture and gait of a dairy cow? **(5 Marks)**

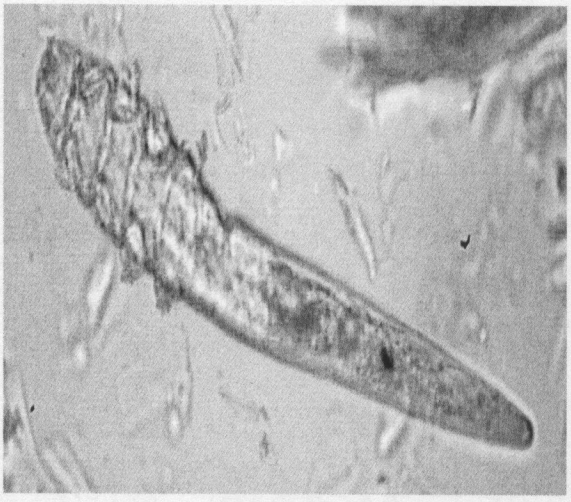
c) How would you physically examine the Claw of a dairy cow? **(10 Marks)**

SECTION B

****

QUESTION 4

A six year-old intact bitch is presented to your practice with evidence of a pruritic skin condition affecting the face and forelimbs. You carry out a deep skin scrapping and find the organism shown below.



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

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

c) Briefly describe the pathogenesis of the condition in (a) above **(5 marks)**

d) Briefly outline the management options of this case. **(8 marks)**

e) Outline your client advice to the owner of this dog **(2 marks)**

QUESTION 5

Write concise notes on the following: **(4 Marks each)**

a) Clinical stages of fever.

b) Types and causes of dyspnea according to the phase of the respiratory cycle in which they occur.

c) Types of jugular pulse and their clinical differentiation.

d) Superficial lymph nodes which are readily accessible for clinical examination in cattle.

e) Physical examination techniques commonly used in veterinary practice.

QUESTION 6

Electrocardiography is an invaluable tool in a dog or cat with heart disease.

a) Draw and label a normal ECG tracing **(10 marks)**

b) Briefly describe the origin of each wave in the ECG in relation to the cardiac cycle **(5 marks)**

c) **Outline** any **five (5)** pieces of information that may be obtained from an ECG. **(5 marks)**

QUESTION 7

Compare and contrast Lumpy skin disease, Foot and mouth disease and Foot rot in cattle. The comparison should be restricted to the following areas:

a. Aetiology and pathogeneses. **(6 marks)**

b. Clinical signs. **(4 marks)**

c. Case management. **(6 marks)**

d. Farmer education. **(4 marks)**

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

END OF YEAR AUGUST/SEPTEMBER EXAMINATIONS-2016/17 ACADEMIC YEAR

PRINCIPLES AND INTRODUCTION TO VETERINARY SURGERY (VMC 5200)

Duration: 3 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 booklet
4. **ALL** questions carry equal marks
5. Write in a legible handwriting

.....SECTION A.....

QUESTION 1

Anaesthesia is a critical aspect in any surgical event and must be administered with care and consideration.

a) Outline the anaesthetic protocols that can be used in the following species for the purpose of limb amputation: **(2 marks each)**
   i. Parrot
   ii. Baboon
   iii. Gecko (lizard)
   iv. Rabbit

b) Briefly outline the anaesthetic considerations in the following patients: **(3 marks each)**
   i. Two-year-old bitch for caesarian section
   ii. Eight-week-old puppy for tail docking
   iii. Ten-year-old dog for orthopaedic surgery
   iv. Eight-year-old cardiac patient for emergency ovariohysterectomy due to pyometra.

QUESTION 2

The breeding for more productive dairy cows has led to cows with larger and deeper abdominal cavities which allow for more movement of the abomasum leading to its displacement.

a) Briefly outline the clinical signs and examination findings in a cow with left sided displacement of the abomasum. **(4 marks)**
b) Outline the conservative management of left displacement of the abomasum. **(2 marks)**
c) List the techniques available to surgically correct a left displaced abomasum. **(4 marks)**
d) Select and discuss in detail **one (1)** surgical technique from (c) above you would use to correct a left displaced abomasum in a cow giving reasons for your selection (Include anaesthesia and post-operative care). **(10 marks)**

QUESTION 3

Write short notes on all of the following: **(4 marks each)**

a) Use of contrast media in abdominal radiography.
b) Radiographic findings of pneumonia in a dog.
c) Radiographic findings of prostatomegaly in a male dog.
d) Factors that affect radiographic contrast in the abdomen and the thorax.
e) Radiographic findings of gastric dilatation and volvulus.

.....SECTION B.....

QUESTION 4

Sutures and ligatures are fundamental to any surgical technique because they maintain approximation of tissues as the wound heals and are used for ligation. Ligation may also be used to achieve surgical haemostasis.

a) Outline **four (4)** reasons why a veterinary surgeon must ensure adequate intraoperative haemostasis. **(4 marks)**
b) List **six (6)** factors that affect surgical haemorrhage. **(3 marks)**
c) Comprehensively discuss the various methods available to the veterinary surgeon to achieve surgical haemostasis. **(13 marks)**

QUESTION 5

Management of shock in canine patients, regardless of the cause, is cardinal in ensuring effective recovery of affected patients.

a) Outline the different types of shock and discuss the mechanisms leading to shock. **(10 marks)**
b) Outline the clinical signs of shock. **(5 marks)**
c) With only crystalloids (**List them**) at your disposal, what parameters would you use to make a decision on which one to use? **(5 marks)**

QUESTION 6

There are many surgical procedures employed in small animals to manage various intestinal and perineal conditions. From the list below, choose any **four (4)** and for each one indicate its indications, brief but concise description of the surgical procedure (exclude anesthesia) and possible postoperative complications. **(5 marks each)**

a) Gastropexy
b) Intestinal resection and anastomosis
c) Y-U pyloroplasty
d) Partial gastrectomy
e) Enteroplication
f) Anal sacculectomy

QUESTION 7

A four-month-old dog is presented to you with a day old wound on its left flank. The technical team has shaved the affected area on your instruction.

a) Which factors could affect healing of the depicted wound? **(5 marks)**

b) Discuss factors that could affect healing that you as a surgeon can directly control? **(5 marks)**

c) Describe in detail how you could successfully manage the case (include pre-, peri- and postoperative care). **10 marks)**

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

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

DEFERRED/SUPPLEMENTARY EXAMINATIONS-2016/17 ACADEMIC YEAR

PRINCIPLES AND INTRODUCTION TO VETERINARY SURGERY (VMC 5200)

Duration: Three (3) 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 booklet
4. **ALL** questions carry equal marks
5. Write in a legible handwriting

.....SECTION A.....

QUESTION 1

General anaesthesia, though routinely performed in small animal practice, must not be taken lightly.

a) What is meant by "anaesthetic emergency"? **(2 marks)**

b) List **three (3)** events that are described as anaesthetic emergencies in dogs. **(3 marks)**

c) Pick **two (2)** events from (b) above and describe the appropriate course of action to correct each of the situations and recover the patient. **(10 marks)**

d) Outline the components of a pre-anaesthetic evaluation and state its importance. **(5 marks)**

QUESTION 2

Gastric dilatation and volvulus (commonly referred to as GDV) is an acute, life threatening condition in dogs. It is also a medical and surgical emergency.

a) List the clinical signs in a dog presented with acute GDV. **(2 marks)**

b) How is GDV diagnosed? **(2 marks)**

c) What are the **two (2)** emergency treatments you should do with such a case? **(4 marks)**

d) In planning such treatment, list the **three (3)** main goals of surgery for GDV. **(6 marks)**

e) Describe in detail how you can successfully manage a case of acute GDV (exclude anesthesia). **(6 marks)**

QUESTION 3

Outline the radiographical features of the following: **(4 marks each)**

a) Pneumothorax

b) Osteoarthritis

c) Malignant tumour of the maxilla

d) Pyometra

e) Pleural effusion

.....SECTION B.....

QUESTION 4

a) Most surgeries in ruminants are done under local analgesia. Discuss why this is generally the case. **(5 marks)**

b) Laparotomy is commonly done in large animals for management of various conditions.

i. List **five (5)** Indications for a laparotomy in livestock. **(5 marks)**

ii. For one of the indications in (i) above, describe in detail the pre-operative care, analgesic protocol, approach and procedure and post-operative care. **(10 marks)**

QUESTION 5

Injectable or inhalation anaesthetics may be used to induce anaesthesia in veterinary surgery.

a) List the main components of an inhalation anaesthetic machine. Against each component, in a single sentence; mention the function of the component. **(8 marks)**

b) List **four (4) i**nhalation anaesthetic agents. **(2 marks)**

c) Comprehensively discuss the advantages and disadvantages of inhalation anaesthesia over injectable anaesthesia. **(10 marks)**

QUESTION 6

Write short notes on any **four (4)** of the following: **(5 marks each)**

a) Preoperative considerations in hepatic surgery.

b) Routes of administration in fluid therapy.

c) Attributes of a canine blood donor.

d) Functions of the spleen and implications of total splenectomy.

e) Methods of calculating fluid deficit in fluid therapy.

QUESTION 7

Ingestion of foreign objects, including those of metallic nature, is common in ruminants due to the indiscriminate nature in their feeding.

a) Briefly outline the harm that such objects can cause in the animal and name the condition(s) caused. **(2 marks)**

b) Describe the aim and the methods used in the medical management of the condition named in (a) above. **(4 marks)**

c) List indications for surgical intervention of the condition named in (a) above. **(4 marks)**

d) Describe the surgical management of the condition named in (a) above (Include anaesthesia and post-operative care). **(10 marks)**

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

THE UNIVERSITY OF ZAMBIA

SCHOOL OF VETERINARY MEDICINE

END OF YEAR AUGUST/SEPTEMBER EXAMINATIONS-2016/17 ACADEMIC YEAR

INTRODUCTION TO VETERINARY REPRODUCTION AND OBSTETRICS

(VMC 5309)

Duration: 3 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 answer to each question in a separate answer booklet
4. **ALL** questions carry equal marks
5. Write in a legible handwriting

.....SECTION A.....

Question 1

Parturition is usually relatively quick for mares, usually only taking a few hours from the start of labour to the expulsion of the placenta. Most parturitions in the mare go smoothly, however, when something goes wrong it can be fatal without no quick intervention. For this reason, well established breeding studs ensure that the mare is closely monitored around the expected date of delivery.

a) Briefly outline the stages of labour in the mare. **(6 marks)**

b) Discuss the endocrinology of parturition in the mare. **(4 marks)**

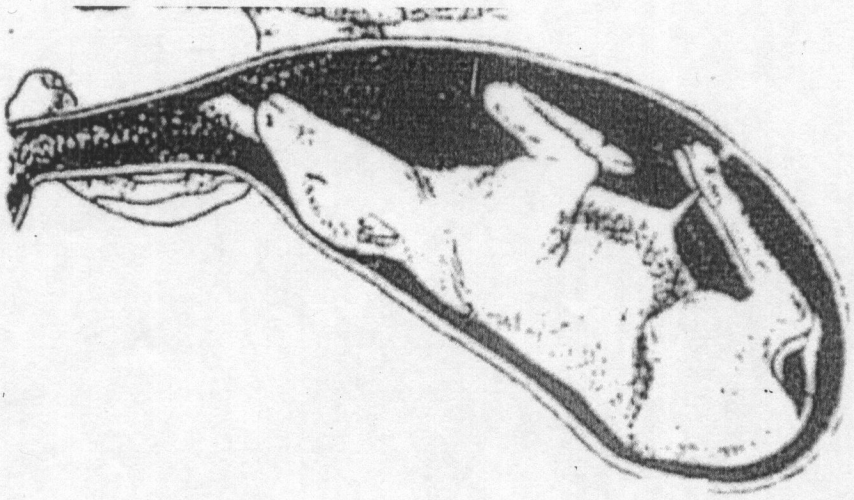
c) Outline circumstances that would require induction of parturition in the mare and a protocol you would use to achieve this. **(4 marks)**

d) Briefly outline **three (3)** preganacy abnormalities in the mare **(6 marks)**

Question 2

Dystocia can be catastrophic and costly through the loss of a mare or her future fertility and/or loss of the foal.

a) Describe the presentation, position and posture of the equine foetus shown in the figure below. **(6 marks)**



b) Describe how you would treat this condition if the foetus is:

i) Alive **(7 marks)**

ii) Dead **(5 marks)**

c) Briefly outline your client education? **(2 marks)**

Question 3

Understanding the oestrus cycle in dogs and cats is important for successful breeding.

a) Give two differences between the oestrous cycle in dogs and that in cats. **(4 marks)**

b) List **three (3)** factors influencing the attainment of puberty in dogs and cats and explain each of them. **(6 marks)**

c) In dogs, vaginal cytology can be used to determine stage of the oestrous cycle. Differentiate between the vaginal cytological findings in pro-oestrus and in oestrus. **(4 marks)**

d) Compare and contrast ovulation in bitches and queens. **(4 marks)**

e) List **two (2)** drugs that can be used for the control of the oestrous cycle. **(2 marks)**

.....SECTION B.....

Question 4

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

a) Factors affecting the length of the postpartum return to ovarian cyclicity in cattle.

b) Agents used and their mode of action in terminating a 45 day pregnancy in a cow.

c) Ring womb in sheep.

d) Hydrometra in the doe.

Question 5

A Mr. Bobo who recently started raising goats calls you to examine a doe that was mated five (5) months ago prior to presentation. The doe was restless and showing signs of abdominal pain with a pink-white fluid filled slippery tissue with some fluid at the vulva.

a) What is your tentative diagnosis? **(4 marks)**

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

c) Describe how the condition developed. **(5 marks)**

d) Discuss how you would treat or manage the condition. **(6 marks)**

e) What advice would you give to Mr. Bobo? **(2 marks)**

Question 6

A farmer living in Ndola suspects that his farm manager in Lusaka West is unable to train his pig-men in a number of basic skills they need to master in order to maximize on the productivity of his piggery. He asks you as an expert to prepare notes for the lessons to the workers covering the following topics:

a) Recognizing oestrus. **(4 marks)**

b) Diagnosing pregnancy using management and clinical methods. **(8 marks)**

c) Diagnosing impending farrowing in sows. **(8 marks)**

Question 7

A dairy cow was presented with a history of prolonged inter-calving interval, and rectal examination revealed bilateral ovarian acyclicity. Following this diagnosis, the cow was injected with 263ug of Cloprostenol Sodium intramuscularly followed by another dose of the same drug five days later. On day 10 after the initial injection, the animal received 0.0211mg of Buserelin Acetate intramuscularly after which the animal was presented for breeding.

a) Discuss the advantages and disadvantages of the above approach. **(10 marks)**

b) Design your own synchronisation protocol for possible timed artificial insemination of this cow so as to reduce the service interval. **(10 marks)**

.....END.....

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
SUPPLEMENTARY/DEFERRED EXAMINATIONS-2016/17 ACADEMIC YEAR
INTRODUCTION TO VETERINARY REPRODUCTION AND OBSTETRICS
(VMC 5309)

Duration: Three (3) 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 answer to each question in a separate answer booklet
4. **ALL** questions carry equal marks
5. Write in a legible handwriting

.....SECTION A.....

Question 1

During your routine farm fertility visit, a cow that was inseminated five (5) months prior is presented to you for examination. The history of the cow indicates that milk production has drastically dropped. Upon examination of the cow, rectal temperature is high (40 °C) and you notice a vaginal discharge. Furthermore, the uterus is enlarged and crepitating on palpation.

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

Question 2

Describe the oestrous cycle of the bitch, explaining how it differs from that of the cat. In your answer, include the endocrinology of the cycle by using a sketch diagram to explain the activity of various hormones. **(20 marks)**

Question 3

The mare is described as a seasonal poly-oestrous breeder because it undergoes several oestrous cycles during the beeding season.

a) Describe how day length influences cyclicity in the mare. **(4 marks)**

b) List the positive behavioural signs of overt oestrus in the mare. **(4 marks)**

c) As many as thirty unfertilised eggs can be flushed from the mare's oviducts early in the breeding season. Briefly explain how this comes about. **(2 marks)**

d) Write short notes on endometrial cups, their formation, life-span, and function. **(4 marks)**

e) Briefly describe events that occur during the second stage of labour in the mare. **(6 marks)**

.....SECTION B.....

Question 4

Write notes on all of the following: **(5 marks each)**

a) Functions and uses of non-pituitary gonadotrophins in the cow.

b) Agents used and their mode of action in preventing establishment of a pregnancy five (5) days after mating in the cow.

c) Agents used and their mode of action in stimulating the onset of the breeding season in sheep.

d) Low distensibility of vagina and vulval tissues during labour in sheep.

Question 5

A farmer has an ambition to diversify into pig keeping. She however is not sure at what age pigs start reproducing and whether to use artificial insemination.

a) What factors influence the maturation of both gilts and young boars? **(6 marks)**

b) What do you understand by boar power and gilt pool? **(4 marks)**

c) What hormonal activities lead to puberty in gilts? **(5 marks)**

d) Compare and contrast hand-mating and artificial insemination in the pig. **(5 marks)**

Question 6

You are called to investigate a cow that was successfully inseminated 10 months prior but is not showing any sign of parturition. On rectal examination, you feel a viable foetus. However, on vaginal examination you feel some segments of the small intestines in the pelvic cavity.

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

b) List **two (2)** differential diagnoses and your reasons. **(4 marks)**

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

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

Question 7

A dairy farmer invites you to see one of his Holstein-Friesian cows that has a structure hanging around the perineal area. Upon physical examination you notice that it is a pink, long and elastic tissue hanging from the vulva, almost touching the ground when the animal is standing.

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

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

c) Discuss the aetio-pathogenesis of the condition? **(8 marks)**

d) Describe two approaches you would use to manage the condition. **(5 marks)**

e) What are some of the possible sequelae to this condition? **(2 marks)**

.....END.....

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE

END OF YEAR AUGUST/SEPTEMBER EXAMINATIONS

2016/17 ACADEMIC YEAR
DEFERRED AND SUPPLEMENTARY EXAMINATION

VETERINARY CLINICAL PATHOLOGY (VMD 5100)

Duration: 3 hours

INSTRUCTIONS:

1. Carefully read the instructions and each question
2. Answer **ALL FIVE (5)** questions
3. Answer **EACH QUESTION SEPARATELY**
4. **ALL** questions carry equal marks
5. Write in a legible handwriting

QUESTION 1

Write brief and concise notes on the following;

a) Bentiromide Test **(4 marks)**
b) Polycythaemia **(4 marks)**
c) Type I and Type II diabetes **(4 marks)**
d) Bilirubin **(4 marks)**
e) Indications for serum enzymology **(4 marks)**

QUESTION 2

a) Describe in detail the hemopoietic cycle in a normal dog **(10 marks)**
b) Discuss the serum biochemical diagnosis of peracute hepatic disease **(10 marks)**

QUESTION 3

Your laboratory is only equipped with dexamethasone. Discuss how you would apply your expert knowledge of clinical pathology to distinguish between pituitary and adrenal-related Cushings disease. Clearly and concisely outline how you would navigate around your findings to arrive at the most possible conclusion **(20 marks)**

QUESTION 4

Blood transfusion is the mainstay of treatment of animals with disorders of hemostasis with the basis being component therapy. Blood components are however under-utilized in veterinary medicine because they are expensive and sometimes not readily available for use in a hemorrhaging animal. As such, there is no choice but to use whole blood for treatment, even when not optimal or advisable.

a) What characteristics does a good donor have? **(10 marks)**
b) Describe the procedure you would carry out in order to determine whether the donor blood is compatible (or incompatible) with the recipient blood. **(10 marks)**

QUESTION 5

a) Discuss the indications application of dye excretion tests in a clinical laboratory **(10 marks)**
b) Discuss primary, secondary and tertiary hypothyroidism **(10 marks)**

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

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
END OF YEAR AUGUST/SEPTEMBER EXAMINATIONS 2016/2017
ACADEMIC YEAR

VETERINARY EPIDEMIOLOGY AND ECONOMICS (VMD 5319)

Duration: 3 hours

INSTRUCTIONS:

1. Carefully read the instructions and each question
2. **ANSWER ANY 3 QUESTIONS FROM EACH SECTION**
3. Write in a legible handwriting

SECTION 1

VETERINARY EPIDEMIOLOGY

QUESTION 1

a) Define EMPRES and state what role EMPRES plays. What are Trans-boundary diseases and how does EMPRESS classify them? (**5 marks**)

b) Define OIE List A diseases. As a district veterinary officer, what would you do if a list A disease broke out in an area in your district? (**5 marks**)

c) State the primary objective of epidemiological surveillance and briefly describe the considerations required for effective surveillance. (**5 marks**)

d) A disease breaks out in a certain area with a high density of cattle and you are called upon to investigate it, state any three major questions on which your investigations are likely to be based. How would you go about providing replies to these questions (be brief)? (**5 marks**)

QUESTION 2

At the beginning of the month, a herd had 300 cattle. The owner sold 20 bulls and bought 30 heifers within the same month. Within the same month, there was an outbreak of ECF, which affected 50 cattle from which 10 died of the disease.

From the information given above:

a) Calculate the time at risk. (**5 Marks**)
b) The incidence risk of ECF. (**5 Marks**)
c) The incidence rate of ECF. (**5 Marks**)
d) The case fatality of ECF. (**5 Marks**)

QUESTION 3

A case-control study was conducted to determine if there was an association between experience in veterinary practice among veterinarians and suffering an injury from an animal. Below are the results of the study.

		Injury from an animal	
		Positive (D+)	Negative (D-)
Experienced Vet	Positive (F+)	432	560
	Negative (F-)	71	11

a) Briefly, describe two advantages of a case-control study **(4 Marks)**
b) Briefly, describe two disadvantages of a case-control study **(4 Marks)**
c) Name the measure of association that can be calculated in this type of study design **(2 Marks)**
d) Calculate this measure of association and interpret it **(6 Marks)**
e) Name the test statistic that can be calculated to evaluate the strength of association in this type of study design **(2 Marks)**
f) Calculate this measure of the strength of association **(2 Marks)**

QUESTION 4

a. As an epidemiologist, you are requested by the minister responsible for livestock to attend a meeting on an emerging disease control for several outbreaks. The minister would like to know what approach you would like to take for the control of FMD after your partner proposes the implementation of aggregate testing or negative-herd retesting.
   i. Which of the two options would you opt for? **(2 marks)**
   ii. Explain the reason for your choice. **(6 marks)**
   iii. Explain to the minister when you would recommend the alternative option. **(4 marks)**
b. Discuss the importance of random sampling and confidence intervals in epidemiology. **(4 marks)**
c. Briefly, describe a target population. **(4 marks)**

SECTION 2

ANIMAL HEALTH ECONOMICS AND PRACTICE MANAGEMENT

QUESTION1

Madison Insurance Company has given you a new position as the Director of Livestock Insurance (DLI). Before you roll out your new livestock insurance products,

a) What are some of the insurability conditions that you will consider? (**10 marks**)
b) Why is there a limited availability of insurance for production animals? (**5 marks**)
c) Describe some of the potential livestock risk management options available in the insurance industry (**5 marks**).

QUESTION 2

As an animal health economist, you have been contracted by a Non-Governmental Organization (NGO) to carry out a study on **micro level analysis of beef and fish consumption in Zambia.** Using the data in the table, calculate demand elasticity of fish and beef consumption in Zambia. Which product is more elastic than the other and why? (**20 marks**)

Commodity	Average Initial Price (K)	Average Final Price (K)	Average Initial Quantity (Kg)	Average Final Quantity (Kg)
Fish	266	220	30	27
Beef	253	333	46	14

QUESTION 3

Dr Jerico Milandu would like to raise funding for his new veterinary clinic in Chisamba. He has hired you as a business advisor based on your knowledge in animal health economics and practice management.

a) What are the two types of Capital he needs to think about before starting the business and provide a brief explanation of each? (**4 marks**)
b) Briefly, describe 4 different ways he can raise capital to fund the business. (**10 marks**)
c) List and briefly describe 5 types of companies that are one can register in Zambia. (**5 marks**)
d) What does incorporation mean? (**1 mark**)

QUESTION 4

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 served (million)	% of resources to devoted toward development of veterinary services	Number of animals served (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

a) Roughly plot the information provided in this table on the graph. **(5 marks)**
b) What do you call the curve on the graph you have plotted? **(1 mark)**
c) What economic concept does it illustrate and measure? **(1 mark)**
d) What factors cause an outward shift of this curve? **(5 marks)**
e) What does the area outside, inside, and on the curve tell us about the production frontier of the nation? **(3 marks)**
f) Calculate of DALYs of a man who has been blind due to small pox since he was 5 and dies when he is 50 years. The Disability weight of blindness is set at 0.35, with life expectancy at 70 years) **(5 marks)**

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
SUPPLEMENTARY/DEFEERED EXAMINATIONS-2016/17 ACADEMIC YEAR

VETERINARY OPERATIVE SURGERY II (VMC 6210)

Duration: 3 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 answer booklet
4. **ALL** questions carry equal marks
5. Write in a legible handwriting

.....SECTION A.....

QUESTION 1

A 6-month-old boxer-boerboel cross puppy is presented to your clinic with a primary problem of severe 'snoring' even when it is awake. The problem was first observed when the puppy was three months old and has progressively worsened. The puppy is otherwise healthy and active. On examination of the puppy you notice that it has very narrow nares.

a) What is your tentative diagnosis? **(2 marks)**
b) Name the various conditions that contribute to this syndrome and describe how each condition is diagnosed. **(6 marks)**
c) Describe the surgery necessary to stop the snoring. **(12 marks)**

QUESTION 2

Urovagina is a condition that occurs in mares with poor body confirmation and can lead to inflammation of the vagina and the cervix.

a) Outline the mare's perineal conformation that would lead to urovagina. **(2 marks)**
b) List the surgical techniques available in the surgical management of urovagina. **(2 marks)**
c) Describe in detail the technique from (b) above you would use to correct urovagina due to severe perineal conformation. (Include patient preparation, anaesthesia and post-operative care). **(16 marks)**

QUESTION 3

Dehorning is one of the important activities in bovine practice.

a) Describe the indications for dehorning cattle. **(4 marks)**
b) Describe **two** (2) techniques for dehorning calves. **(4 marks)**

c) Describe in detail the technique for cosmetic dehorning of adult cattle. Include in your description the pre-operative procedures, anesthesia, and post-operative care. **(8 marks)**

d) What are the possible sequelae to dehorning adult cattle? Discuss their signs and treatment. **(4 marks)**

.....SECTION B.....

QUESTION 4

Write short notes on any **four (4)** of the following **(5 marks each)**

a) Pre-anaesthetic and general considerations for an ovariohysterectomy in a case of closed pyometra in a dog.
b) Technique for an episiotomy in a dog.
c) Natural defense mechanisms of the oral cavity.
d) General considerations for mastectomy and factors to consider when selecting a technique.
e) Management of complicated or advanced periodontal disease.

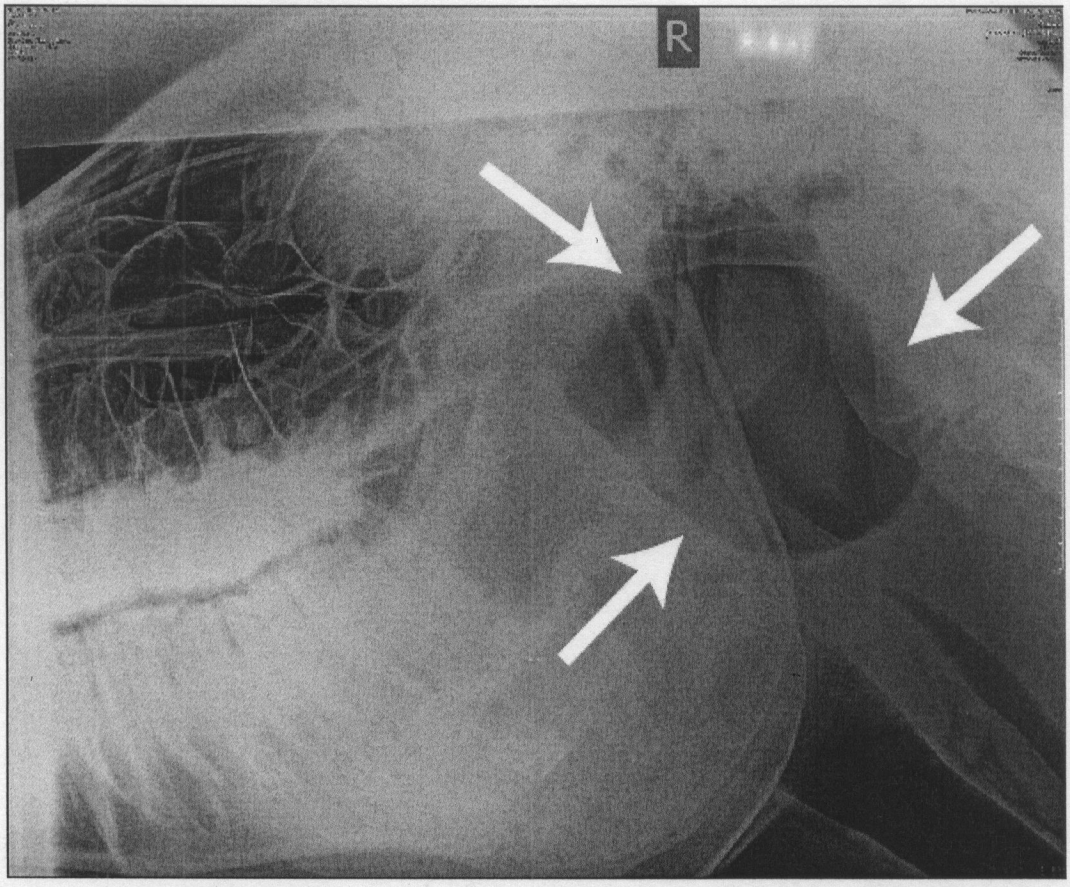
QUESTION 5

Urethrostomy is a permanent urinary diversion procedure performed in dogs/cats.

a) What are the indications for urethrostomy in a dog? **(5 marks)**
b) State the anatomical sites where urethrostomy can be perfomed in a dog? **(3 marks)**
c) Describe in detail how one type of urethrostomy in (b) above is performed **(10 marks)**
d) Outline the possible complications in the surgery described in (c) above **(2 marks)**

QUESTION 6

A 10-year-old gelding is presented with persistent, but often intermittent, bilateral nasal discharge. The discharge is opaque and tan to white and not odorous. Additional signs include pain, difficulty in swallowing and respiratory distress. The owner also states that clinical signs worsen when the head is lowered. A lateral radiograph of the horse's head is shown below.



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

b) List the options you have to surgically approach the affected anatomical structure (a) above. **(4 marks)**

c) For one of the approaches listed in (b) above, describe in detail the procedure including the anaesthesia and post-operative care. **(10 marks)**

d) Give advantages and disadvantages of the procedure described in (c) above. **(4 marks)**

QUESTION 7

Write short notes on **four (4)** of the following **(5 marks each):**

a) Surgical teaser bull preparation via penile deviation.

b) Small ruminant key-hole castration technique.

c) Canine vasectomy

d) Surgical management of canine paraphimosis.

e) Inter-dental wire and acrylic bonding (IWAB) technique

f) Classification criteria for external skeletal fixators

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

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
SUPPLEMENTARY AND DEFERRED EXAMINATIONS-2016/17 ACADEMIC YEAR
VETERINARY REPRODUCTION AND GYNAECOLOGY (VMC 6319)

Duration: Three (3) 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 answer to each question in a separate answer booklet
4. **ALL** questions carry equal marks
5. Write in a legible handwriting

.....SECTION A.....

Question 1

A small scale dairy farmer in Lusaka West who keeps a herd of 50 cows has requested you to investigate the reproductive status of his herd. Last year, 30 of his cows became pregnant after artificial insemination. The average calving interval was 395 days, first insemination was on average found to be 95 days, the average number of inseminations per conception was 2.0 and conception rate to first insemination was 44%.

a) Discuss in detail the causes that might have led to the above findings. **(18 marks)**
b) What advice would you give to the farmer in light of these findings? **(2 marks)**

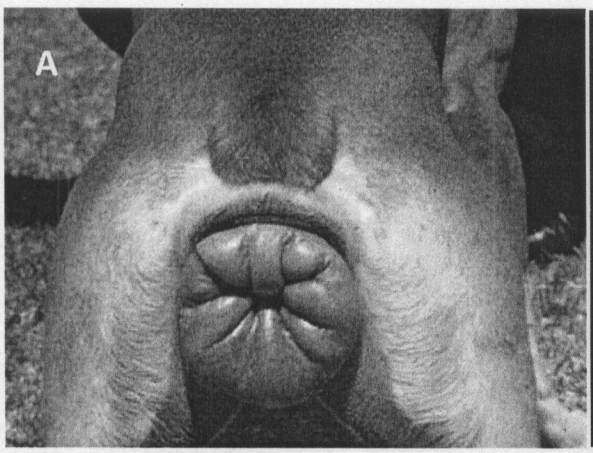
Question 2

Carefully examine the provided figures A and B below. For **each** figure:

(5marks each)

a) Describe in detail the condition in the dog being depicted.

b) Discuss in detail how you can successfully manage it.



Question 3

Infertility in the mare is the most common reproductive complaint of horse owners. The cause of infertility could either be functional or due to infectious diseases and requires a thorough investigation to arrive at a cause.

a) Briefly outline how poor perineal conformation of the mare can lead to infertility. **(4 marks)**

b) Describe how granulosa cell tumour results in infertility in the mare. **(4 marks)**

c) List **four (4)** infectious causes of infertility in the mare. **(2 marks)**

d) For any **two (2)** of the listed causes of infertility in (c) above, discuss the aetiology, management and the prognosis for future reproduction. **(10 marks)**

.....SECTION B.....

Question 4

Write notes on all of the following: **(5 marks each)**

a) Early Embryonic Death.

b) Non-functional ovarian cyst in the cow.

c) Habitual abortion in Angora goats.

d) Causes of repeat breeding in the cow.

Question 5

A farmer calls you to examine a cow that was reported to have aborted a 5-month-old foetus. The cow has been showing prolonged irregular oestrous cycles of between 25 and 60 days duration. On clinical examination, the cow appears healthy with no obvious physical reproductive tract abnormalities.

a) What is your tentative diagnosis? **(4 marks)**

b) List and explain in detail your **two** (2) possible differential diagnoses? **(6 marks)**

c) Explain the prolonged oestrous cycles observed in this case? **(2 marks)**

d) Describe how the disease condition in (a) above would be confirmed? **(5 marks)**

e) Briefly outline the control and preventive measures of this condition. **(3 marks)**

Question 6

Anoestrus is a common condition encountered in bovine practice.

a) List **five (5)** conditions that would lead to anoestrus in cattle. **(5 marks)**

b) For each of the five (5) conditions listed in (a) above, describe the causes. **(7.5 marks)**

c) For each of the five (5) conditions listed in (a) above, discuss the treatment/management and prevention. **(7.5 marks)**

Question 7

Porcine Reproductive and Respiratory Syndrome is commonly referred to as PRRS.

a) Describe the symptoms/problems of this syndrome in sows? **(6 marks)**

b) Describe how the syndrome is transmitted from one animal to another. **(6 marks)**

c) Discuss how PRRS is prevented. **(8 marks)**

.....END.....

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
END OF YEAR AUGUST/SEPTEMBER EXAMINATIONS

2016/17 ACADEMIC YEAR
DEFERRED AND SUPPLEMENTARY EXAMINATION

PREVENTIVE VETERINARY MEDICINE (VMD 6609)

Duration: 3 hours

INSTRUCTIONS:

1. Carefully read the instructions and each question
2. Answer **ALL FIVE (5)** questions
3. Answer **EACH QUESTION SEPARATELY**
4. **ALL** questions carry equal marks
5. Write in a legible handwriting

QUESTION 1

a) State in general terms the primary objectives and goals of a herd health programme.

b) Briefly state the criteria for the selection of participating farmers. Briefly define performance targets and shortfalls.

c) Briefly how would you assess the mastitis status of the dairy herd?

d) What is the major objective of a beef cattle herd health programme? What is a weaner calf crop? **(20 marks)**

QUESTION 2

a) What are the objectives of studying fish diseases?

b) Briefly describe the methods used in the vaccination of fish. What are the factors that may affect the efficacy of fish vaccines?

c) Give a brief description of any fish disease you have learnt about. How would you treat or prevent this disease?

d) Briefly discuss the diagnostic methods in fish diseases. **(20 marks)**

QUESTION 3

a) Under chemical immobilization, *outline* the phases of drug "response" in a darted animal, clearly outlining what one shall see in each of the phase. **(4 marks)**

b) Explain in detail how game capture can be a risk undertaking, including considerations before capture and after. **(4 marks)**

c) *Open areas* in wildlife what are they, elaborate? **(2 marks)**

d) Outline the type of assessment of the health of wild animals to be captured that you should do? **(5 marks)**

e) What critical aspects should you consider [assess] when conducting a site inspection where a capture operation is likely to be conducted? **(5 marks)**

QUESTION 4

a) Briefly describe the host range and clinical forms of avian pox. What are the predisposing factors leading to outbreaks and how would you prevent and control this disease? **(5 marks)**

b) Briefly discuss current challenges for the control of infectious bursal disease (IBD) and infectious bronchitis (IB) in Zambia. With the challenges you have described, what is your advice to poultry farmers to avert heavy economic losses? **(5 marks)**

c) Discuss the influence of modern methods of management in poultry disease occurrence and list three diseases that can be controlled through the vaccination of the parent flock. **(10 marks).**

QUESTION 5

a) One of the fundamental requirements of a successful herd health programme is a simple, reliable system of recording animal health events and production performance. What are the fundamental requirements of such a system?

b) What is the main objective of a herd health programme in the dairy and how can it be achieved?

c) List the type of farm records you would require for an assessment of the annual performance of the beef herd? Name the parameters that determine the profitability of a beef cattle production programme.

d) What is the primary objective of a herd health programme in the feedlot? **(20 marks)**

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

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF DISEASE CONTROL
DEFERRED/SUPPLEMENTARY EXAMINATION OCTOBER 2016/17 ACADEMIC YEAR

VETERINARY JURISPRUDENCE AND EXTENSION (VMD 6701)

Duration: 3 hours

INSTRUCTIONS:

1. Please read the instructions and each question carefully
2. There are **FIVE (5)** questions in this paper. Answer **ALL FIVE (5).**
3. **ALL** questions carry equal marks.
4. Write in a legible handwriting

QUESTION 1

a) From the forensic point of view, give two (2) reasons why blood stains are examined. **(2 Marks)**
b) List six (6) methods used to examine blood stains. **(6 Marks)**
c) Describe the chemical examination of blood in detail. **(12 Marks)**

QUESTION 2

Write short notes on the following:

a) Evidence. **(4 Marks)**
b) Hints for veterinary surgeons giving evidence in the court of law. **(7 Marks)**
c) Forms of animal doping. **(4 Marks)**
d) General requirements for the importation of animals. **(5 Marks)**

QUESTION 3

a) How would you ensure that a livestock development programme in Western Province, an area prone to CBPP and Trypanosomiasis, is established effectively? **(10 Marks)**
b) What are the different extension methods? **(10 Marks)**

QUESTION 4

What do you understand by the term 'participatory extension'? **(20 Marks)**

QUESTION 5

Describe the following:

a) Focus group discussion. **(4 Marks)**
b) Indigenous knowledge. **(4 Marks)**
c) Contact farmer. **(4 Marks)**
d) Key informant. **(4 Marks)**
e) Multi-way communication. **(4 Marks)**

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