

THE UNIVERSITY OF ZAMBIA
UNIVERSITY EXAMINATION - JUNE, 1989
SCHOOL OF VETERINARY MEDICINE

1.	Veterinary Anatomy and Physiology	VMB 210
2.	Veterinary Anatomy and Physiology (Deferred)	VMB 210
3.	Veterinary Embryology (Deferred)	VMB 211
4.	Veterinary Anatomy (Deferred)	VMB 310
5.	Veterinary Histology	VMB 315
6.	Veterinary Physiology	VMB 320
7.	Veterinary Pharmacology	VMB 425
8.	Veterinary Clinical Medicine	VMC 510
9.	Veterinary Reproduction and obstetrics I (Deferred)	VMC 535
10.	Veterinary Surgery II (Deferred)	VMC 620
11.	Veterinary Reproduction and obstetrics	VMC 635
12.	Special and preventive Medicine (Deferred)	VMD 510
13.	Special and Preventive Medicine	VMD 510
14.	Veterinary Epidemiology and Economics	VMD 511
15.	Veterinary Clinical Pathology	VMD 515
16.	Veterinary Medicine II (Deferred)	VMD 610
17.	Clinical Pathology	VMD 615
18.	Veterinary Virology and Immunology Part I	VMP 430
19.	Veterinary Microbiology (Deferred)	VMP 430
20.	Veterinary Parasitology	VMP 440

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - JUNE 1989

VMB 210

VETERINARY ANATOMY AND PHYSIOLOGY

TIME: THREE HOURS

ANSWER: ALL QUESTIONS

All Questions have equal value (12.5%)

Illustrate your answers with diagrams wherever possible.

Every answer should be answered on a separate sheet.

1. Give an account of the twelve individual cranial nerves. Include all the names and functions.
2. Give an account of the superficial lymph drainage of the dog, include the positions and names of the superficial lymphnodes.
3. Draw a diagram of the conducting system of the heart and explain the controlled rhythmic contraction that occurs.
4. Describe the position of the kidneys, ureter, bladder and urethra in the male and female dog. Explain how the uretero vesical junction works with an empty and full bladder.
5. Describe in detail the histological structure of FOUR of the following subjects (+ diagrams)
 - (i) Mitochondria
 - (ii) serous and mucous glands
 - (iii) fibrocartilage
 - (iv) neurons
 - (v) thrombocytes
 - (vi) cilia
 - (vii) striated muscle and its contraction
6. EITHER
 - (a) Name the classes of covering epithelia indicating ONE typical place of occurrence for each and describe TWO of own choice in detail.

OR

(b) What are neuroglia?

Name the different types and describe TWO of own choice in detail.

7. Discuss the origin of resting cell membrane potentials.

8. Write brief notes on any THREE of the following:-

- (i) the role of calcium ions in muscle contraction
- (ii) the control of erythrocyte production
- (iii) the role of myelocytes in immunity
- (iv) the basis of blood grouping.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY SUPPLEMENTARY/DEFERRED EXAMINATIONS - SEPTEMBER, 1989

VMB 210

VETERINARY ANATOMY PHYSIOLOGY

TIME: THREE HOURS

ANSWER: ALL QUESTIONS

ALL QUESTIONS CARRY EQUAL MARKS

ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS

SECTION ONE

1. Describe the changes in membrane polarity during an action potential in a nerve cell.
2. Discuss how the "dilution principle" may be applied in the determination of the size of a body fluid compartment.

SECTION TWO

3. Describe and name the abdominal wall muscles in the dog. Mention their origin and insertion.
4. Name and illustrate the muscular suspension between the thorax and the forelimbs in the dog and describe the bones.
5. Describe and illustrate the pharynx of the dog during:
(a) nose breathing
(b) swallowing
6. What is the Autonomic nervous system? Illustrate your answer with description of the parasympathetic nervous system only.

SECTION THREE

7. Either
Describe the three types of muscle tissue and the process of muscle contraction
Or
Describe the three types of cartilage and the process of endochondral ossification.

8. Describe the histological structures of FOUR of the following:-

- granular endoplasmic reticulum (+ function).
- plasma membrane
- zona occludens
- stratified transitional epithelium
- dense irregular connective tissue (+ five typical places of occurrences)
- eosinophils
- astrocytes
- bone cross section

Illustrate your answers with diagrams

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY SUPPLEMENTARY/DEFERRED EXAMINATIONS - SEPTEMBER, 1989

VMB 211

VETERINARY EMBRYOLOGY

TIME: THREE HOURS

ANSWER: ALL QUESTIONS

ALL QUESTIONS CARRY EQUAL MARKS

ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS

1. Gastrulation is one of the most critical periods in the development of an embryo. Describe this process in mammals up to the formation of three germ layers.
 2. Describe TWO of the following:
 - (a) Development of the early arterial system with the evolution of the aortic arches. X
 - (b) Extra embryonic membrane formation in mammals. X
 - (c) Foetal circulation. X
 3. Describe origin and development of the urinary system in domestic animals.
 4. Write short notes on FOUR of the following:
 - (i) spermatogenesis ✓
 - (ii) teratology ✓
 - (iii) endometrial cups and hippomanes ✓
 - (iv) origin and differentiation of brain regions ✓
 - (v) origin and development of the oesophagus
 - (vi) Cryptorchidism and monorchidism
 - (vii) somites and their ultimate fate in developing embryo ✓
 - (viii) types of eggs and their cleavage. ✓
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END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY SUPPLEMENTARY/DEFERRED EXAMINATIONS - SEPTEMBER, 1989

VMB 310

VETERINARY ANATOMY

TIME: THREE HOURS

ANSWER: ALL QUESTIONS

ALL QUESTIONS CARRY EQUAL MARKS

ILLUSTRATE YOUR ANSWERS

-
1. Compare and contrast the kidneys of Ox, horse, pig and dog and discuss the topographic relationships of right and left kidney in ox.
 2. In dissection of the goat, describe the suitable site for approaching the pancreas and discuss the muscles which will be exposed with their origin and insertion.
 3. Draw a well labelled diagram of the ventral surface of a brain and discuss the ventricular system.
 4. Either
Compare the uterus of cow with that of mare and discuss its blood supply.
Or
Write short notes on:-
 - (a) spleen of dog and ox
 - (b) stomach of fowl
 - (c) colon of horse
 - (d) inguinal canal and its contents
-

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
UNIVERSITY EXAMINATIONS - JUNE 1989

VMB 315
VETERINARY HISTOLOGY

TIME: **THREE HOURS**

ANSWER: **FIVE QUESTIONS**

Question 1 is compulsory. Answer FOUR other questions.

All questions carry equal marks.

Illustrate your answers with suitable diagrams.

1. Write short notes on any FOUR:-
 - (a) Hypophysis cerebri - Pars distalis.
 - (b) Fibrous tunics of eye
 - (c) Organ of corti
 - (d) Spleen and its circulation
 - (e) Cerebellum
 - (f) Rumen, reticulum, omasum-differential points
 2. Describe in detail the transverse section of the spinal cord.
 3.
 - (a) Give an account on the microscopic anatomy of the hepatic lobule and its portal areas
 - (b) Explain diagrammatically the arrangement of the circulation in the liver.
 4. Give an account of the histology of lung alveolus and explain the blood air barrier.
 5.
 - (a) Describe in detail the histo-morphology of a nephron.
 - (b) Explain the juxta-glomerular complex
 6.
 - (a) Give a diagrammatic representation of a mature sperm.
 - (b) What is blood-testis barrier
 7. Write about the histo-morphology of a uterus in anoestrous cow and explain the changes during oestrous cycle.
-

END OF EXAMINATION

TIME: THREE HOURS

ANSWER: FIVE QUESTIONS

ALL QUESTIONS HAVE EQUAL VALUE.

1. Discuss the role of the kidneys in the control of blood pressure.
2. Describe the mechanisms of functioning of the muscle spindle receptors and discuss their role in the control of skeletal muscle function.
3. Write brief notes on the techniques for estimating:-
 - (i) cardiac output
 - (ii) metabolic rate by indirect calorimetry
 - (iii) glomerular filtration rate
4. Discuss the nervous control of simple stomach function.
5. Outline the mechanisms of oxygen and carbon dioxide transport in the blood and discuss the factors that can influence the partial pressures of these gases in the blood.
6. Describe the cardiovascular, respiratory and renal changes associated with exercise and discuss how these changes are brought about.
7. EITHER
Define oestrus and describe the ^{hormonal} ~~hormonal~~, ovarian and behavioural events occurring at that time.

OR

Discuss luteolysis in cattle, and its significance in veterinary medicine.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
UNIVERSITY EXAMINATIONS - JUNE 1989

VMB 425

VETERINARY PHARMACOLOGY

TIME: **THREE HOURS**

ANSWER: **ANY FIVE QUESTIONS**

ALL QUESTIONS CARRY EQUAL MARKS.

1. Discuss drug absorption and distribution and relate this to the types and routes of administration of drugs.
 2. Discuss premedication for anesthesia giving examples of drugs used.
 3. Describe the pharmacology of histamine and antihistamines.
 4. Discuss the advantages and disadvantages of therapy with non-steroidal anti-inflammatory drugs.
 5. Write short notes on:
 - (a) Beta Adrenergic Agonists and Antagonists
 - (b) Muscle relaxants
 - (c) Ketamine
 6. What is neuroleptanalgesia? Give examples of the drugs and their uses.
 7. Compare and contrast the penicillins and tetracyclines.
 8. Discuss sulphonamide therapy.
 9. Briefly discuss the drugs available for treating parasitic gastro-enteritis in cattle.
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END OF EXAMINATION

VETERINARY CLINICAL MEDICINE

TIME: THREE HOURS

ANSWER: 6 OUT OF 7 QUESTIONS

1. Taking the temperature of an animal is a very important part of a clinical examination? Why? Describe the aetiology of fever and differentiate between/and hyperthermia.
2. Discuss the importance of having anamnesis before clinical examination. Describe how you would perform a clinical examination of a sick cow.
3. Write notes on the following:-
 - (a) The electrocardiograph
 - (b) allergic reaction as a diagnostic method
 - (c) examination of the ruminant forestomach
 - (d) techniques for identifying animals
4. A good milking cow is seen three days after calving. She is recumbant, has no temperature, is anorexic and has reduced reticulo-ruminal motility. What would your tentative diagnosis be? How would you confirm your diagnosis and treat this conditions?.
5. From birth until they are two months of age calves are often seen with diarrhoea on poorly managed dairy farms. Why? Discuss the pathogenesis, treatment and prevention of calf diarrhoea.
6. A sow, which gave birth to 10 piglets two days before is seen to be ill. Her piglets appear hungry, are apathetic and are not allowed to suckle. What is your diagnosis? Discuss the aetiology, treatment and control of this condition.
7. A dairy cow feeding upon maize silage was noticed by the stockman to be behaving strangely. Upon closer examination the cow was seen to walk in a circle, her left ear was drooping and saliva was drooling from the left side of her mouth. What is your tentative diagnosis? How would you treat this animal? How would you confirm your diagnosis?

VETERINARY REPRODUCTION AND OBSTETRICS I

TIME: THREE HOURS

ANSWER: FIVE (5) QUESTIONS

1. (a) Discuss the anatomy of the male reproductive organs of the bull while supporting your answer with an elaborate diagram.
(b) Describe the copulatory behaviour of the bull.
 2. Fetotomy is a major obstetrical operation in large animals. Discuss indications, preparation, anaesthesia, technique and aftercare in the bovine.
 3. Give three pathological conditions that occur in late pregnancy in cows. Outline their etiology, clinical signs, diagnosis and treatment.
 4. Write short notes on the following:
 - (a) Oestrogen
 - (b) Puberty in the male and female
 - (c) Obstetrical examination
 - (d) Mumification.
 5. Abortion is defined as the expulsion of one or more calves less than 271 days after service or AI; they are either dead or live for less than 24 hours.
 - (a) Discuss causes, clinical signs, diagnosis and treatment of abortion in cows.
 - (b) What kind of veterinary action should be taken following an abortion?
-

THE UNIVERSITY OF ZAMBIA
UNIVERSITY SUPPLEMENTARY EXAMINATIONS - SEPTEMBER, 1989

VMC 620
VETERINARY SURGERY II

TIME: THREE HOURS

ANSWER: 6 OUT 7 QUESTIONS

PLEASE USE A SEPERATE ANSWER SHEET FOR EACH QUESTION.

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1. Describe the aetiology, clinical features and surgical treatment of a teat fistula in the cow. Detail the restraint and anaesthetic technique used.
 2. A dog is brought to the clinic after being run over by a car. After examination you make a tentative diagnosis of rupture of the bladder. How would you confirm your diagnosis radiographically? Describe the technique used. How would you treat a dog with a ruptured bladder?
 3. Infection of the distal interphalangeal joint is common in dairy cattle. Describe the clinical features and the surgical treatment of this condition. Detail the anaesthetic technique used and the post-operative care of the animal.
 4. Describe the pre-surgical examination, the anaesthetic technique and the surgical procedure used in standing castration of the horse.
 5. Describe the anaesthetic and surgical procedure you would use for caesarian section in the bitch.
 6. Define the term hernia. How would you treat:
 - (a) a scrotal hernia in the pig
 - (b) an umbilical hernia in the foal.
 7. Describe how you would:
 - (a) Dehorn a large bull
 - (b) Castrate a two year old bull
 - (c) Place a ring in the nose of an adult bull
-

END OF EXAMINATION

VETERINARY REPRODUCTION AND OBSTETRICS

TIME: THREE HOURS

ANSWER: 6 OUT OF 7 QUESTIONS

USE A SEPERATE ANSWER SHEET FOR EACH QUESTION

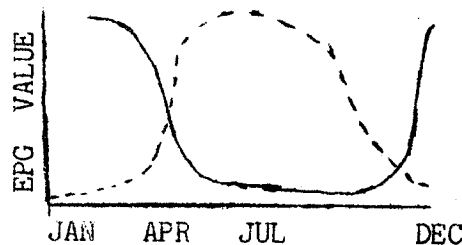
1. Describe the aetiology and treatment of the following conditions:
 - (a) Vaginal/Cervical prolapse in the cow
 - (b) Retained placenta in the cow
 - (c) Uterine torsion during calving.
2. In a large dairy herd during one of your regular visits you palpate an enlarged left ovary approximately 4 cms in diameter. The cow is not pregnant. The farmer states that the cow has not been seen in oestrous since it calved. What is your tentative diagnosis? How could you confirm your diagnosis? How would you treat this cow?
3. Describe the technique for carrying out a caesarian section in a cow. What anaesthesia would you use?
4. Poor oestrous detection is a common problem on Zambian dairy farms. How would you assist a farmer with such a problem? What pharmacological and surgical techniques might be used to improve oestrous detection?
5. A bitch is presented to you the morning after she has given birth to 3 puppies. She has not allowed the puppies to suck and appears restless. There is a green discharge from her vulva. How would you approach this case and what techniques are available to treat such a case? Describe in detail one such technique.
6. The examination of bulls before the mating season is essential in order to attain good conception rates in beef herds. Describe how you would examine a bull in order to determine its fertility and its libido.
7. Discuss the role the following drug preparations play in veterinary medicine:
 - (a) FSH
 - (b) Progesterone impregnated vaginal tampons.
 - (c) Prostaglandin F2alpha or its analogues
 - (d) Testosterone

TIME: THREE HOURS

ANSWER: ALL QUESTIONS

(EACH QUESTION SHOULD BE ANSWERED IN A SEPARATE ANSWER BOOK)

1. The following graph shows EPG transition of gastro-intestinal nematodes. Comparing the differences in the incidence in two countries, discuss the characteristics of Haemonchosis in Zambia, based on the meteorological background.



..... Ostertagia in England
—— Haemonchosis in Zambia

2. Discuss the epidemiology and control of
- (i) Anthrax
 - (ii) Dermatophilosis
3. (a) Describe the epidemiology of Rift Valley Fever.
- (b) List four clinically indistinguishable vesicular diseases of the bovine animal and in each case highlight the etiological agents, laboratory confirmation and control.
4. Discuss the epidemiology, clinical signs and laboratory confirmation of Pullorum Disease.

VMD 510

5. A suspected outbreak of Foot and Mouth Disease (FMD) in a major cattle producing province is reported.

As a responsible veterinary officer

- (a) Outline the plan you are going to use to control and prevent spread of the disease.
- (b) How would you monitor the control measures?
- (c) Selective depopulation (stamping out) is used in some countries to control FMD - how relevant is this strategy to Zambia?

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY SUPPLEMENTARY/DEFERRED EXAMINATIONS - SEPTEMBER, 1989

VMD 510

SPECIAL AND PREVENTIVE MEDICINE

TIME: THREE HOURS

ANSWER: ALL QUESTIONS. QUESTIONS 4 AND 5 IN SEPARATE ANSWER BOOKS!

1. Newcastle disease is worldwide in distribution and can cause up to 100% mortality in susceptible chickens. Outline etiology, clinical signs, post mortem lesions, and control of Newcastle disease.
2. (a) What are the clinical signs of bovine genital campylobacteriosis?
(b) Design a strategy for the control of campylobacteriosis in a large dairy herd in Lusaka stating reasons for your action.
3. The different forms of mastitis are one of the most important areas of veterinary work in bovine practice. Which forms of mastitis can you differentiate clinically? For each of them give the clinical signs, propose an appropriate treatment and outline a control programme on a herd basis
4. Discuss the epidemiology, post mortem lesions, and control of fascioliasis.
5. Discuss livestock movement control as a strategy in disease control and prevention. Include the scientific basis of the strategy, the planning and implementation aspects. Use examples from the veterinary literature.

END OF EXAMINATION

VETERINARY EPIDEMIOLOGY AND ECONOMICS

TIME: THREE HOURS

ANSWER: ALL QUESTIONS

FORMULAE NEEDED ARE TO BE FOUND IN THE APPENDIX.

1. Differentiate between (i) target population and study population (ii) a census, a sample and a sampling frame.
4 Points

2. Your colleague reports that the prevalence of antibodies to *Anaplasma marginale* is 9% in area Y based on cluster sampling.

What does (s)he imply in terms of probability and how does one carry out cluster sampling. 4 Points

3. Stratified sampling was carried out to determine the prevalence of anemia in a mixed herd of cattle in a tse-tse infested area. The results are given below.

Breed	Number in Herd	Number Examined	Number Positive
Holstein/Zebu	600	120	24
Zebu	1200	240	24
Ndama	700	140	07

- (i) Calculate overall the prevalence of anemia in the herd.

- (ii) Why was stratified sampling and not simple random sampling carried? 8 Points

4. A vet was incharge of 200 experimental goats in a research station. In June 1978 the flock had the following experiences. In week one, 20 animals contracted pneumonia and 15 of them died in week 2. In week 2 there were 30 new cases out of which 10 died in the same week. In week three 20 new cases were diagnosed and there were 2 deaths among week one cases, 10 deaths among week two cases and 5 deaths among week three cases. In week four there were 10 new cases of haemonchosis and only 6 animals among the week three new cases died. Those that recover from pneumonia are immune for at least 4

VMD 511

weeks.

- (a) Plot a morbidity risk (pneumonia) epidemic curve for June 1978 (Time scale - weeks)
- (b) Calculate the pneumonia specific mortality risk in June 1978.
- (c) Calculate the haemonchosis morbidity risk in the fourth week of June 1978. 12 Points

5. Bovine Anaplasmosis has the following possible etiologies.

- (i) Injection of infectious anaplasma particles by an infected biological tick vector into a susceptible animal.
- (ii) Mechanical injection of infectious blood into a susceptible animal by needle, contaminated surgical equipment, and contaminated mouth parts of blood sucking insects.

Assume that the two scenarios are a complete list of Anaplasmosis etiologies. Briefly discuss the concepts of disease determinants, necessary and sufficient causes of anaplasmosis. 8 Points

6. A drug "ANAKURE" has been shown to have curative effect against Anaplasmosis under laboratory conditions. Your boss directs you to test the efficacy of "ANAKURE" in the field.

- (i) State the study objective.
- (ii) Give your null hypothesis and its alternative
- (iii) What is the reference population?
- (iv) Briefly outline your materials and methods section (include: selection, sampling of study population,, allocation, treatment, outcome, follow up, diagnosis, analysis). (12 Points)

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- (b) Assuming that the following are your results:
Disease outcome.

	Recovered	Died
Treated	171	15
Control	16	84

- (i) Would you assert that there is an association between treatment category and disease outcome event? Interpretate your results.
- (ii) Calculate the mortality risk ratio and interprate. Could one also calculate the odds ratio? (YES/NO)
- (iii) Calculate and interpretate the prevented fraction. (12 points)

7. (a) In Veterinary (project) planning what is, and the use of organizational and managerial analysis.

- (b) Does maximum production necessarily mean optimal production? Discuss briefly. (10 Points)

8. You have after careful studies decided to control brucellosis in selected traditional herds under your charge.by vaccination.

- (a) List four cost items excluding vaccine cost.
- (b) What are the two major benefits do you expect to realise and how will they come about. (6 Points)

9. (a) What is a partial budget and when is it useful?
- (b) How does one bring future costs and benefits to present values and why is it necessary to do so? (6 Points)

10. Briefly explain what you understand by:-

- (a) Financial analysis in project preparation
- (b) The Cold Chain and its importance.
- (c) Economic analysis in project preparation.
- (d) Confounding factor
- (e) Spot maps and their uses.
- (f) Acaricide spraying interval and its importance. (10 Points)

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11. (a) When does a procedure qualify to be a diagnostic test.
- (b) Complement fixation test (CFT) was used to diagnose animals infected by Mycobacterium bovis, out of a 100 cattle declared test (CFT) positive, 30 were negative at postmortem, histopathology and bacterial isolation.
- (i) Calculate the sensitivity of CFT.
- (ii) Calculate the predictive value of a positive test. (8 Points)

END OF EXAMINATION

APPENDIX

1.
$$\chi^2 = \frac{[(a \times d) - (b \times c)]^2 - 0.5n}{(a+b) \times (c+d) \times (a+c) \times (b+d)} \times n$$

2. The Chi - square critical value (one degree of freedom) is 3.84.

3.
$$(RR - 1) / RR.$$

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - JUNE/JULY 1989

VMD 515

VETERINARY CLINICAL PATHOLOGY

TIME: THREE HOURS

MAXIMUM MARKS: 100

ANSWER: ALL QUESTIONS.

IN SECTION 'A' ANSWER THE QUESTIONS ON THE QUESTION PAPER PROVIDED. QUESTIONS FROM SECTION 'B' SHOULD BE ANSWERED IN THE ANSWER BOOKS.

SECTION A

1. It should be realised that
diagnosis seldom can be made from
findings alone but such findings often provide
which together with,
and physical examination.
2. Calculate the blood volume of an adult sheep of average size
Answer
3. Put the meaning for each word
a =
mega =
morpho =
hyper =
blast =
aniso =
meta =
leuk =
asis =

VMD 515

4. What kind of abnormal findings can be diagnosed from the Giemsa stained blood smear?
5. Total serum protein is 45g/dl in cattle. What diagnosis can you give on this animal.

SECTION B

6. What type of specimen and what preservative will you use while collecting specimen from suspected cases of the following diseases for laboratory confirmation.
 - (a)
 - (i) Babesiosis
 - (ii) Corridor disease
 - (iii) coccidiosis
 - (iv) Trypanosomiasis
 - (v) Globidiosis
 - (b)
 - (i) Tuberculosis
 - (ii) Streptothricosis
 - (iii) Anthrax
 - (iv) Brucellosis
 - (v) Para-Tuberculosis
 - (c)
 - (i) FMD
 - (ii) Gumboro
 - (iii) African House Sickness
 - (iv) Rift Valley Fever
 - (v) New Castle disease
7. What is exfoliative cytology? Write briefly the advantages and disadvantages of this diagnostic method. Give example of two diseases of animals which can be confirmed by this method.
8. Describe in detail the different urine examination you will conduct on receipt of urine sample and illustrate your judgement with examples.
9. Write short notes on:
 - (i) Haematuria
 - (ii) Haemoglobinuria
 - (iii) Cardiac Tympanode
 - (iv) Cystocentosis
 - (v) Pyouria

THE UNIVERSITY OF ZAMBIA

SUPPLEMENTARY/DEFERRED EXAMINATIONS, 1989

VETERINARY MEDICINE II

VMD 610

TIME: THREE HOURS

ANSWER: FOUR OF

SECTION A

ANSWER FOUR OF FIVE QUESTIONS

1. A commercial poultry farmer in Kitwe suddenly experiences high mortality in ten (10) day old chicks. Chickens are huddling under the source of heat in brooder house, off feed and have whitish diarrhoea. Adult chicken do not show any problem in the same farm.

What would be your tentative diagnosis?
How will you confirm? Describe briefly the etiology, transmission, prevention and control of this malady.
2. Write briefly about the following you know in Zambia:
 - (a) Cow-driosis in Lechwe
 - (b) FMD in Buffalo
 - (c) Tuberculosis in Lechwe
 - (d) Anthrax in Hippo
3. Write briefly the etiology, transmission, symptoms, diagnosis and treatment of a vectorborne disease of cattle characterised by severe anaemia.
4. As a Veterinary Officer posted recently in an area which is having wide area of flood plains and cattle on grazing most of the time.

Farmer reports that cattle are suffering showing submandibular oedema, diarrhoea, and emaciation.

What is your tentative diagnosis?
How do you confirm it? What measures would you take to control this condition.
5. Describe comparing the advantage and disadvantage of live vaccine to those of inactivated vaccine.

SECTION B

ANSWER FOUR (4) OUT OF FIVE (5) QUESTIONS. USE A SEPARATE ANSWER BOOK FOR EACH QUESTION.

1. Write notes on the following:
 - (a) Vaccination against bovine tick-borne disease
 - (b) The chemotherapy of East Coast Fever
2. A farmer asks you to treat his cow. On examination of the cow you notice that she is drooling saliva and bellowing constantly. What do you suspect is wrong with the cow? How would you treat this animal? How would you control the disease?
3. A ten year old dog is presented to you with a history of rapid breathing and coughing during the day. At night the animal is restless and appears to have difficulty breathing. On clinical examination the mucous membrane are cyanotic and the femoral pulse is weak and jerky. What is your tentative diagnosis? How would you confirm this diagnosis? How is the condition treated?
4. Chronic weight loss is seen in 5% of a breeding sheep flock in Southern Province. On examination of affected animals nothing unusual is noted except weight loss. Blood smears are free of parasites and the blood picture appears normal. Helminthosis is absent. On post-mortem the mesenteric lymph nodes are enlarged and the mucous membrane of the colon and caecum appears thickened. What is your diagnosis? How would you confirm it? How may this condition be controlled?
5. You are asked to treat a horse with a mild abdominal pain. On examination you find that the temperature and respiratory rate are normal but the pulse is elevated to 50 beats per minute, there are few abdominal noises and the CRT is 1 second. The owner says that the horse has not defaecated for 24 hours. What further examinations would you carry out to determine the cause of the colic? How would you treat and manage a colic?

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - JUNE 1989

VMD 615

CLINICAL PATHOLOGY

TIME: THREE HOURS

A. ANSWER FIVE (5) QUESTIONS OUT OF THE FOLLOWING:

- 1. Show normal range of blood glucose level of 5 domestic animal species.**
- 2. Give typical blood glucose determining methods using in clinical chemistry.**
- 3. Give brief explanation for the five aspects of lipids metabolism that unique for ruminants.**
- 4. Name the diseases that develop increase of serum alkaline phosphate activities.**
- 5. Explain enterohepatic circulation of bile acids.**
- 6. Classify the main liver function tests according to the type of the hepatic function examined.**
- 7. Show the hormones and their functions that secreted from anterior pituitary.**
- 8. Explain the goiters**

B. GIVE A BRIEF EXPLANATION FOR FIVE (5) TERMS OUT OF THE FOLLOWING:

- (1) BSP**
 - (2) Gastrin**
 - (3) Van den Burgh Reaction**
 - (4) A/G ratio**
 - (5) Urobilinogen**
 - (6) Milk fever**
 - (7) Arginase**
 - (8) Ferritin**
-

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
UNIVERSITY EXAMINATIONS - JUNE 1989

VMP 430 PART I

VETERINARY VIROLOGY AND IMMUNOLOGY

TIME: THREE HOURS

ANSWER: ALL QUESTIONS (EACH SECTION SHOULD BE ANSWERED IN A
SEPARATE ANSWER BOOK)

SECTION I

VETERINARY VIROLOGY

1. Name one family of the nonenveloped icosahedral DNA viruses. Describe its properties briefly and explain general features of the viral replication cycle as a model.
2. Describe the quantitative assays of viral infectivity with concise explanation of the procedures.
3. Explain the properties of Togaviridae and Paramyxoviridae giving the name of one virus in each group and discuss the differences of attachment, penetration and transcription in viral replication between the two virus families.

SECTION II

VETERINARY IMMUNOLOGY

4. Discuss host defence mechanisms against bacterial and viral infections, using the sub-headings:
 - (a) Specific and non-specific responses to bacterial infections
 - (b) Humoral and cell-mediated (cellular) immunity in viral infections.
 5. Give an outline of passive immunity.
-

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY SUPPLEMENTARY/DEFERRED EXAMINATIONS - SEPTEMBER, 1989

VMP 430

VETERINARY MICROBIOLOGY

TIME: THREE HOURS

ANSWER: ALL QUESTIONS

1. Transformation, conjugation and transduction are three mechanisms by which gene transfer can be accomplished in bacteria. Explain each of these in detail and outline their importance for the pathogenicity of bacteria and treatment of bacterial infections.
2. The family Enterobacteriaceae encompasses important pathogens of man and animals as well as hygiene indicators in dairy and meat processing industry.
 - (a) Outline the main bacteriological properties of members of the family Enterobacteriaceae
 - (b) Discuss two different pathogenic species in detail outlining laboratory diagnosis and the diseases they cause.
3. Describe the laboratory diagnosis of any viral disease of animals and the means by which an artificial active immunity may be produced to this disease.
4.
 - (a) Foreign material which enters the body may be destroyed by the process of phagocytosis. Please describe this process.
 - (b) One of the characteristics of the immune system is that it is able to "remember" previous exposure to an antigen, this memory results in marked differences between the primary and secondary immune response to a specific antigen. Please discuss these differences.
5. Veterinary preventive medicine relies heavily on vaccination to prevent disease. However, vaccination does not always confer protective immunity on an animal. Please discuss the factors which may be associated with failures in vaccination.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
UNIVERSITY EXAMINATIONS - JUNE 1989

VMP 440

VETERINARY PARASITOLOGY

TIME: **THREE HOURS**

ANSWER: 2 QUESTIONS FROM ENTOMOLOGY SECTION
 2 QUESTIONS FROM PROTOZOOLOGY SECTION
 2 QUESTIONS FROM HELMINTHOLOGY SECTION
 ALL QUESTIONS CARRY EQUAL MARKS

ENTOMOLOGY SECTION

1. Discuss arthropods as the direct causative agents of disease and discomfort in livestock.
2. Discuss the constraints and alternatives to chemical pesticides for tick control.
3. Give an account of the veterinary importance of mites.
4. Describe the behavioural activities of vectors for animal trypanosomiasis and their implication to the present methods of control.
5. Write short notes on 4 of the following:
 - (a) Scabies
 - (b) Glossina morsitans
 - (c) Myiasis
 - (d) Intermediate hosts for Dipylidium caninum
 - (e) Tick paralysis

PROTOZOOLOGY SECTION

1. Define the following:
 - (i) Trophozoite
 - (ii) Sporozoite
 - (iii) Sporogony
 - (iv) Zoonosis
 - (v) Parasite
2. Explain the significance of enzootic stability in tick borne disease control strategies.

Q2. Write fit words into the parentheses.

	<u>Toxoplasma gondii</u>	<u>Eimeria tenella</u>	<u>Trichomonas foetus</u>	<u>Balantidium</u>
host or final host	()	()	cattle	pig
intermediate host	+	—	()	()
Site (in final host)	small intestine	caecum	♂ preputial cavity () ♀ ()	()
Infective stage (for final host)	oocyst, tachyzoite ()	oocyst	trophozoite	()
Pathogenesis in final host	enteritis	()	()	non-pathogen

VMP 440

HELMINTHOLOGY

1. Describe the morphological and biological characteristics on one species of dioecious trematodes.
2. Describe the outline of the life cycle on Fasciola gigantica and discuss the epidemiological significance.
3. By using diagrams describe the various larval stages of family Taeniidae and discuss their importance on public health.
4. Discuss the life cycle of Moniezia species emphasizing the significance of their intermediate hosts in the infection to the final hosts.
5. Write short notes on the following species:
 - (a) Trichinella spiralis
 - (b) Strongylus vulgaris
 - (c) Dirofilaria immitis
6. Describe the life cycle and pathogenicity of Haemonchus contortus

END OF EXAMINATION