FACULTY	**Health Sciences and Veterinary Medicine**		
DEPARTMENT	**School of Veterinary Medicine**		
SUBJECT	**Veterinary Paraclinical Studies**		
SUBJECT CODE	**V3883FY**		
DATE	**November 2024**		
DURATION	**3 Hours**	**Marks**	**150**

Examiners: Drs D Mudimba, Y Hemberger, F Chitate & R Hassel

Internal Moderator: Dr A Samkange

External Moderator: Prof B Penzhorn

This question paper consists of 8 pages, including this front page.

Instructions

Attempt ALL questions!!

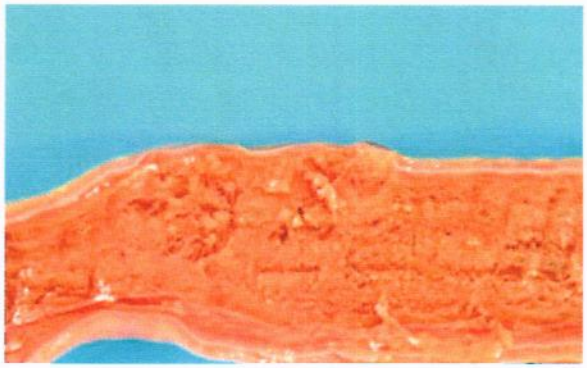
You may use a calculator, but you must show all calculation steps

Examination

Question 1. **[13]**

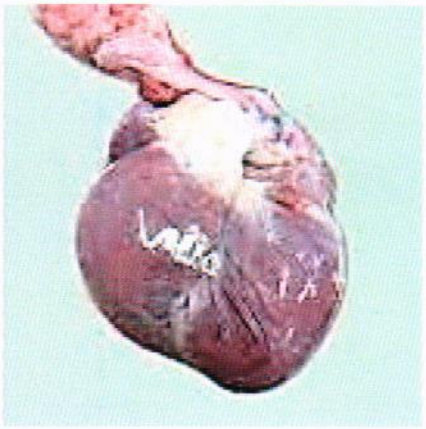
As a veterinarian at a private practice in Windhoek, you were treating an unvaccinated 3-month-old Boerboel puppy that was presented with a short history of vomiting and diarrhoea. The puppy died after attempts to rehydrate and treat. A post-mortem examination was done and the following pictures were taken. Examine the pictures carefully and answer the following questions.











a) Describe the lesions in the pictures. [3]

b) What is the morphological diagnosis? [1]

c) What is the most likely aetiological diagnosis? [1]

d) Describe the pathogenesis for the heart lesions. [1]

e) Describe the sequelae of the disease above. [4]

f) List the samples that should be taken and laboratory procedures required to confirm a diagnosis of this disease. [6 x ½ = 3]

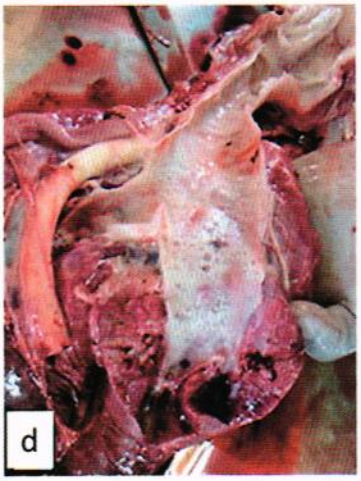
Question 2. **[13]**

As a State Veterinarian, you are alerted to an acute disease outbreak in pigs with a high mortality rate on a farm in the Windhoek district. A post-mortem examination is conducted on one of the affected carcasses and the following lesions are found (shown in pictures below).

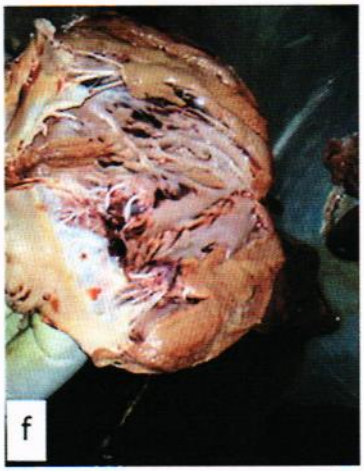












a) Describe the gross lesions in the pictures. [6]

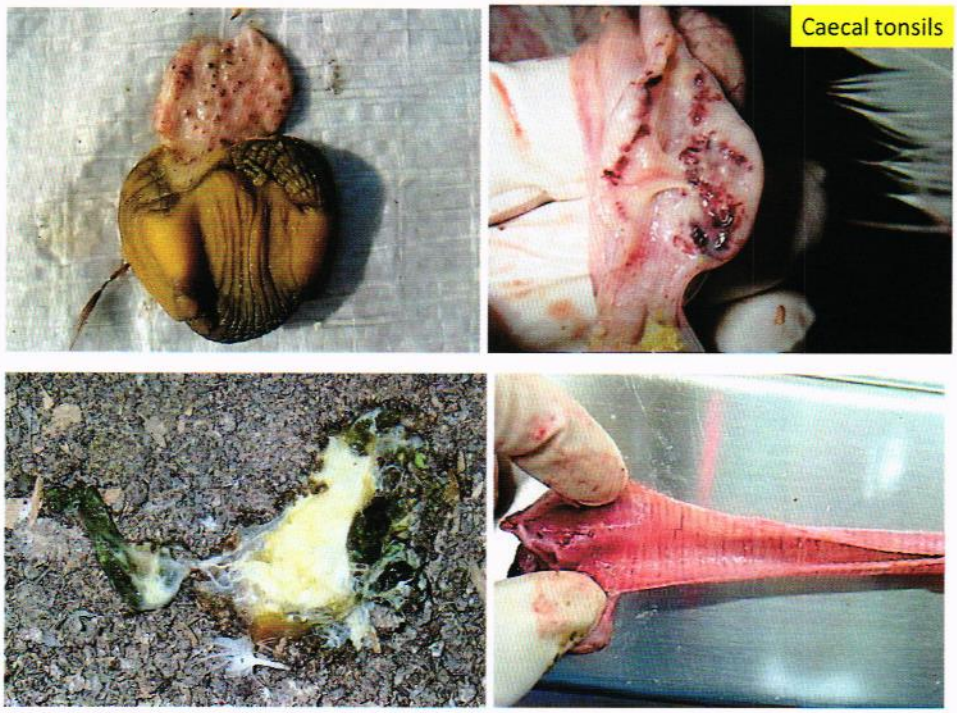
b) What is the mostly likely aetiological diagnosis? [1]

c) What samples should be collected to confirm the diagnosis? Mention the test required. [4]

d) What should you recommend to the farmer? [2]

Question 3. **[15]**

As a State Veterinarian in the north of Namibia you receive a report of a disease outbreak in chickens. You rush to one of the affected farms and learn that the farmer lost over 50% of his chickens in less than one week. You conduct post-mortem examinations on a few carcasses and find the following lesions (shown in pictures below).



a) Describe the gross lesions seen. [4]

b) What is the most likely aetiological diagnosis? [1]

c) Name the etiological agent. [1]

d) Name any three forms of the disease. [3]

e) Describe the clinical signs you would see in this disease. [4]

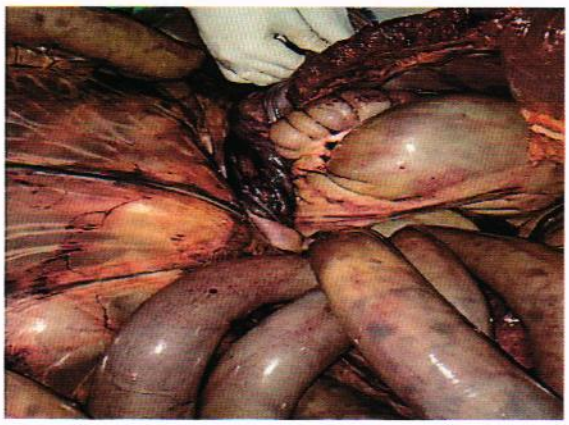
f) Name any two control measures you should recommend. [2]

Question 4. **[9]**

As a private practice veterinarian in Grootfontein, Namibia, you are called to a farm to examine a 3-year-old horse with a one-day history of flank-watching and biting, pawing, and trying to roll. On physical examination you notice absence of gut sounds or bowel movements and a heart rate of 110 beats per minute; toxic mucous membranes. The horse collapsed during the examination and you decide to euthanise the horse. Post-mortem examination reveals the following findings (shown in pictures below). Evaluate the case carefully and answer the following questions.









a) Describe the gross findings in the pictures. [4]

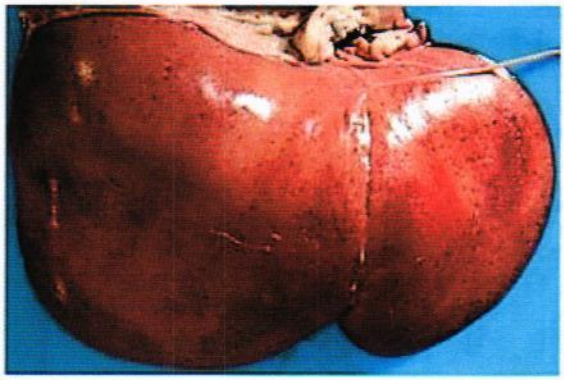
b) What is the most likely diagnosis? [1]

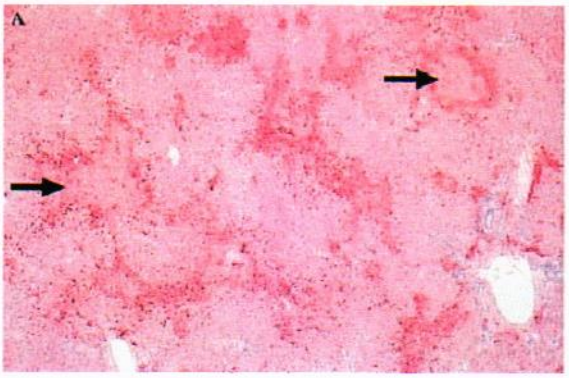
c) List four possible morphological sequelae of this condition. [4]

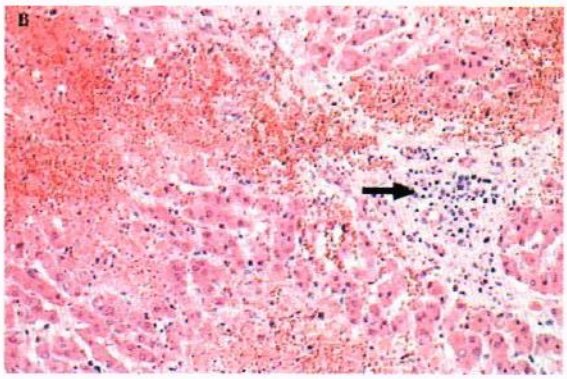
Question 5. **[10]**

As a State Veterinarian in Keetmanshoop, Namibia, you are called to attend to a farm where the owner has reported a disease outbreak in sheep. The disease is characterized by abortions and neonatal mortality. You conduct a post-mortem examination on a carcass and observe the following lesions in the liver (shown in pictures below). Histopathology of the liver samples is also done. Examine the pictures carefully and answer the following questions.









a) Describe the gross lesions. [3]

b) Describe the histopathological lesions seen. [2]

c) What characteristic lesions will you look for on histopathology? [1]

d) What is the most likely aetiological diagnosis? [1]

e) Why is the disease of significant public health importance? [1]

f) What samples will you collect for laboratory confirmation of the diagnosis? [2]

Question 6. **[9]**

A delegation of international WOAH inspectors is visiting an export abattoir south of the Veterinary Cordon Fence. They would like to know which practical measures are taken to ensure that the food chain requirements for "inactivation" of the Foot and Mouth Disease virus, as stipulated in WOAH commodity-based trade (CBT) procedures, are in place before cattle and small-stock carcasses are deboned. Briefly explain the practical measures as requested [9].

Question 7. **[26]**

At an export abattoir: During post-mortem meat inspection of bovine carcases including organs, the following conditions were found on muscle tissue as shown in Figure 2a and Figure 2b.



Figure 2a

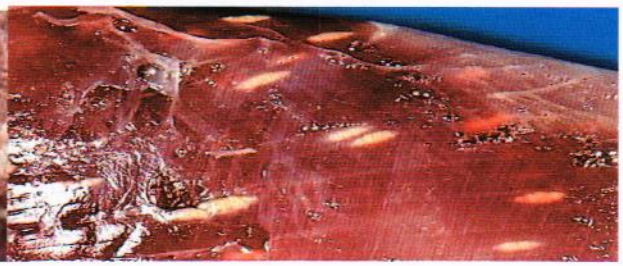


Figure 2b

a) Identify the two most likely parasites in Figure 2a and Figure 2b. Give reasons to support your diagnosis. [4]

b) List the predilection sites for the above parasites. [5]

c) What tests can be done for laboratory confirmation of the conditions? [2]

d) Describe the treatment regimen for the affected carcass and organs, which passed the inspection conditionally to ensure the meat is fit for human consumption. [8]

e) What advice should you give to the owner of the affected carcases as regards disease control? [6]

f) What collaboration would you consider with respect to disease prevention and control? [1]

Question 8. **[15]**

A dairy farmer in Gobabis consults you because he has problems with reduced milk production in his dairy cows and high somatic cell counts (SCC) in the milk. Upon examining the dairy herd, you find that the cattle appear healthy and in good condition. Heat stress is one factor that can affect the somatic cell count (SCC) of a dairy herd, especially in Namibia.

a) Briefly explain how heat stress affects the herd, milk production, and SCC. [6]

b) Discuss other factors which can cause high SCC in dairy cattle. [9]

Question 9. **[27]**

A veterinary district of Namibia has reported an increasing number of cases of canine rabies. In June 2024, the district had an average dog population of 2600 and reported a total of 6 cases of rabies during that month. During the same period two cases of human rabies were confirmed from a population of 15000 inhabitants.

a) Calculate the prevalence of canine rabies in June 2024. [1]

b) Calculate the prevalence of human rabies in June 2024. [1]

As the state veterinarian responsible for the district you have been requested by the Chief Veterinary Officer to carry out an epidemiological investigation of canine rabies in your district after receiving reports of suspected cases of the disease.

c) Describe a probable case definition for canine rabies. [5]

d) Describe a confirmed case definition for canine rabies. [2]

e) Describe the field headings of a case register to collect epidemiological data during the outbreak investigation. [8]

f) What analysis will you consider after collecting epidemiological data? [5]

g) Describe the control measures you should implement to control the disease in the district. [5]

Question 10. **[13]**

A large adult crossbred dog from a farm is presented at a private veterinary practice with the owner complaint of listlessness, hindquarter ataxia and mild hypersalivation, that started about four days previously. These symptoms are evident on presentation. During the history-taking it transpires that the dog had never received a vaccination of any kind. Subsequently, when trying to handle the dog, one of the staff members of the practice is bitten on the hand, resulting in deep puncture wounds.

Taking the provisions of the Animal Health Act 1 of 2011 as well as the Veterinary and Veterinary Para-professions Act 1 of 2013 into consideration, discuss how this situation should be managed and the case handled by the veterinarian(s). Give reasons for your answers with respect to the most likely diagnosis.

End of Paper