

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
MID-TERM EXAMINATIONS 2017/2018 ACADEMIC YEAR

VMB 2511 ANIMAL WELFARE AND BEHAVIOUR.

VMB 3100 COMPARATIVE AND APPLIED VETERINARY
ANATOMY.

VMB 3311 VETERINARY PHYSIOLOGY.

VMD 4201 VETERINARY EPIDEMIOLOGY.

VMD 6701 VETERINARY EXTENSION AND JURISPRUDENCE.

VMP 4111 PATHOLOGY OF INFECTIOUS AND
NON-INFECTIOUS VETERINARY DISEASE

**THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
MID-TERM EXAMINATIONS-2017/18 ACADEMIC YEAR**

ANIMAL WELFARE AND BEHAVIOUR (VMB 2511)

Duration: 3 hours

INSTRUCTIONS:

1. Please read the instructions and each question carefully.
 2. Answer any **FIVE (5)** questions .
 3. Write the answers to each question in a separate examination answer book.
 4. **ALL** questions carry equal marks.
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QUESTION 1

The domestication of horses about 6000 years ago led to their inability to socialize, move around and spend most of their time grazing. This has also led to horses being stabled for long periods of time leading to the adoption of behaviours that may be detrimental to their health.

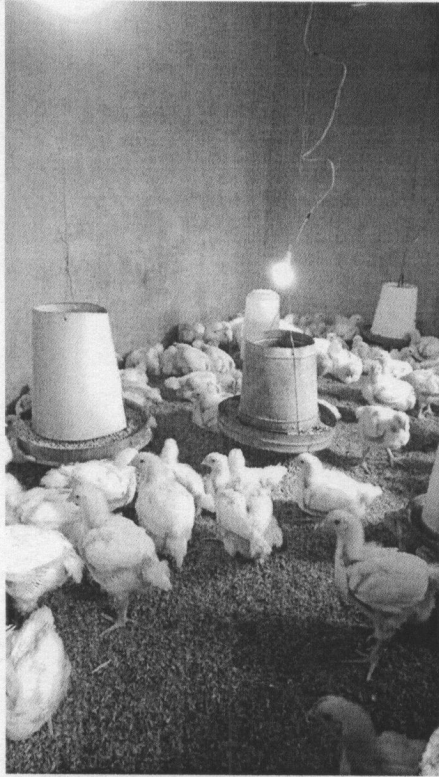
- a. Briefly outline how the horse was a good candidate for domestication than animals from the same family. **(4 marks).**
- b. Write short notes for each of the following horse behaviours **(2 marks each):**
 - i. Et-epimeletic behaviour
 - ii. Ingestive behaviour
 - iii. Eliminative behaviour
- c. Describe the behaviour of a horse that may require the veterinarian to be more careful when handling it. **(4 marks)**
- d. List and outline **three (3)** stereotypic behaviours of horses that may be harmful to humans **(2 marks each).**

QUESTION 2

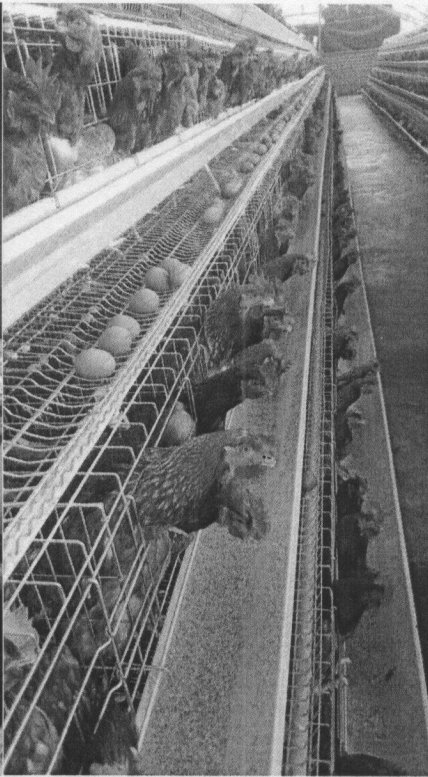
Compare and contrast the welfare concerns/issues in the two poultry-rearing systems A and B shown below.

(20

marks)



System A



System B

QUESTION 3

Write short notes on how each of the following may affect welfare of an animal:

(5 marks each)

- Stress
- Obesity
- Housing
- Routine Farm husbandry practices

QUESTION 4

A farmer wants to transport a pig and has come to your office for a movement permit. You go to inspect the means of transport and find it loaded as shown in the diagram below. The farmer doesn't understand why you cannot allow the transportation of the pig on the 50 km journey.



- a. Outline the welfare concerns in the pig shown above if the farmer were allowed to transport it in the current state. **(10 marks)**
- b. Describe the future recommendations you would make to the farmer in order to ensure good welfare of pigs during transportation. **(10 marks)**

QUESTION 5

Write short notes on the following:

- a. Qualities of an ideal euthanasia method. (10 marks)
- b. Signs that show that a cow has been effectively stunned. (5 marks)
- c. **One** acceptable euthanasia method for each of the following: (5 marks)
 - i. Dog
 - ii. Cow
 - iii. Pig
 - iv. Horse
 - v. Chicken

QUESTION 6

- a. Discuss four reasons why a basic understanding of farm animal behaviour is important for a veterinarian. (8 Marks)
- b. Write short notes on three of the following types of behavior in both cattle and pigs: (12 marks)

- vi. Sexual
- vii. Maternal
- viii. Social
- ix. Feeding
- x. Eliminative

QUESTION 7

Give a detailed description of how you would carry out a welfare audit of goats at a slaughter house. (20 marks)

END OF EXAMINATION

**THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE**

MID-YEAR JULY/AUGUST EXAMINATIONS-2017/18 ACADEMIC YEAR

COMPARATIVE AND APPLIED VETERINARY ANATOMY (VMB 3100)

TIME: THREE (3) HOURS

INSTRUCTIONS:

1. Answer any **FIVE (5)** questions only. All questions carry equal marks
 2. Write as clearly as possible as poor handwriting cannot be marked
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QUESTION 1

- i. Name the main contents of the jugular groove of the horse [4 marks]
- ii. What is poll evil and what anatomical structure is involved in this condition? [2 marks]
- iii. Briefly explain how blood can be drawn from the jugular vein of a horse. [2 marks]
- iv. What is nasogastric intubation and how is it performed in the horse? [3 marks]
- v. Define carotid sheath and name the contents of the carotid sheath of the horse. [4 marks]
- vi. Name **THREE** muscles of the neck region of the horse. [3 marks]
- vii. Name **TWO** surgical procedures that can be conducted on the neck region of the horse. [2 marks]

QUESTION 2

- i. Clearly outline the anatomical boundaries of the pig's pelvis. [10 marks]
- ii. What is cryptorchidism? How does cryptorchidism occur in pigs? [4 marks]
- iii. On a well-labelled longitudinal section diagram show the positions of the following anatomical organs of the sow's pelvic organs:
 - a. Urethra
 - b. vagina
 - c. Pelvic vertebrae and sacrum
 - d. Rectum
 - e. Uterine horns[6 marks]

Question 3

- i. Describe the pectoral girdle of the chicken naming all the parts and their functions [8 marks]
- ii. Describe the pelvic girdle of the chicken naming all the parts and their functions [8 marks]

- iii. What are pneumatic bones? Name **THREE** pneumatic bones that can be found in aves. [4 marks]

Question 4

- i. Give **TWO** reasons why paranasal sinuses are important in the bovine and equine species [2 marks]
- ii. Name **TWO** systems of sinuses found in the horse. [2 marks]
- iii. Name the **FOUR** pairs of paranasal sinuses found in the bovine. [4 marks]
- iv. How does passage of air in and out of paranasal sinuses occur in the horse [1 mark]
- v. Briefly describe the anatomy of the bovine's frontal sinus [4 marks]
- vi. What is the function of the guttural pouches in the horse and where are they located? [2 marks]
- vii. Name **TWO** anatomical features that can be found in the horse's nasopharynx. [2 marks]
- viii. Name any **THREE** surgical procedures that can be performed on a horse's neck [3 marks]

Question 5

- i. Describe the anatomy of the forelimb of the horse in terms of: muscles, and nerves [15 marks]
- ii. What is the stay apparatus (forelimb and hindlimb) and how does it function in the horse? [5 marks]

Question 6

Name **FIVE** external and **FIVE** internal anatomical components of bony fishes and state the functions of each. [20 marks]

Question 7

Name **THREE** clinical procedures that can be performed in the neck region of the horse [3 marks]

Briefly describe the area of auscultation of the lungs in the horse. [4 marks]

Name **THREE** clinical procedures that can be performed on the head of the bovine. [3 marks]

Compare and contrast the intestines (large and small) of the pig and the horse. [10 marks]

Question 8

The limbs of the equine are made up of mainly bony components and muscular tissue.

- i. Name all the bony components of the equine forelimb from proximal to distal. [8 marks]
 - ii. Name all the bony components of the equine hindlimb from proximal to distal. [8 marks]
 - iii. Name **FOUR** components of the horse's hoof capsule [4 marks]
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END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
MID YEAR JULY EXAMINATIONS-2017/18 ACADEMIC YEAR

VETERINARY PHYSIOLOGY (VMB 3311)

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. Write in a legible handwriting
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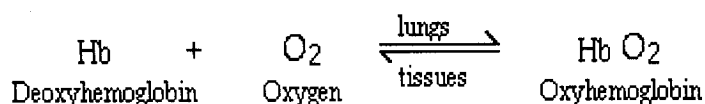
QUESTION 1

Hormones can be broadly classified into two types.

- a) State the two types of hormones? (2 marks)
- b) Compare and contrast the two types of hormones in detail. Include the mechanism of action in your discussion? (8 marks)
- c) Describe in detail the renin-angiotensin-aldosterone regulation of sodium? (10 Marks)

QUESTION 2

Oxygen is one of the substances transported with the assistance of the red blood cells. The red blood cells contain a pigment called haemoglobin, each molecule binds four oxygen molecules to form oxyhaemoglobin. The oxygen molecules are carried to individual cells in the body tissues where they are released. The binding of oxygen is rapid and reversible as shown in the equation below.



- a) Define the oxygen haemoglobin dissociation curve? (2 marks)
- b) Draw a well labelled graph of the oxygen haemoglobin dissociation curve (2 marks)
- c) Name the type of shape of the graph you have drawn in (b) above and explain why the shape is as you have mentioned (3 marks)
- d) Describe the factors affecting the left and right shifts of the curve (8 marks)

- e) Define the Bohr effect and state its significance (3 marks)
- f) List two important differences between the oxygen haemoglobin dissociation curve and the carbon dioxide dissociation curve (2 marks)

QUESTION 3

- a) An animal is brought to your practice with a high temperature. You examine it and conclude that it has a fever. Explain how fever develops in animals? (10 marks)
- b) Describe how hypothermia and frostbit occur? (10 marks)

QUESTION 4

Define Basal Metabolic Rate (BMR), listing and clearly explaining the factors that affect it, and hence, describe the two **main** methods of measuring BMR? (20 marks)

QUESTION 5

- a) Explain how the intrinsic nervous system regulates GIT function? (4 marks)
- b) Describe in detail, fat and protein digestion, absorption and utilization in the monogastric animal? (10 marks)
- c) A farmer seeks your advice on whether he should supplement his cattle with urea blocks. Explain your advice to the farmer? (6 marks)

QUESTION 6

(20 marks)

The Oestrus cycle in cattle is regulated by a number of complex events that result in periodical cyclicity in a normal health animal. In the regulation of these events, discuss the hormonal relationships/ interactions of the following organs during the late diestrus phase of the estrus cycle in cattle:

- a) Ovary
- b) Uterus
- c) Pituitary
- d) Hypothalamus

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

THE UNIVERSITY OF ZAMBIA
School of Veterinary Medicine
Mid-Year Examinations – 2017/2018
VETERINARY EPIDEMIOLOGY (VMD 4201)

Instructions

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

Question 1

- a) Compare and contrast experimental and observational study designs (5 Marks)
- b) Briefly describe how you would go about designing a cohort study to investigate the effect of type of floor surface on lames in cattle (5 Marks)
- c) Briefly describe how you would go about investigating the effect of dirty environment on the occurrence of mastitis in cows as case-control study? (5 Marks)
- d) Discuss how bias is reduced in experimental study designs? (5 Marks)

Question 2

- 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) 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)
- c) What is epidemiological surveillance and/or monitoring? Differentiate between epidemiological surveillance and epidemiological monitoring and state how they are related Epidemiological diagnosis. (5 Marks)
- d) Briefly discuss considerations required when designing an epidemiological monitoring programme. (5 Marks)

Question 3

- a) Provide definitions of OIE List A and List B diseases and name any 5 diseases under each list, that affect livestock in the SADC Region. (5 Marks)

- b) Suppose you were a district veterinary officer, what would you do if a list A disease broke out in an area in your district? **(5 Marks)**
- c) What is EMPRES and what role does EMPRES play? **(5 Marks)**
- d) Define Trans-boundary diseases and classify them according to EMPRESS. State which of these classes are regarded as most important and how they are important. **(5Mark)**

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)**

Question 6

- i) What are the principle uses and objectives of epidemiology **(5 Marks)**
- ii) Define the following terms (2 Marks each)
 - a) epidemiology
 - b) Incidence
 - c) Proportional morbidity
 - d) Attack rate
 - e) Median

- iii) The birth weight of 10 calves in a herd from Chisamba district were as follows

23, 25 , 23, 17, 22, 27, 30, 27, 31, 25

From this data, calculate

- a) mean, b) standard deviation, c) 95% confidence interval (Use $t_{1-\alpha/2, 9} = 2.262$) **(13 Marks)**

Question 7

- a) An indirect immunofluorescence Antibody Assay (IFAT) revealed 80 dogs positive for rabies out

of a total of 900. Histopathology showed that 68 of IFAT test positive dogs were not affected. A random sample of the test negative dogs also revealed that 5% of these were infected.

- i) Determine the predictive values of the IFAT test **(7 Marks)**
 - ii) Based on your findings comment on the use of this test in the field **(3 Marks)**
- b) Sampling is an important technique in veterinary epidemiology.
- i) Using a appropriate illustrations discuss the importance of target population **(5 Marks).**
 - ii) Define and justify the concept of cluster sampling outlining why the approach should be discouraged **(5 Marks)**

END OF EXAMINATION

Good luck

THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
MID YEAR JULY EXAMINATIONS - 2017/18 ACADEMIC YEAR
VETERINARY EXTENSION AND JURISPRUDENCE (VMD 6701)

Duration: 3 hours

INSTRUCTIONS:

1. Answer all **FIVE (5)** questions.
2. **ALL** questions carry equal marks
3. Write in a legible handwriting

Total Marks 100

QUESTION 1

- (a) Describe in **detail** the different ethical conducts a veterinarian is supposed to keep in mind and follow when in veterinary practice in Zambia or abroad? **(10 Marks)**
- (b) List the different laws of Zambia involving Veterinarians. Describe two such laws in **detail** that were amended in 2010. **(10 Marks)**

QUESTION 2

Write the possibilities of different frauds in the sale of meat and milk. What are the different examinations (tests) that can be done to identify particular species of meat in dispute? Write the different physical properties of meat in cattle, buffalo, sheep, goat, horse, pig, poultry and fish. Mention the name of two equipment with their principle of action that can be used to detect the adulteration of milk with water **(20 Marks)**

QUESTION 3

What do you understand by agricultural extension? What are the different extension models being used in agriculture development. Describe one in **detail** currently being advocated in most developing countries. How does it differ from some of the old models? **(20 Marks)**

QUESTION 4

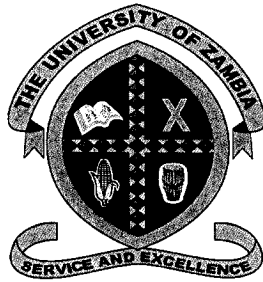
Write the different communication methods used in agricultural extension giving **different** examples including advantages and disadvantages in each of them. Describe the different modern communication tools used in the transfer of messages to farmers? **(20 Marks)**

QUESTION 5

Write short notes on any **five (5)** of the following:

- (a) Formal and Non-Formal Education **(4 Marks)**
- (b) Contact man and Contact Farmer **(4 Marks)**
- (c) Rural Community and Urban Community **(4 Marks)**
- (d) Ante-mortem and Post-mortem wounds **(4 Marks)**
- (e) Euthanasia and Doping **(4 Marks)**
- (f) Veterinary Officer, Veterinary Surgeon and Veterinary Inspector **(4 Marks)**

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



THE UNIVERSITY OF ZAMBIA
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF PARACLINICAL STUDIES
MID YEAR EXAMS – 2017/2018 ACADEMIC YEAR

PATHOLOGY OF INFECTIOUS AND NON-INFECTIOUS VETERINARY DISEASES
(VMP 4111)

Date: 9th June, 2018 **Time:** 09:00-12:00 hrs **Duration:** 3 hours **Venue:** A03/A04

INSTRUCTIONS:

1. Please read the instructions and each question carefully
2. Answer **ALL** questions
3. Each may have separate instructions
4. Write the answer to each question (where applicable) in a separate answer book
5. **ALL** questions carry equal marks

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QUESTION 1

Answer any two (2) of the following

- (a) A pregnant dam was infected with Bovine viral diarrhoea virus (BVD) after day 30 of gestation. Discuss in detail what would happen to the calf. (10 marks)
- (b) You have received reports of a large number of mortalities on pig farms around Lusaka. On physical examination you notice bleeding from the nose and cyanosis of the skin and ecchymotic haemorrhages on the ears and muzzle.
 - (i) What disease do you suspect (1 mark)
 - (ii) Describe the pathogenesis of this disease (5 marks)
 - (iii) What other gross lesions would you see (4 marks)
- (c) Compare and contrast Equine herpes virus 1 and Equine herpes virus 4 infections (10 marks)

QUESTION 2

Answer any four (4) of the following

- (a) Describe the gross and microscopic lesions in Peste des Petite ruminants (PPR) (5 marks)
- (b) Describe the gross and microscopic lesions of canine herpes virus infection (5 marks)
- (c) Describe the pathogenesis of foot and mouth disease (5 marks)
- (d) Describe the gross and microscopic lesions in canine parvovirus infection (5 marks)
- (e) Describe the pathogenesis of rabies virus infection (5 marks)
- (f) Describe the gross and microscopic lesions in feline panleukopaemia virus infection (5 marks)

QUESTION 3

Describe the characteristics of anthrax disease with respect to its being used in bacterial warfare (20 marks)

QUESTION 4

Contagious bovine pleuropneumonia is one of the notifiable diseases in Zambia (20 marks)

- (a) Define “a notifiable disease (2)
- (b) Write four other notifiable diseases in Zambia (either bacterial or Viral diseases)(2 marks)
- (c) You have been posted as a district veterinary Officer to a remote area, and you the only qualified Veterinarian. You receive a message from a veterinary camp that animals are dying massively in the area. After going to the area you find that the mortalities are high.
 - When you get closer to the carcasses, you find that they are bloated. Some of them with blood coming out from the nostrils
 - (i) What is your differential diagnosis (es) (4 marks)
 - (ii) Describe in detail how you would approach such an outbreak (6 marks)
 - (iii) Describe other postmortem findings that would help you arrive at a definitive diagnosis (6 marks)

QUESTION 5

Answer any **TWO** (02) of following questions (10 marks each)

- (i) A rabbit died after a history of loss of weight and ascites. On post mortem examination, you notice yellowish nodular lesions on the liver. State your diagnosis and briefly describe the disease (10 marks).
- (ii) A dog died after being dipped to control ectoparasites. Hypersalivation and dyspnoea were seen immediately after dipping. What would be your suspicion? Describe the condition (10 marks).
- (iii) You are a veterinarian and called to a farm where a four year old high-producing dairy cow is showing signs of flaccid paralysis about 3 days after parturition. Briefly describe the disease you would suspect (10 marks).
- (iv) Compare and contrast ketosis vs pregnancy toxemia. Focus your description on their characteristic diagnostic features (10 marks).

QUESTION 6

Answer any **TWO** (02) of the following infections (5 marks each)

- (a) Describe the important pathological manifestations of aspergillosis in various species of animals (10 marks)
- (b) Describe the important pathological differences between anaplasmosis and babesiosis in cattle (10 marks)
- (c) Describe the important pathological differences between canine sarcoptic and demodectic mange (10 marks)

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