THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS- OCT/NOV 1995

SCHOOL OF VETERINARY MEDICINE

1. Veterinary Anatomy and Physiology paper 1--------- VMB 210

2. Veterinary Embryology ---------- VMB 211

3. Veterinary Physiology ---------- VMB 320

4. Veterinary Biochemistry ---------- VMB 330

5. Deferred ---------- VMB 330

6. Veterinary Medicine 1 ---------- VMC 510

7. Veterinary Surgery I ---------- VMC 520

8. Veterinary reproduction and Obstetrics (theriogenology) ---------- VMC 535

9. Veterinary Medicine II---------- VMC 610

10. Veterinary Surgery II ---------- VMC 620

11. Infectious diseases of livestock ---------- VMD 515

12. Veterinary Clinical Pathology---------- VMD 530

13. Livestock Economics---------- VMD 540

14. Veterinary Medicine II ---------- VMC 610

15. Veterinary Surgery II ---------- VMC 610

16. Preventive Veterinary Medicine---------- VMD 611

17. Veterinary Public Health ---------- VMD 630

18. Veterinary Pathology ---------- VMP 410

19. Veterinary Bacteriology and Mycology ---------- VMP 430

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMB 210

VETERINARY ANATOMY AND PHYSIOLOGY

PAPER I

ANATOMY

TIME: THREE HOURS

INSTRUCTIONS:

ATTEMPT ONLY FIVE (5) QUESTIONS
ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS WHERE POSSIBLE

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1. A dog which is very lame on the left hind limb is brought to the clinic. After a careful examination you find that the proximal end of the tibia can be drawn further cranially than normal.

   (i) Give an anatomical explanation of the most likely cause of this situation.

   (ii) With the aid of a labelled diagram, describe the various structures which help to stabilise this joint.

2. (i) The vocal fold is a mobile raised ridge of mucous membrane found within the larynx which has two (2) main roles.

      (a) What are these roles?

      (b) What results are likely to follow damage in the vocal folds?

   (ii) (a) Define the term pleural cavity and explain its functional importance.

      (b) A dog is presented to you with chylothorax i.e. the pleural cavity contains a quantity of lymph. What functional effects would you expect this to produce in the animal? How might this condition change the normal radiographic anatomy of the thorax? Suggest what is the most likely source of this abnormal collection of lymph.

3. Write short notes on:

   i) isthmus of fauces
   ii) broad ligament of female reproductive tract
   iii) lobation and ligaments of dog liver
   iv) main muscles of mastication

4. i) What types of fibrous joints occur in the body? Give an example of each type which you mention.

   ii) What joints are formed between an adjacent pair of lumbar vertebrae? Indicate what types of joints these are. What movements occur in the lumbar spine of the dog? List the main muscles which produce each movement which you mention.

5. What nerves form the lumbosacral plexus in the dog? List the main nerves emerging from the plexus. Select three (3) of these nerves and explain briefly the defects which you would suspect in cases involving with damage to each of these nerves.

6. Write concise notes on each of the following:

   i) The ventricular system of the brain.

   ii) The structures responsible for production, circulation and removal of aqueous humor.

   iii) The distribution of cranial nerve V (trigeminal)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMB 211

VETERINARY EMBRYOLOGY

TIME: THREE HOURS

INSTRUCTIONS: ANSWER FIVE (5) QUESTIONS

ILLUSTRATE YOUR ANSWER WITH DIAGRAMS WHERE POSSIBLE

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1. Briefly describe the development of each of the following:

   (i) Hypophysis

   (ii) Tongue

   (iii) Eye

2. Write short notes on each of the following:

   (i) Aortic Arches

   (ii) Pharyngeal Pouches

   (iii) Gastrulation

3. Describe the process of the development of the kidney in mammals.

4. The embryonic stomach develops from the foregut region of the gut tube.

   (a) Describe how the stomach develops in the dog from the initial stage up to the time when it assumes its final shape and position.

   (b) List the other derivatives of the foregut.

5. Briefly explain each of the following:

   (a) Myotome
   (b) Chondrodystrophy
   (c) Intramembranous ossification
   (d) Urorectal fold/septum

6. The placenta of the pig is diffuse, non-decidiate, choriallantoic and epitheliochorial in type. Explain this description.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMB 310

VETERINARY ANATOMY

TIME: THREE HOURS

INSTRUCTIONS: ATTEMPT ONLY FIVE (5) QUESTIONS

ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS WHERE POSSIBLE

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1. Describe the anatomy and arrangement of the structures that constitute the ventrolateral abdominal wall of the bovine. What are the important features of its innervation, which are relevant in regional anaesthesia?

2. Give an account of the anatomy of the udder of the cow including its attachment to the body wall, and its blood and nerve supply.

3. Describe the anatomy of the stifle joint of the horse, indicating how it differs from that of the goat.

4. Describe the topographical location of the various compartments of the ruminant stomach and describe the exterior and interior of the rumen.

5. Write short notes on each of the following in cattle:

   (i) Arterial supply of the brain

   (ii) Muscles of mastication

   (iii) Pharynx

   (iv) Paranasal Sinuses

6. Write concise notes on the important features of each of the following in the domestic fowl.

   (i) The air sacs
   (ii) The cloaca
   (iii) The bones of the pelvic limb

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMB 320

VETERINARY PHYSIOLOGY

TIME: THREE (3) HOURS

INSTRUCTION: ANSWER ONLY FIVE (5) QUESTIONS OUT OF SEVEN (7)

All questions have equal marks.

1. (a) Write an experimental proposal including objectives, materials and methods you would use to demonstrate some fundamental properties of cardiac muscles and some aspects of the regulation of heart function in a frog. Explain the basis for the observed effects of the following on the cardiac muscle;

   (i) Electrical stimulation
   (ii) Varying the frequency of electrical stimulation
   (iii) Adrenaline and acetylcholine

   (b) What are the similarities and differences the cardiac and skeletal muscle properties in mammals?

   (c) Comment on the mechanisms, regulation and factors that influence heart function in mammals.

2. Discuss briefly-;

   (i) How chemoreceptors contribute to the control of respiration.

   (ii) How a steady level of sodium ions is normally maintained in the extracellular fluids.

   (iii) The dilution technique used to determine volumes of the various body water compartments and its limitations.

3. Discuss the neurophysiological basis of instinctive behaviour.

4. (a) You are required to set up an experiment to demonstrate some factors that affect urine flow rate and osmolarity. Outline the objectives, materials and procedures you would use.

(b) Discuss the renal mechanisms for diluting and concentrating urine.

5. (a) How is pancreatic secretion regulated?

(b) Describe the movements of the reticulo-rumen. By what mechanisms are these movements controlled?

6. (a) The resting metabolic rate (MR) may be determined by indirect calorimetry such as use of spirometry.

(i) What assumptions are made in calculating metabolic rate from spirometry? Explain.

(ii) What other methods may be used for determining energy requirements for domestic animals under a variety of environmental conditions?

(iii) What factors affect metabolic rate?

(iv) What value do metabolic rate measurements have to farm practice?

(v) For what purposes does an animal require energy?

(b) Discuss the mechanisms of temperature regulation in the body.

7. Describe the factors and postulated mechanisms which are responsible for initiating parturition in the ewe. How can parturition be artificially induced?

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMB330

VETERINARY BIOCHEMISTRY

TIME: THREE HOURS

INSTRUCTIONS: ANSWER FIVE (5) OF THE FOLLOWING QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS

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1. Describe the primary, secondary and tertiary structure of a globular protein. What are the major structural differences with fibrous proteins?

2. Describe the role of the active site of an enzyme in binding and catalysis. What is an enzyme-substrate complex? Explain using the action of pyridoxal phosphate as a co-enzyme.

3. In a muscle cell, energy is often obtained from the degradation of fatty acids. Describe this pathway, and explain under what conditions this would be a main source of energy for the cell.

4. Write notes on three (3) of the following and discuss their importance in energy metabolism of the cell.

   (a) phosphofructokinase
   (b) succinic dehydrogenase
   (c) acetyl CoA carboxylase

5. Describe the enzymes involved in digestion of carbohydrates and proteins in a non-ruminant mammal. How might this differ in a ruminant? How might this affect the energy supply to the brain?

6. Give a detailed outline of an experiment to demonstrate the theory that DNA replication is semiconservative. Use diagrams to illustrate the experiment.

7. Discuss the functions and metabolism of the liver in a mammal. Give three examples (with structures) of important molecules synthesised in the liver for export.

8. (a) Glutathione is a tripeptide found in cells. Its structure is γ -glutamyl-cysteinyl-glycine.

   Draw the ionic structure as it would occur in the stomach of a mammal.

   (b) If glutathione is subjected to paper electrophoresis at the same pH, will it migrate to the positive or negative electrode?

   (c) Glutathione can be hydrolysed by acid. Can the constituent amino acids be separated on a cation exchange column using ion-exchange chromatography? Explain the technique and suggest a suitable pH for the eluting buffer.

   (d) Ninhydrin is a specific colour test for amino acids. Describe the chemical reaction and the colour it produces.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
UNIVERSITY EXAMINATIONS - JANUARY 1996
SUPPLEMENTARY AND DEFERRED
VMB 330

VETERINARY BIOCHEMISTRY

TIME: THREE HOURS

INSTRUCTIONS: ANSWER FIVE (5) OF THE FOLLOWING QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS

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1. Describe the structure of amino acids and how their structure is related to their functions in the cell.

2. Describe in detail the effect of pH and temperature on an enzyme. How would pH affect enzyme activity in the gastrointestinal tract? Give examples.

3. Describe the tricarboxylic acid cycle in detail, starting from acetyl coenzyme A. Describe how intermediates can be used to synthesise other compounds and give three examples and their products.

4. Write notes on three (3) of the following:

   (a) cytochrome oxidase
   (b) biotin
   (c) phosphatidyl ethanolamine
   (d) methionine

5. Describe the degradation of purines.
   Describe the role of uric acid in nitrogen excretion. What causes gout?

6. Deoxyribonucleic acid is the molecule that defines the genetic characteristics of an animal. Give the basic structure and describe how DNA is replicated.

7. A sudden drop in serum calcium level in a high yielding dairy cow can cause the animal to collapse, and this is called "milk fever". Describe the functions of calcium and why a sudden drop would have such a serious effect.

8. Explain the Beer - Lambert Law involved in spectrophotometry.
   Cholesterol in blood can be estimated using colorimetry. A sample of bovine serum was analysed for cholesterol as follows:

   1.0 ml serum was put in duplicate tubes, A and B. Cholesterol standard (0.5 mg/ml chloroform) was used to make a standard curve, as shown in the

following table. 3.0 ml of acetic anhydride and 0.1 ml of concentrated sulphuric acid was added to each tube.

Samples gave the following absorbance at 680 nm measured in a colorimeter.

Tube	1	2	3	4	5	6	A	B
Vol. Cholesterol standard (ml)	0.0	0.2	0.4	0.6	0.8	1.0		
Vol. bovine serum (ml)							1.0	1.0
Vol. Chloroform (ml)	3.0	2.8	2.6	2.4	2.2	2.0	2.0	2.0
A_{680}	0.0	0.057	0.115	0.175	0.230	0.290	0.139	0.141

Draw a standard curve for cholesterol from these results and use it to calculate the concentration of cholesterol in the bovine serum sample in mg per dl.

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMC 510

VETERINARY MEDICINE I

TIME: THREE HOURS

ANSWER ALL QUESTIONS IN SECTION A AND THREE QUESTIONS IN SECTION B
WRITE THE ANSWER TO EACH QUESTION ON A SEPARATE SHEET OF PAPER

SECTION A

1. Give brief pathogenesis and clinical accounts of the following conditions:

   a) Iron deficiency in pigs.
   b) Pregnancy toxaemia in ewes.
   c) Copper deficiency in cattle.
   d) Selenium/Vitamin E deficiency in cattle.

2. With respect to parturient paresis in cattle:

   a) Give details of the type of animal in which milk fever occurs most frequently.

   b) Describe the clinical signs of milk fever.

   c) Discuss the differential diagnosis of parturient paresis in cattle and indicate how you would reach a specific diagnosis.

3. Write short notes on each of the following in animals:

   a) Selenium toxicity.
   b) Salt poisoning.
   c) Toxic sources of arsenic.
   d) Clinical signs and treatment of organophosphate poisoning.

SECTION B

4. Discuss the principles of treatment, control and prevention of respiratory tract infections in farm animals.

5. At the beginning of the rainy season you are called to see a group of Holstein heifers in which the farmer has noticed acute abdominal distension.

   a) What would be your differential diagnosis?
   b) For each condition mentioned give the aetiology, pathogenesis, clinical signs and treatment.

6. Renal disease is important in all species. List in a table the clinical features of acute and chronic renal disease in dogs.

   Briefly describe five ancillary aids or laboratory tests commonly used in practice to investigate renal disease in animals indicating the clinical significance of each.

7. Discuss the aetiology, clinical manifestations, diagnosis and management of congestive heart failure in domestic animals.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMC 520

VETERINARY SURGERY I

TIME: THREE HOURS

INSTRUCTIONS:

ANSWER ALL QUESTIONS IN SECTION A AND THREE QUESTIONS IN SECTION B

SECTION A

1. (a) Briefly describe the various forms of local anaesthesia (analgesia) used in veterinary practice.

   (b) Describe your anaesthetic technique of choice for

   i) the amputation of the digit of a dairy cow

   ii) the amputation of a hind limb of an eight year old Dalmatian bitch as a result of an irreparable communited fracture

2. (a) A set of surgical equipment has been used for a major surgical operation. Describe how you would prepare the same equipment for a subsequent operation. Your unit has all the facilities required for such a preparation.

   (b) Describe how the surgeon may prepare himself/herself for an asceptic surgical procedure.

3. You are called to examine a horse that is extremely lame. The owner reports that the horse was ridden yesterday and at the end of the ride was showing a minimal lameness. You have the groom walk the horse and the lameness which involves the right front leg is quite obvious. The horse will not allow you to pick up the left fore foot and when he is not walking, he does not bear weight on the right front leg. When you examine the animal closely you notice that the hoof wall is warm to the touch and that the pulse in the digital artery of the involved foot is stronger than it is in the left front foot.

Discuss the most likely diagnosis. Be sure to include

(a) the aetiology of the condition

(b) methods that you would use to confirm a diagnosis and rule out other possible conditions

(c) Medical and surgical management of the most likely diagnosis

SECTION B

4. (a) Name five major emergencies associated with the use of general anaesthesia in veterinary practice and explain how they may be prevented and/or managed.

(b) How would you differentiate between a ligature and a stitch? What are the common cause for slipped ligatures and how may these be prevented?

5. You are called to see a cow that delivered a calf three hours prior to your arrival. You find that the cow is unable to stand and that it has an extremely large mass present ventral to her anus. It is bluish red in colour and has several rows of projections on the surface of the mass which can best be described as villous masses of tissues that are connected to the main mass by a small pedicle. Some of these villous masses are bleeding.

(a) What is your diagnosis?

(b) If you are not sure of the diagnosis, discuss the steps that you would take to come to a definitive diagnosis and provide a list of possible conditions.

(c) Discuss the condition you have diagnosed in (a) above or the most likely condition of those listed in (b) above. Be sure to include

i) The reason/reasons the condition occured.

ii) The position the cow should be placed to allow the most expedient correction.

iii) Steps that are routinely taken to correct the condition

iv) Suggested medical management of the cow during and following the correction of the condition.

6. Discuss castration in horses. Be sure to include:-

   (a) The different positions that can be used and their positive and negative aspects.

   (b) The anaesthetic protocols that are routinely used.

   (c) A detailed description of the suggested procedure for castrating the horse in a standing position.

   (d) Routine postoperative medication or medications and the rationale for their use.

   (e) Recommendations to the owner for postoperative management.

7. (a) Enumerate the different causes of vomition/regurgitation of oesophageal origin.

   (b) Describe in detail how you would manage a case of a smooth round foreign body lodged at the oesophago-gastric junction (CARDIA) in a two year old bitch. The case was first noticed four hours prior to its presentation to you.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMC 535

VETERINARY REPRODUCTION AND OBSTETRICS (THERIOGENOLOGY)

TIME: 3 HOURS

INSTRUCTIONS:

1. READ ALL QUESTIONS CAREFULLY BEFORE ATTEMPTING TO ANSWER ANY.
2. THERE ARE TWO SECTIONS IN THIS PAPER.
3. ANSWER ALL QUESTIONS IN SECTION A AND ANY THREE OF THE FOUR QUESTIONS FROM SECTION B.
4. EACH QUESTION CARRIES EQUAL MARKS.

SECTION A

1. With the help of a labelled diagram which shows some hormonal changes during the whole gestation period, describe the endocrinological changes during pregnancy in the mare.

2. A cow which has been pregnant for 9 months is presented to you for examination because it has been observed straining for over 5 hours but with no sign of a calf being born.

   Upon examination, you notice an abnormally distended abdomen.

   (i) Which two disease conditions would you suspect?

   (ii) How are they differentiated from each other?

   (iii) How would you treat the cow in view of your diagnosis?

3. A farmer calls you to examine one of his dairy cow which was inseminated 7 months ago and was confirmed pregnant.

   However, he has noticed a foul discharge from the vulva containing hair.

   The cow is in good condition and is eating well except that milk production has slightly dropped.

On rectal examination you feel some crepitations and hard objects within the uterus.

(i) Which disease condition would you suspect? Give reasons.

(ii) How would you attempt to treat the case?

(iii) What in your opinion would be the best way to deal with the case?

SECTION B

1. By means of a flow-chart which shows the whole process of parturition, describe the mechanism including fetal and mother-body's regulation for parturition to occur in the ewe.

2. Describe the three stages of parturition and give their duration in cattle.

3. The following are the results of a bull after breeding soundeness examination:-

- Scrotal circumference, 21 cm
- The testes were hard and without turgidity
- Epididymis felt empty and firm
- Waterly semen was collected with very low semen concentration (2 000 sperms/ml)
- No semen could be observed in formol saline
- Only twenty spermatozoa could be seen on a William's Stained Slide
- Few epithelial cells were observed on cell staining
- All other findings were normal

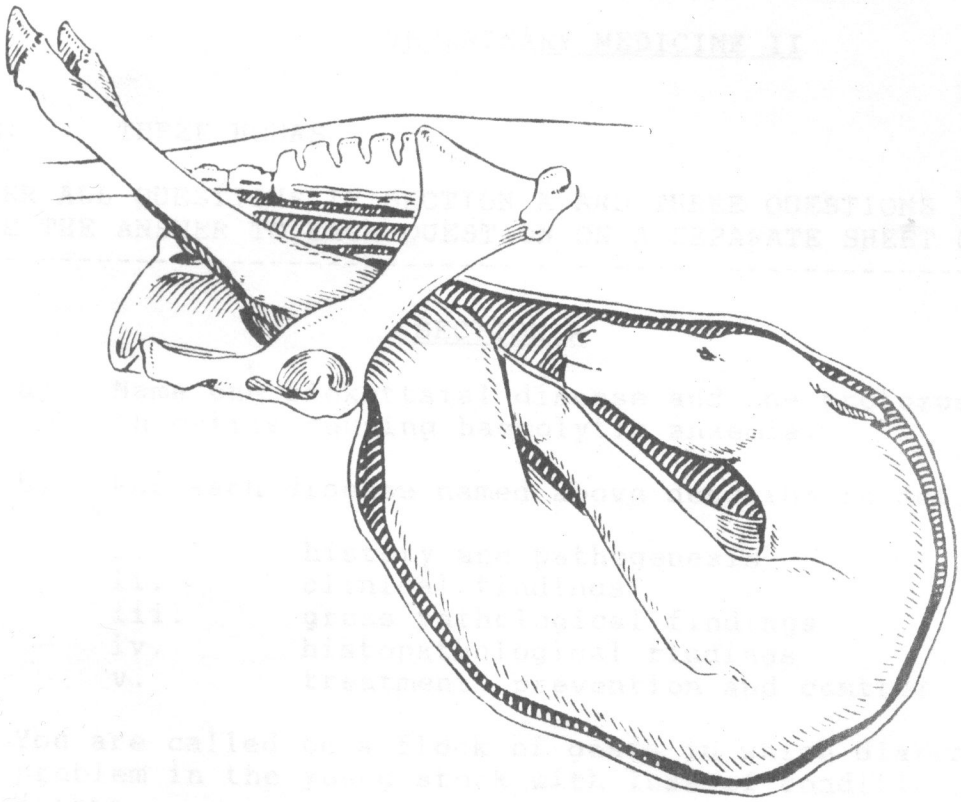
(i) Comment on these findings.

(ii) Which disease condition would you suspect?

(iii) Would you recommend this bull for breeding? Give reasons.

4. (i) Describe the presentation, position and posture of the fetus shown below.

(ii) How would you correct the presentation, position and posture of the same fetus (use appropriate medical terminologies and obstetrical equipment).



END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMC 610

VETERINARY MEDICINE II

TIME: THREE HOURS

ANSWER ALL QUESTIONS IN SECTION A AND THREE QUESTIONS IN SECTION B
WRITE THE ANSWER TO EACH QUESTION ON A SEPARATE SHEET OF PAPER.

SECTION A

1. a) Name one rickettsial disease and one protozoal disease in cattle causing haemolytic anaemia.

   b) For each disease named above describe in detail:

   i. history and pathogenesis
   ii. clinical findings
   iii. gross pathological findings
   iv. histopathological findings
   v. treatment, prevention and control

2. You are called to a flock of goats in which diarrhoea is a problem in the young stock with loss of condition and some deaths.

   i. How would you endeavour to reach a definitive diagnosis?

   ii. For each diagnosis mentioned above what treatment would you give? How would you advise the owner with respect to management and control of the problem? (Be sure to mention aetiology and predisposing factors).

3. A five year old German Shepherd dog is presented by an owner who complains that the dog has been lethargic for five days. On clinical examination the peripheral lymph nodes are very large, the spleen is palpable and there is pyrexia.

   a) Describe step by step how you would proceed in order to reach a diagnosis.

   b) For each condition suspected, outline how you would manage the case and indicate the advice you would give to the owner.

SECTION B

4. What signs will make you suspect vitamin A deficiency in a 500 sow herd? How will you reach a conclusive diagnosis? Discuss the treatment, control and prevention of the condition.

5. A farmer who raises cattle, sheep and goats near Lusaka complains of unthriftiness in the weaned and adult small ruminants. From the history obtained and initial physical examination of a selected sample of the affected animals, the cattle are found to be in good condition and productive, the sheep and goats are generally thin or emaciated with poor hair coats and moderately distended abdomens but all are eating well. Preliminary investigations suggest liver damage associated with plant poisons.

   i. Give a detailed list of possible causes that you suspect in such a situation?

   ii. What findings might you expect from physical examination and clinical pathology?

   iii. Describe in detail the pathological features which would enable a final diagnosis in the condition(s) mentioned above (both grossly and microscopically).

   iv. What preventive measures would you recommend?

6. Discuss two important skin diseases in cattle in Zambia with respect to occurrence, clinical features, diagnosis, treatment and control.

7. Write an outline on major diseases of the cardiovascular system of food animals in Zambia.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMC 620

VETERINARY SURGERY II

TIME: 3 HOURS

INSTRUCTIONS:

ANSWER ALL QUESTIONS IN SECTION A AND THREE QUESTIONS IN SECTION B

SECTION A

1. You are presented with a Salter IV fracture of the left femur of a 7 month old dachshund dog. Describe in detail how you will attempt to correct this fracture. State clearly the difficulties encountered in this procedure and the steps you would take to overcome these difficulties. What are the possible post operative complications.

2. Discuss castration of bull calves. Be sure to include:

   (a) the reason or reasons for performing this surgery

   (b) restraint techniques that are routinely used for different sizes of bulls

   (c) detailed description of the surgical method that was suggested for 150 Kg calves

   (d) routine postoperative medication or medications and the rationale for their use

   (e) recommendations to the owner for postoperative management

3. Describe in detail the radiographic features associated with the following pathologies:-

   (a) an occlusive foreign body in the small intestine of a dog caused by a rubber ball

   (b) gross ascites in a dog

   (c) a grossly enlarged stomach with torsion in a boxer bitch

   (d) a chronic case of decompensated left sided heart failure in a bitch

(e) oesophageal obstruction due to persistent right sided aortic arch in a dog

(f) severe dysplasia

(g) osteosarcoma of the mid-femur in a cat

(h) gross hydrothorax in a cat

(i) prostatic enlargement in male dogs

SECTION B

4. You are asked to examine an eight year old mare that has had a chronic unilateral nasal discharge for 3 months. The groom reports that the discharge is minimal but always present and that it has a very offensive smell. Discuss your management of this case. Be sure to include:-

(a) the most likely diagnosis in view of the clinical signs

(b) steps that you would take to make a definitive diagnosis

(c) clinical management of the most likely diagnosis

5. An owner of a Thoroughbred mare that was bred 30 days ago asked you to perform a pregnancy examination on it. You do a rectal examination and find that there is a 30 day old fetus in the uterus. When you remove your arm from the rectum, you notice that there was blood on your glove. Discuss how you would manage the situation.

Be sure to include:-

(a) Diagnostic methods that you would use

(b) Management of the possible problem or problems

(c) Prognosis

6. (a) Define the term "hernia" and give a detailed classification of hernias

(b) Describe how you would manage a strangulated and incarcerated umbilical hernia in a 10 month old calf

(c) Atresia ani is a common condition in piglets. Describe the surgical technique for correcting this condition.

7. A one year old cat is presented with a history of weakness, recurrent oedema of the lower parts of the limbs, ascites, fainting spells, and exercise intolerance associated with cyanosis. On clinical and radiological examination you discover a machinery murmur most audible at the fourth left intercostal space and a generalised cardiac enlargement with congestion of the lung fields.

(a) What conditions would you suspect

(b) Of the above, which is most likely if an expert tells you that the machinery murmur you had heard was not restricted to the diastolic period?

(c) Name the structure that needs to be ligated in the surgical management of this condition.

(d) Is it also necessary to transect this structure? Why?

(e) Describe in detail the anaesthetic procedure you would use in this case.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMD 515

INFECTIOUS DISEASES OF LIVESTOCK

TIME: THREE HOURS

ANSWER: ALL QUESTIONS

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1. Answer the following questions on foot-and-mouth disease (FMD): (50 marks in total)

   (a) Name the family, genus and species of FMD virus. (5 marks)

   (b) Name the types of FMD virus and give an approximate number of subtypes of FMD virus known to exist in the world. Which FMD virus types are endemic in Zambia? (5 marks)

   (c) Why is FMD regarded as one of the most important disease in endemic countries such as Zambia? Why is it difficult to eradicate FMD in this country? (15 marks)

   (d) Describe the major clinical manifestations and pathological changes in the affected cattle. (15 marks)

   (e) Describe the advantage and disadvantage of Frenkel vaccine. (10 marks)

2. Discuss the following: (50 marks in total)

   (a) Epizootiology of rabies. (10 marks)

   (b) Pathogenesis of rabies. (10 marks)

   (c) Aetiology and epizootiology of African swine fever. (10 marks)

   (d) Epizootiology of Rift Valley fever. (10 marks)

   (e) Clinical manifestations and gross pathological changes of bluetongue in sheep and cattle. (10 marks)

3. Discuss the following: (50 marks in total)

   (a) The pathogenesis and clinical manifestations of infection due to Mycobacterium bovis in cattle. (25 marks)

   (b) Postparturient desensitization in cattle infected with Mycobacterium bovis. (25 marks)

4. Give an account of the distribution in nature, clinical manifestations and the immediate control measures of infections due to Bacillus anthracis. (50 marks)

5. Discuss the aetiology, epidemiology, pathogenesis, gross pathological lesions and control of bovine babesiosis (redwater) in Zambia and elsewhere. (50 marks)

6. Define cowdriosis (heartwater) and discuss its aeticlogy, epidemiology, clinical signs, chemotherapy and methods presently used to control it in the southern African region. (50 marks)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMD530

VETERINARY CLINICAL PATHOLOGY

TIME: THREE HOURS MARKS 60

ANSWER: ALL QUESTIONS

Q1. Describe the different morphologic abnormalities of erythrocytes found in domestic animals. (10)

Q2. What is anaemia? Give with comparison of the morphologic and etiological classification of anaemia in detail. (2 + 8)

Q3. What do you understand by diagnostic exfoliative cytology. Give its advantages and disadvantages. Describe in detail the different locations with mention of conditions where it could be applied for clinical diagnosis in veterinary practice. (1+4+5)

Q4. A dog was brought to the clinic, showing following symptoms: emaciation, depression, inability to stand and anemic mucous membranes. Whole blood transfusion, prednisolone and iron treatment were given previously, but they were not effective. The dog is 7 years-old, spayed and weighs 3.6Kg. Based on this information and hematological and biochemical analyses, please answer following questions. (10)

Hematological and Biochemical analyses

Item	Case Value	Reference
RBC($x10^6$ /µl)	2.90	5.5-8.5
Hb (g/dl)	5.7	12-18
BUN (mg/dl)	87	10-28
Creatinine (mg/dl)	2.8	0.8-1.0
ALT (IU/L)	173	20-75
ALP (IU/L)	2,241	20-100
Cholesterol (mg/dl)	431	135-270
pH (arterial)	7.07	7.31-7.41
HCO_3 (arterial) (mEq/L)	8	18-24
PCO_2 (arterial) (mmHg)	18.4	38

A. What could be the possible reason(s) for the anemia in the patient?

B. Explain acid-base balance in the patient.

C. Explain the possible reason for the increase in the ALP activity and also liver function in the patient.

Q5. Write the importance on the need of a laboratory test to a Veterinary Clinician. What are the requirements to establish a complete clinical pathology laboratory? (4 + 6)

Q6. A dog aged 12 weeks is presented before you express problems like - Melena and pallor for several days, weakness, panting when made to run, quick fatigue and some times passing loose faeces with trace of blood. Following is the laboratory findings in respect of above dog.

Haematology

PCV - 14%
Hb - 3.9g/dl
RBC - 1.59 x 10^6/ul
MCV - 81.7fl.
MCH - 24.5 pg
MCHC - 30.0g/dl
Reticulocytes - 16.6%
Platelets-significant increase
Plasma Protein - 4.1g/dl

Faeces Examination

Ancyclostoma spp ova - Positive (++++)
Toxocara spp ova - Positive (+)

WBC - 17,500/ul
Neutrophils - 78%
Lymphocytes - 15%
Monocytes - 3%
Eosinophils 0 4%

Urinalysis

colar yellow
Sp. gr. - 1.020
pH - 6.0
Protein - Trace
Glucose - Trace
Blood - Negative
Sediments - No significant sediments

(A) Identify the different types of problems from the laboratory data. (4)

(B) Give your final diagnosis (4)

(C) Advise treatment (2)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMD 540

LIVESTOCK ECONOMICS

TIME: 3 HOURS

ANSWER: ALL 5 QUESTIONS. EACH QUESTION CARRIES 20% OF THE MARK. FORMULA SHEET AND TABLES 1 AND 3 ARE ATTACHED.

Q1. A vaccination project is being studied, affecting a cattle population of 12,500 head. The cattle population will be 12,500 head in the first year of the project, and it is growing at 3% per year.

The vaccine must be given to all cattle annually, and costs $1 per animal. Other running costs came to $13,600 a year.

Capital costs are estimated at $24,000 in year 1.

Benefits in terms of reduced disease losses, are estimated at $5 per animal per year.

The project is to be analysed over 5 years.

a) Calculate the Net present value and the Benefit-Cost Ratio for the project. The discount rate being used for this type of project is 12%.

b) Define uncertainty and how would you deal with it?

c) Due to uncertainty, some sensitivity analysis is required. It is possible that benefits may only be $4 per animal per year. How would this affect the project.

Q2. A dairy farmer has 10 dairy cows and always keeps his herd size fixed at this number of cows. In 1989, he sold a total of 12 600 litres of milk. In addition, his family consumed 1500 litres which were also produced by his cows. The price of milk is $0.50 per litre. He culled two cows, and in order to replace them he bought two pregnant heifers costing $350 per heifer. He sold 10 calves for $65 each.

and received $250 per cow

He spent $700 on medicines, insemination and veterinary costs for his cows. He spent $1780 on minerals and concentrates for the cows. He estimated depreciation on all his items at $560 per year and miscellaneous fixed costs at $1000 per year. All the labour for his cows is provided by the family. He estimated that value of this labour that he and his wife and child put into the cows was worth about $2 600 a year. He had no other costs.

For the year 1989, calculate the following:

a) enterprise output
b) gross margin
c) net farm income
d) management and investment income
e) comment on your results.

Q3. As part of your role as a District Veterinary Officer in X District, you gather some vital statistics for dogs during the year 1994.

A census on January 1, 1994, showed a population of 798 dogs, of which 452 were under 6 years old and 346 were 6 years and older. On January 1, 1995, there were 802 dogs, of which 320 were at least 6 years old, and 482 were under 6 years of age. During the year 376 puppies were born alive, there were 25 stillbirths, and 45 of the liveborn puppies died during the first 4 weeks of life.

There were 107 deaths from all causes (this includes infant deaths but not foetal deaths). Of these deaths 40 were dogs 6 years and older; specifically 6 from old age, 8 from cancer, 14 from accidents and 12 from other causes.

Calculate the following rates:

1. Crude live birth rates
2. Crude mortality rate
3. Age-specific mortality rate for animals under 6 years of age
4. Neonatal mortality rate (first 4 weeks of life)
5. Case-fatality rate due to cancer in animals 6 years and older

Q4. Dr. Nemuina was interested in estimating prevalence of ATICK disease (Note: an imaginary disease and can be transmitted by ticks) in cattle in Kenya. Since he did not have much money for his research, he decided to collect serum sample from two Districts (Kiambu and Nairobi), which were near the University. Soon after he initiated his survey (or cross-sectional study), he recognised that there are two types of grazing: <u>open</u> - extensive communal grazing and <u>zero</u> grazing.

Later serum were tested in the laboratory and were categorised as antibody present and antibody absent. The data are cross-classified based on District and grazing pattern as follows:

		Antibodies to the ATICK disease	
District	**Grazing**	**Present**	**Absent**
Kiambu	Open	56	272
Kiambu	Zero	3	67
Nairobi	Open	7	65
Nairobi	Zero	2	51

1) Compile the appropriate 2 X 2 tables to compare:

   a) the prevalence of antibodies to the disease in cattle in Kiambu and Nairobi and

   b) in cattle kept under open grazing to those kept under zero grazing.

Using the 2 X 2 tables and appropriate statistics, clearly and quantitatively discuss the following:

2) Is there an association between district and prevalence of antibodies to the disease? If there is an association, how strong is it?

3) Are cattle grazed on open pasture more likely to have antibodies to the disease than cattle kept under zero-grazing, and if so, how much more likely?

4) Dr. Nemuina did further calculation using Mantel-Haenszel method. He found that there was no significant association between the presence of antibodies to the disease and district when controlling for grazing. On the other hand, when controlling for district, there was a significant association between the presence of antibodies to the disease and grazing pattern. Summarize your finding based on Dr. Nemuina's analysis. In other words, what's the take home message?

Q5. Below is a data set illustrating the incidence of a disease (based on positive identification of the causative agent) as recorded by a DVO in a district of Southern Province of Zambia over a ten year period during the past decade. Assuming that the population at risk was more or less constant over the period, comment on the temporal distribution of this disease, explaining possible causative associations with these trends. What further information would be helpful to confirm your suspicions. Name five diseases affecting cattle that could fit this type of temporal distribution.

MONTH/ YEAR	1	2	3	4	5	6	7	8	9	10	Σ^X	$\bar{X}$
JAN	125	86	44	47	28	21	58	43	16	28	496	49.6
FEB	136	92	41	74	36	36	84	73	28	57	657	65.7
MARCH	142	133	87	120	63	98	140	112	57	76	1028	102.8
APRIL	140	160	124	134	111	160	187	187	73	105	1381	138.1
MAY	132	126	136	112	144	185	224	124	102	125	1410	141.0
JUNE	116	84	116	74	120	266	212	186	147	111	1432	143.2
JULY	60	52	72	32	82	238	136	162	164	58	1056	105.6
AUGUST	56	31	47	25	31	108	82	76	122	19	597	59.7
SEPT	33	10	20	18	16	53	24	46	73	5	298	29.8
OCT	32	12	12	16	9	32	13	21	22	2	171	17.1
NOV	20	8	8	10	12	21	8	12	15	5	119	11.9
DEC	72	25	24	34	22	12	10	3	8	26	236	23.6
TOTAL	1064	819	731	696	674	1230	1178	1045	827	617		

FORMULA SHEET

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

2. IRR = lower DR + $\frac{\text{(the difference between the DR's)} \times \text{NPV at the lower DR}}{\text{the sum of the absolute values of the two NPV's}}$

3. $FV = PV(1 + i)^n$

END OF EXAMINATION

Table 1. *Discount factors.*

The present value of 1 received or spent in a given future year 'n' at a given discount 'i'.

Discount factor: $1/(1 + i)^n$

Yrs \ %	2	4	5	6	8	9	10	12	14	15	16	18	20	25	30	35	40	45	50
1	.980	.962	.952	.943	.926	.917	.909	.893	.877	.870	.862	.847	.833	.800	.769	.741	.714	.690	.667
2	.961	.925	.907	.890	.857	.842	.826	.797	.769	.756	.743	.718	.694	.640	.592	.549	.510	.476	.444
3	.942	.889	.864	.840	.794	.772	.751	.712	.675	.658	.641	.609	.579	.512	.455	.406	.364	.328	.296
4	.924	.855	.823	.792	.735	.708	.683	.636	.592	.572	.552	.516	.482	.410	.350	.301	.260	.226	.198
5	.906	.822	.784	.747	.681	.650	.621	.567	.519	.497	.476	.437	.402	.328	.269	.223	.186	.156	.132
6	.888	.790	.746	.705	.630	.596	.564	.507	.456	.432	.410	.370	.335	.262	.207	.165	.133	.108	.088
7	.871	.760	.711	.665	.583	.547	.513	.452	.400	.376	.354	.314	.279	.210	.159	.122	.095	.074	.059
8	.853	.731	.677	.627	.540	.502	.467	.404	.351	.327	.305	.266	.233	.168	.123	.091	.068	.051	.039
9	.837	.703	.645	.592	.500	.460	.424	.361	.308	.284	.263	.225	.194	.134	.094	.067	.048	.035	.026
10	.820	.676	.614	.558	.463	.422	.386	.322	.270	.247	.227	.191	.162	.107	.073	.050	.035	.024	.017
11	.804	.650	.585	.527	.429	.388	.350	.287	.237	.215	.195	.162	.135	.086	.056	.037	.025	.017	.012
12	.788	.625	.557	.497	.397	.356	.319	.257	.208	.187	.168	.137	.112	.069	.043	.027	.018	.012	.008
13	.773	.601	.530	.469	.368	.326	.290	.229	.182	.163	.145	.116	.093	.055	.033	.020	.013	.008	.005
14	.758	.577	.505	.442	.340	.299	.263	.205	.160	.141	.125	.099	.078	.044	.025	.015	.009	.006	.003
15	.743	.555	.481	.417	.315	.275	.239	.183	.140	.123	.108	.084	.065	.035	.020	.011	.006	.004	.002
16	.728	.534	.458	.394	.292	.252	.218	.163	.123	.107	.093	.071	.054	.028	.015	.008	.005	.003	.002
17	.714	.513	.436	.371	.270	.231	.198	.146	.108	.093	.080	.060	.045	.023	.012	.006	.003	.002	.001
18	.700	.494	.416	.350	.250	.212	.180	.130	.095	.081	.069	.051	.038	.018	.009	.005	.002	.001	.001
19	.686	.475	.396	.331	.232	.194	.164	.116	.083	.070	.060	.043	.031	.014	.007	.003	.002	.001	.000
20	.673	.456	.377	.312	.215	.178	.149	.104	.073	.061	.051	.037	.026	.012	.005	.002	.001	.001	.000
21	.660	.439	.359	.294	.199	.164	.135	.093	.064	.053	.044	.031	.022	.009	.004	.002	.001	.000	.000
22	.647	.422	.342	.278	.184	.150	.123	.083	.056	.046	.038	.026	.018	.007	.003	.001	.001	.000	.000
23	.634	.406	.326	.262	.170	.138	.112	.074	.049	.040	.033	.022	.015	.006	.002	.001	.000	.000	.000
24	.622	.390	.310	.247	.158	.126	.102	.066	.043	.035	.028	.019	.013	.005	.002	.001	.000	.000	.000
25	.610	.375	.295	.233	.146	.116	.092	.059	.038	.030	.024	.016	.010	.004	.001	.001	.000	.000	.000
30	.552	.308	.231	.174	.099	.075	.057	.033	.020	.015	.012	.007	.004	.001	.000	.000	.000	.000	.000
35	.500	.253	.181	.130	.068	049	.036	.019	.010	.008	.006	.003	.002	.000	.000	.000	.000	.000	.000
40	.453	.208	.142	.097	.046	032	.022	.011	.005	.004	.003	.001	.001	.000	.000	.000	.000	.000	.000
45	.410	.171	.111	.073	.031	.021	.014	.006	.003	.002	.001	.001	.000	.000	.000	.000	.000	.000	.000
50	.372	.141	.087	.054	.021	.013	.009	.003	.001	.001	.001	.000	.000	.000	.000	.000	.000	.000	.000

The future value of 1 invested at a given rate of interest "i" for a given number of years "n".

Compounding factor: $1 \times (1 + i)^n$

Yrs \ %	2	4	5	6	8	9	10	12	14	15	16	18	20	25	30	35	40	45	50
1	1.020	1.040	1.050	1.060	1.080	1.090	1.100	1.120	1.140	1.150	1.160	1.180	1.200	1.250	1.300	1.350	1.400	1.450	1.500
2	1.040	1.082	1.103	1.124	1.166	1.188	1.210	1.254	1.300	1.323	1.346	1.392	1.440	1.563	1.690	1.823	1.960	2.103	2.250
3	1.061	1.125	1.158	1.191	1.260	1.295	1.331	1.405	1.482	1.521	1.561	1.643	1.728	1.953	2.197	2.460	2.744	3.049	3.375
4	1.082	1.170	1.216	1.262	1.360	1.412	1.464	1.574	1.689	1.749	1.811	1.939	2.074	2.441	2.856	3.322	3.842	4.421	5.063
5	1.104	1.217	1.276	1.338	1.469	1.539	1.611	1.762	1.925	2.011	2.100	2.288	2.488	3.052	3.713	4.484	5.378	6.410	7.594
6	1.126	1.265	1.340	1.419	1.587	1.677	1.772	1.974	2.195	2.313	2.436	2.700	2.986	3.815	4.827	6.053	7.530	9.294	11.39
7	1.149	1.316	1.407	1.504	1.714	1.828	1.949	2.211	2.502	2.660	2.826	3.185	3.583	4.768	6.275	8.172	10.54	13.48	17.09
8	1.172	1.369	1.477	1.594	1.851	1.993	2.144	2.476	2.853	3.059	3.278	3.759	4.300	5.960	8.157	11.03	14.76	19.54	25.63
9	1.195	1.423	1.551	1.689	1.999	2.172	2.358	2.773	3.252	3.518	3.803	4.435	5.160	7.451	10.60	14.89	20.66	28.33	38.44
10	1.219	1.480	1.629	1.791	2.159	2.367	2.594	3.106	3.707	4.046	4.411	5.234	6.192	9.313	13.79	20.11	28.93	41.08	57.67
11	1.243	1.539	1.710	1.898	2.332	2.580	2.853	3.479	4.226	4.652	5.117	6.176	7.430	11.64	17.92	27.14	40.50	59.57	86.50
12	1.268	1.601	1.796	2.012	2.518	2.813	3.138	3.896	4.818	5.350	5.936	7.288	8.916	14.55	23.30	36.64	56.69	86.38	129.7
13	1.294	1.665	1.886	2.133	2.720	3.066	3.452	4.363	5.492	6.153	6.886	8.599	10.70	18.19	30.29	49.47	79.37	125.3	194.6
14	1.319	1.732	1.980	2.261	2.937	3.342	3.797	4.887	6.261	7.076	7.988	10.15	12.84	22.74	39.37	66.78	111.1	181.6	291.9
15	1.346	1.801	2.079	2.397	3.172	3.642	4.177	5.474	7.138	8.137	9.266	11.97	15.41	28.42	51.19	90.16	155.6	263.3	437.9
16	1.373	1.873	2.183	2.540	3.426	3.970	4.595	6.130	8.137	9.358	10.75	14.13	18.49	35.53	66.54	121.7	217.8	381.8	656.8
17	1.400	1.948	2.292	2.693	3.700	4.328	5.054	6.866	9.276	10.76	12.47	16.67	22.19	44.41	86.50	164.3	304.9	553.7	985.3
18	1.428	2.026	2.407	2.854	3.996	4.717	5.560	7.690	10.58	12.38	14.46	19.67	26.62	55.51	112.5	221.8	426.9	802.8	1478.
19	1.457	2.107	2.527	3.026	4.316	5.142	6.116	8.613	12.06	14.23	16.78	23.21	31.95	69.39	116.2	299.5	597.6	1164.	2217.
20	1.486	2.191	2.653	3.207	4.661	5.604	6.727	9.646	13.74	16.37	19.46	27.39	38.34	86.74	190.0	404.3	836.7	1688.	3325.
21	1.516	2.279	2.786	3.400	5.034	6.109	7.400	10.80	15.67	18.82	22.57	32.32	46.01	108.4	247.1	545.8	1171.	2448.	4988.
22	1.546	2.370	2.925	3.604	5.437	6.659	8.140	12.10	17.86	21.64	26.19	38.14	55.21	135.5	321.2	736.8	1640.	3549.	7482.
23	1.577	2.465	3.072	3.820	5.871	7.258	8.954	13.55	20.36	24.89	30.38	45.01	66.25	169.4	417.5	994.7	2296.	5146.	11223
24	1.608	2.563	3.225	4.049	6.341	7.911	9.850	15.18	23.21	28.63	35.24	53.11	79.50	211.8	542.8	1343.	3214.	7462.	16834
25	1.641	2.666	3.386	4.292	6.848	8.623	10.83	17.00	26.46	32.92	40.87	62.67	95.40	264.7	705.6	1813.	4500.	10819	25251
30	1.811	3.243	4.322	5.743	10.06	13.27	17.45	29.96	50.95	66.21	85.85	143.4	237.4	807.8	2620.	8129.	24210	69349	>100t
35	2.000	3.946	5.516	7.686	14.79	20.41	28.10	52.80	98.10	133.2	180.3	328.0	590.7	2465.	9728.	36449	>100t	>100t	>100t
40	2.208	4.801	7.040	10.29	21.72	31.41	45.26	93.05	188.9	267.9	378.7	750.4	1470.	7523.	36119	>100t	>100t	>100t	>100t
45	2.438	5.841	8.985	13.76	31.92	48.33	72.89	164.0	363.7	538.8	795.4	1717.	3657.	22959	>100t	>100t	>100t	>100t	>100t
50	2.692	7.107	11.47	18.42	46.90	74.36	117.4	289.0	700.2	1084.	1671.	3927.	9100.	70065	>100t	>100t	>100t	>100t	>100t

>100t indicates that the number exceeds 100 000.

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/ NOVEMBER 1995

VMD 611

PREVENTIVE VETERINARY MEDICINE

TIME: 3 HOURS

ANSWER: ALL QUESTIONS

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1. (a) Define Preventive Veterinary Medicine and state its relationship with Epidemiology. Give a reason(s) for this relationship. What is involved in the population unit?

   (b) Define and classify livestock movement control and state how it is enforced in Zambia. (4 points)

2. (a) State the requirements of an ideal vaccine and briefly discuss factors that could influence the animal's response to vaccination.

   (b) Define disinfection and briefly describe disinfection methods.

   (c) Name and briefly describe types of vaccine (6 points)

3. (a) Define environmental control and describe how it is performed.

   (b) What is depopulation and under what circumstances is it put into use?

   (c) Name and briefly describe the main vector control strategies. Which one is the most applicable for Zambia and why? (6 points)

4. (a) Briefly state the criteria for selecting farmers to participate in a herd health programme.

   (b) What are the main causes of reproductive inefficiency in the dairy herd and how would you get rid of them?

   (c) State the targets of performance in a swine herd.

   (d) As a herd health veterinarian, what advice would you be expected to give during your scheduled visits to your participating beef herds (9 points)

5. (a) Briefly discuss how you would control ticks on a game ranch.

(b) Name two diseases of ranched crocodiles and briefly discuss their control.

(c) Briefly discuss the role of wildlife in the epidemiology of the following diseases:

(i) Anthrax
(ii) Malignant catarrhal fever
(iii) Foot and mouth disease (FMD)

(d) Outline the advantages of game ranching over livestock. (9 points)

6. (a) Briefly describe the methods of prevention and control Salmonella gallinarum infection on a breeding chicken farm.

(b) It is very important for a veterinarian to be aware that fish diseases, especially bacterial infections, are understood as an environmental issue closely related to human and animal welfare. Briefly describe the causative agent(s), the natural habitats and ecological aspects of EDWARDZIELLOSIS as an example of such infections. Discuss its importance in relation to public health from an epidemiological point of view. (6 points)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMP 430 I

VETERINARY BACTERIOLOGY AND MYCOLOGY

TIME: 3 HOURS

ANSWER: ALL QUESTIONS

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1. Describe the structure and functional characteristics of replicons of bacteria; and explain horizontal transfer system of bacterial genes.

2. Describe the diagnostic methods for Brucella infection of cattle based on:

   (i) demonstration of the causal organism and
   (ii) serological examinations

3. Write short notes on the following:

   (a) "Strings of Pearls" test

   (b) Streptococcus agalactiae

   (c) Why Mycoplasmas are considered to be bacteria

   (d) Corynebacterium renale

   (e) Laboratory methods for distinguishing Erysipelothrix rhusiopathiae from Listeria monocytogenes.

4. Escherichia coli is one of the major causes of diarrhoea in neonates. Give a brief account of the laboratory identification of this bacteria from faecal samples collected from a scouring calf. How do you distinguish it from other lactose fermenting Enterobacteriaceae.

5. Comment briefly on the following and illustrate with examples where possible.

   (a) cutaneous mycosis
   (b) Aspergillosis
   (c) Mycotoxicoses
   (d) Dimorphic fungi
   (e) Pathogenic yeasts

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

VMD 630

VETERINARY PUBLIC HEALTH

TIME: THREE HOURS

ANSWER: ALL QUESTIONS

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1. Discuss the public health actions to be taken when a meat inspector suspects or confirms anthrax in slaughtering animals in an abattoir. (10 marks)

2. Write HACCP (hazard analysis critical control point) in

   2.1 slaughtering animals/slaughter house operation, and
   2.2 milk collection/milk plant operation. (10 marks)

3. Discuss the preventive measures that will be taken for animal bites and the first aid measures that will be applied for people bitten by animals. (10 marks)

4. Write short notes on the following paired terminology:

   4.1 carrier/resevoir
   4.2 disinfection/disinfestation
   4.3 incidence/prevalence
   4.4 pathogenicity/virulence
   4.5 morbidity rate/mortality rate

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS OCT/NOV 1995

SCHOOL OF LIBRARY STUDIES

1. Introduction to Librarianship ---------- LS 110
2. Organisation of knowledge I ---------- LS 210
3. Collection development Jan/Feb ---------- LS 317
4. Collection development Nov/Dec ---------- LS 317
5. Organization of knowledge II Classification
   ---------- LS 318
6. Bibliography ---------- LS 321
7. Reference Services ---------- LS 416
8. Non-print media librarianship ---------- LS 422
9. Introduction to archives and records management
   ---------- LS 434

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

LS 110

INTRODUCTION TO LIBRARIANSHIP

TIME: THREE HOURS

ANSWER: ANY FOUR QUESTIONS. ALL QUESTIONS CARRY EQUAL WEIGHT.

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1. Critically assess the role information can play in national development in Zambia.

2. Describe some of the significant contributions of the ancient Sumerians, Babylonians and Assyrians to the development of communication and libraries.

3. "Rural information needs are inadequately met by our library and information services in Zambia because the foundations on which these services are developed are alien to the majority of the rural masses" Discuss.

4. Discuss, giving examples, the implications of introducing Information Technology (IT) in libraries and any other information units in Zambia.

5. What issues would you consider when campaigning for the introduction of public library legislation in Zambia?

6. Review the features of the world of information that present problems to users in terms of access. Suggest various information services and products that can alleviate these difficulties.

7. What are library standards? What problems impede the enforcement of library standards in Zambia. Suggest solutions to alleviate them.

8. Write short notes on <u>each</u> of the following:-

(a) FID

(b) IFLA

(c) COMLA

(d) ESARBICA

(e) ARMAZ

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

LS 210

ORGANIZATION OF KNOWLEDGE I - CATALOGUING

TIME: THREE HOURS

ANSWER: SEVEN QUESTIONS. TWO FROM SECTION A AND FIVE FROM SECTION B.

SECTION A

Answer TWO questions only. (30 marks)

1. Discuss the various ways in which users access library material via the catalogue. How has the AACR 2 facilitated this process?

2. Define "corporate authors" and show, giving examples, how different types of corporate bodies are treated in a cataloguing code known to you.

3. Enumerate with examples the use of title entry in cataloguing library materials.

4. Write short notes on any FIVE of the following:

   a) Authority file
   b) Mixed responsibility
   c) Shared responsibility
   d) Open entry
   e) CIP
   f) Cartographic material
   g) References

SECTION B

Catalogue fully any FIVE of the following publications. Give Subject Headings using the Sears List. Indicate the edition used. (70 marks)

5. Reaction to/colonialism/A prelude to the politics of/ independence in northern Zambia/1839-1939/by/Henry S. Meebelo/ Published for/The Institute for African Studies/University of Zambia/by/Manchester University Press/1971
v.t.p. (c) 1971 University of Zambia. Published at the University of Manchester at the University Press, 316-324 Oxford Road, Manchester M13 9NR
Book has seventeen pages roman numbered and 304 pages arabic numbered. There is a map facing title page. Bibliography is from page 288 to page 301. Has index. Size 21.5cm.

6. Handbook on/Animal diseases/in the tropics/Fourth edition/ Edited by/M.M.H. Sewell/D.W. Brocklesby/ELBS with Bailliere Tindall on behalf of the BVA/
v.t.p. First published by the British Veterinary Association 1962. fourth edition published by Bailliere Tindall on behalf of the British Veterinary Association 1970. ELBS edition first published 1992.
Book has twelve pages roman numbered and 385 pages arabic numbered. Has index. Size 22.5cm.

Cataloguing note: ELBS = English Language Book Society
BVA = British Veterinary Association

7. Child care and the/growth of love/second edition/based by permission of the/World Health Organisation/on the report/ Maternal care and mental health/by/John Bowlby/abridged and edited by/Margery Fry/with two new chapters by/Mary D. Salter Ainsworth/Penguin Books/
v.t.p. Penguin Books Ltd.,Harmondsworth, Middlesex, England. Published in Pelican Books 1953. Second edition 1965. Reprinted 1966.
Book has 254 pages arabic numbered. Size 18cm.
Cataloguing note: Book deals with maternal love in the life of children and effects of maternal deprivation.

8. Soybean/in tropical and subtropical/cropping systems/ Proceedings of a symposium/Tsukuba, Japan/26 September - 1 October 1983/Edited by S. Shanmugasundaram, E.W. Sulzberger/ 1985/The Asian Vegetable Research and Development Center/ Shanhua, Taiwan, China/
Book has seventeen pages roman numbered and 471 pages arabic numbered. There are illustrations and tables. Has a bibliography and index. Size 26cm.

9. Report/of the first/National Workshop/on Traditional Medicine and its Role/in the Development of Primary Health Care/in Zambia/Mulungushi Hall 9-13 May 1977/Sponsored by/Ministry of Health/UNICEF/WHO/Printed by the Government Printer Lusaka/ 1979
Document has three pages roman numbered and 57 pages arabic numbered.Size 30cm.

10. Republic of Zambia/Report/of the/Commission of Inquiry/ Appointed to Inquire into the Affairs/of the University of Zambia/1986/Printed by the Government Printer Lusaka/
Document has five pages roman numbered and 133 pages arabic numbered. Size 28.5cm.

11. The/Reader's/Bible/being the authorised version of the/Holy Bible/containing the/Old and New Testaments/and the Apocrypha/ translated out of the/original tongues/Designed for/general reading/London/Oxford University Press/Cambridge University Press/Eyre and Spottiswoode/1951/
Book has 47 pages roman numbered and 1267 pages arabic numbered. map. Size 25cm.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY DEFERRED EXAMINATIONS - JANUARY/FEBRUARY 1995

LS 317

COLLECTION DEVELOPMENT

TIME: THREE HOURS

ANSWER:

FOUR QUESTIONS: QUESTION ONE (COMPULSORY) FROM SECTION A AND THREE QUESTIONS FROM SECTION B.

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SECTION A (COMPULSORY) 40%

1. Write short notes on any ten of the following:

   (a) Approval plans
   (b) Encumbering
   (c) Publishers
   (d) Censorship
   (e) Jobbers
   (f) Key informant
   (g) CBI
   (h) Exchanges
   (i) Copyright
   (j) Social indicators
   (k) Ulrich's International Periodicals Directory
   (l) "Purging".

SECTION B 60%

ANSWER ANY THREE QUESTIONS FROM THIS SECTION

2. How does "information explosion" affect collection development in libraries and information centres?

3. What role do trade catalogues play in the collection development process?

4. "Gifts and exchanges supplement a library's acquisition efforts." Discuss the problems associated with these methods of acquiring materials and suggest ways of overcoming them.

5. What problems does the collection of non-print media present to libraries, particularly those in developing countries?

6. "Collection weeding is an integral part of the collection development process". Discuss.

7. Discuss the role of acquisition work in collection development.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

LS 317

COLLECTION DEVELOPMENT

TIME: THREE HOURS

ANSWER: QUESTION 1 AND ANY THREE QUESTIONS FROM SECTION B

SECTION A (COMPULSORY) (40%)

1. Briefly ~~describe~~ discuss any EIGHT of the following:

   a). speciality publishers

   b). vendors

   c). vanity publishers

   d). information explosion

   e). censorship

   f). CBI

   g). retrospective collection development

   h). library cooperation

   i). till forbidden

   j). restricted funds

   k). WBIP

SECTION B (60%)

ANSWER ANY THREE QUESTIONS FROM THIS SECTION

2. Compare and contrast the selection procedures in university and special libraries.

3. Using examples, explain the shortcoming of the following:

   a) recommended lists, core collections and best sellers and
   b) subject lists.

4. Outline and discuss the SIX general principles of collection development.

5. Discuss the factors that necessitate collection development in libraries.

6. What role do trade catalogues play in the collection development process?

7. What problems do libraries, particularly those in developing countries, face in collection development?

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY MID-YEAR EXAMINATIONS - JUNE 1995

LS 318

ORGANIZATION OF KNOWLEDGE II - CLASSIFICATION

TIME: THREE HOURS

ANSWER: FOUR questions. TWO from Section ONE and TWO from Section TWO.

SECTION ONE

ANSWER TWO QUESTIONS

1. 'Classification provides a system for organizing a universe of items, be they objects, concepts, or records'. Comment.

2. Discuss the factors that have made the Dewey Decimal Classification 'the most widely used library classification system in the world'.

3. Compare and contrast the Dewey Decimal Classification and the Library of Congress Classification schemes.

4. Write short notes on any FIVE of the following:

   a) Citation order
   b) Auxiliary tables in the Dewey Decimal Classification
   c) Standard subdivisions
   d) Hierarchy
   e) PMEST
   f) Add note
   g) Call number
   h) Centered entry

SECTION TWO

ANSWER TWO QUESTIONS.
N.B. Each question includes FIVE titles.

Allocate Class Numbers and Subject Headings to the following titles using Dewey Decimal Classification and Sears List of Subject Headings indicating the edition used in each case. Give only ONE class number unless you consider that additional class numbers are needed.

5. a) Blough, G. Orlando.Elementary school science and how to teach it.1970.
   b) Futrell, Charles. Fundamentals of selling.1990.
   c) Pearce,David W.Economics of natural resources and the environment.1990.
      (Note: Deals with economic aspects of environment.)
   d) Willis,Jane. Teaching English through English: a course in classroom language and techniques.1984.
   e) Vallentin,Antonina.Leonardo da Vinci:paintings and drawings.
      (Note: Deals with works of the 16th century Italian painter)

6. a) Mende,Tibor.From aid to re-colonization:lessons of a failure.1973.
      (Note:Discusses foreign aid to developing countries)
   b) Bhasker,K.N.Information technology management.1990.
      (Note: Deals with management accounting and application of computer systems.)
   c) Willock,Colin. Look at African wild life.1970.
   d) U.S. on the Moon: what it means to us.1969.
      (Note: Discusses landing of U.S. astronauts on the Moon)
   e) Uglow,Jennifer. The Macmillan dictionary of women's biography.1984.

7. a) New perspectives of North-South dialogue: essays in honour of Olof Palme.1988.
      (Note: Discusses economic relations of developed countries with developing countries).
   b) Etherton,Michael. The development of African drama.1982.
   c) Ali,Salim. Handbook of the birds of India and Pakistan together with those of Nepal, Sikkim, Bhutan and Ceylon.1969.
   d) Reys,Robert E. Helping children learn mathematics.1992.
      (Note:Deals with teaching of elementary mathematics.)
   e) Westwood,Peter J. David Livingstone:his life and work.1986.
      (Note: About the 19th century Scottish missionary and explorer in Africa)

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY MID-YEAR EXAMINATIONS - JUNE 1995

LS 321

BIBLIOGRAPHY

TIME: THREE HOURS

ANSWER: FOR QUESTIONS. ALL QUESTIONS ARE OF EQUAL WEIGHT.

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1. Discuss the importance of grey literature in Africa.

2. What functions does an editor undertake as a mediator between authors, designers and producers of books and non-print media?

3. Briefly discuss the stages of database design for a subject of your choice.

4. How do indexes and abstracts enhance the value of databases and other lists of information materials?

5. What are the various ways of bibliographic arrangement? Discuss the advantages and disadvantages of each one of them.

6. "A national bibliography is a list of records about a given country including those which present some aspect of national life." Discuss.

7. Briefly discuss the legal instruments which should be in place in order to have an effective national bibliographic control.

8. Assume you are a documentalist at the National Council for Scientific Research in Zambia. What steps would you take to inform researchers in food legumes about research reports in Southern Africa?

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

LS 416

REFERENCE SERVICE

TIME: THREE HOURS

ANSWER: FOUR QUESTIONS. ALL QUESTIONS ARE OF EQUAL WEIGHT

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1. "In a perfect library there is no need for reference services." Discuss.

2. Assume you are the University of Zambia Librarian. What areas of the current information services would you seek to change? Why would you change them?

3. What cooperation, if any, should there be between the Collection development and the reference departments? Give reasons for your answer.

4. What criteria would you employ to evaluate language dictionaries?

5. What sources would you give someone who would like to tour Zambia? What are your reasons for choosing those sources?

6. Discuss the various types and levels of encyclopedia.

7. a) What is the importance of reference interview?

   b) What are the differences in use between open and closed reference questions?

8. "Information users often do not know what they want." Discuss.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY MID-YEAR EXAMINATIONS - JUNE 1995

LS 422

NON-PRINT MEDIA LIBRARIANSHIP

TIME: THREE HOURS

ANSWER: FOUR QUESTIONS. ALL QUESTIONS ARE OF EQUAL WEIGHT

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1. Discuss, giving examples, the effectiveness of non-print media in providing information to the public.

2. What factors would you consider in building up a collection of non-book material in your library?

3. In what ways does the cataloguing of non-book materials differ from that of books? Give examples.

4. Under what circumstances can the different types of A-V material and equipment be effectively used in a developing country?

5. Discuss the problems of copyright that have been brought about by technological advancement.

6. Enumerate the different formats of microform and discuss the advantages and disadvantages in using them.

7. What are the problems of storage and preservation of non-print material in a tropical or sub-tropical environment? Suggest ways to overcome them.

8. Write short notes on any FIVE of the following:

   a) Filmstrip
   b) Camcorder
   c) Transparency
   d) Compact Disc
   e) Kit
   f) Diorama
   g) Models
   h) VHS

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

UNIVERSITY EXAMINATIONS - OCTOBER/NOVEMBER 1995

LS 434

INTRODUCTION TO ARCHIVES AND RECORDS MANAGEMENT

TIME: THREE HOURS

ANSWER: QUESTION 1 AND ANY THREE QUESTIONS FROM SECTION B

SECTION A (COMPULSORY) (40%)

1. Briefly describe any EIGHT of the following (short notes):

   a). registry

   b). vital records

   c). commentarii ~~principles~~ principii

   d). appraisal

   e). the Metroon

   f). finding aids

   g). provenance

   h). an information cycle

   i). transfer list

SECTION B (60%)

ANSWER ANY THREE QUESTIONS FROM THIS SECTION

2. Discuss the relationship between a records retention schedule and the records inventory.

3. Compare and contrast the functions of a national library and a national archives.

4. Discuss in detail the life cycle of a record.

5. "There are fundamental differences between archives and libraries". Discuss.

6. In what way is the French Revolution significant in the development of archives?

7. Discuss the tangible and intagible elements in the definition of archives.

8. In what ways is information technology affecting records management and archives?

END OF EXAMINATION