FACULTY	**Health Sciences and Veterinary Medicine**		
DEPARTMENT	**School of Veterinary Medicine**		
SUBJECT	**Production Animal Clinical Studies IV**		
SUBJECT CODE	**V3872PA**		
DATE	**November 2024**		
DURATION	**3 hours**	**MARKS**	**150**

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This question paper consists of 9 pages, including this front page.

Instructions

Read the questions carefully
Answer ALL questions
Write clearly and concisely

First Opportunity Examination

SECTION A

[75 marks]

1	In mid-spring, you are presented with a 4-year-old ewe showing seizure activity (Fig 1 below). The sheep has drooping of the left ear and lowered left upper eyelid (ptosis). The sheep appeared normal last evening. There is lack of menace response in the left eye and a flaccid left cheek.  Fig 1 a.What conditions would you consider? (Most likely first.) [4] b.What laboratory tests could be undertaken to confirm your provisional diagnosis? [4] c.What treatments would you administer for your provisional diagnosis? [4]	12
2	An 8-month-old ram lamb presents with 1 month's history of unilateral scrotal swelling and stiff gait. There is loss of wool on the affected side of the scrotum as shown in Fig 2. No other abnormalities are noted on clinical examination and there are no abortions in ewes reported so far.  Fig 2	8

	a. From this clinical presentation, what is your tentative diagnosis? [1] b. What four causative agents would you consider (most likely first)? [2] c. What control measures could be introduced on this stud farm in response to your tentative diagnosis? [5]	
3	A two-crop ewe at pasture with month-old twin lambs at foot is found isolated from the remainder of the flock. The ewe appears very stiff and drags the left hindleg. The ewe is profoundly depressed with toxic mucous membranes. The rectal temperature is 40.6°C (105.1°F)) and the pulse is 120 beats per minute. The respiratory rate is 45 breaths per minute. There are no ruminal sounds. Examination of the udder reveals extensive swelling and discoloration of the left gland with subcutaneous oedema extending along the ventral abdominal wall to the brisket as shown in the picture below in Fig 3 :  Fig 3 a. What is your tentative diagnosis [1] b. What pathogens could be involved? [2] c. What is the prognosis? [2] d. What would you recommend and why? [4] e. What control measures could be adopted [6]	15
4	An outbreak occurred on a farm in Mariental. The farmer had bought about 150 (Merino-type) ewes from a farmer in another district between 6 and 15 months prior to the outbreak. On enquiry, that farmer reported that he had never experienced any similar cases or outbreaks. The current owner, however, believed that a single case had occurred the previous year in his own flock. The sheep were sent out to graze on *Eragrostis curvula* hay stubble during the day. Within some of the windrows not completely harvested during baling, a number of thistle plants	8

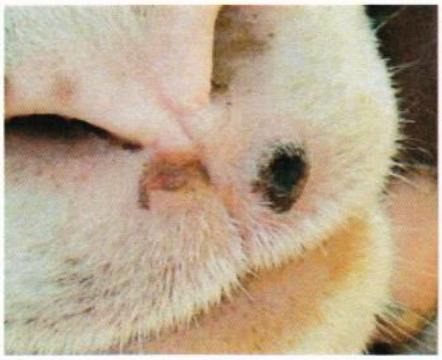
	were observed which, together with a few weeds, comprised the only green plants available at that time of year. At night the sheep were housed in close confinement as a precaution against theft. Here they were given access to commercial sheep pellets in feed troughs, as well as a block lick and hay bales. Normal vaccinations and anthelmintic treatments had been given but not immediately prior to the outbreak. The outbreak was reported to the State Veterinary Office in May for further investigation. All 147 sheep present on the farm were examined for skin lesions on the wool free areas of the face, udder, legs and perineum. Photographs were taken and are shown below in Figs 4a, 4b, 4c.  Fig 4a  Fig 4b   Fig 4c a. From the history and clinical presentation presented above, what are your differential diagnosis? [4] b. What are your recommendations to this farmer? [4]	
5	Halfway through lambing time a sheep client complains of high morbidity and mortality in 24–36-hr old lambs showing excess salivation with a wet lower jaw, cold mouth and poor suck reflex, and retained meconium See Fig 7 below.	10

	 Fig 5a  Fig 5b There is progressive abdominal distension with fluid and gas. The rectal temperature is subnormal. There is dehydration, poor peripheral perfusion with cold extremities, and a rapid weak pulse during the agonal stages. a. What conditions would you consider? [4] b. What treatments would you recommend? [3] c. What control measures would you instigate? [3]	
6	A flock of 50 sheep on a farm in Otavi district has shown a rapid decline in health over the past few weeks. The farm has experienced a period of heavy rainfall, leading to lush grass growth. The farmer reports that many sheep, especially the younger ones, show signs of fatigue, significant weight loss, and pale gums. A few animals have been found dead without prior signs of severe illness, and upon opening the carcass, masses of worms were seen in the abomasal contents (See fig 6 below) During a physical examination, you note the following: • Severe anemia in the affected sheep. • Bottle jaw (submandibular edema) in some of the animals. • The farmer reports that the sheep were never dewormed this year.  Fig 6	12

	a. Based on the clinical signs and the environment described, list the possible differential diagnosis (most likely on top) and why it is on your list. [4]	
	b.What are the primary factors contributing to the prevalence of your most likely diagnosis (tentative diagnosis) in small ruminants, particularly in tropical and subtropical regions [4]	
	What alternative strategies are being explored for the control of your tentative diagnosis beyond traditional anthelmintics [4]	
7	A small-scale livestock farmer in Onankali village, Oshikoto region, reports unusual behaviour in a few of their goats. One perfectly healthy goat suddenly began showing signs of restlessness and agitation. Over the next few days, the goat became increasingly aggressive, biting other animals and inanimate objects (see fig 7 below). The farmer observed that the goat had difficulty swallowing and was producing excessive saliva. A few days later, the goat died. Subsequently, another goat began showing similar symptoms.  Fig 7	10
	a.Based on the symptoms and history provided, list potential causes of the neurological signs observed in the goats and give reasons for each differential chosen. (Most likely first) [4]	

	b. Considering the global effort to control and eliminate this disease, discuss the challenges [3] and strategies involved [3] in prevention and control in humans, livestock, and wildlife populations.	

SECTION B

[75 marks]

1. A feedlot owner, located 30 km from Windhoek, seeks your expertise regarding a batch of 80 cattle, aged 10-12 months, recently acquired from an auction. Nearly 40 of these animals have become sick, with five having died in the past two days, and another is currently moribund. You decide to conduct a necropsy on the moribund animal as part of your investigation. The post-mortem examination reveals exudative fibrinous pneumonia localised to the cranioventral lobes of the lungs. The affected lung tissue is firm, dark red to purple, and exhibits fibrinous pleuritis. On the cut section, the lungs have a distinctive 'marbled' appearance, with areas showing various stages of red and grey hepatization. Histopathological analysis of the pneumonic lung tissue indicates coagulative necrosis. These findings lead you to suspect one pathogen as the cause.

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

   b) What is the most common pathogen associated with this disease? [1]

   c) Give one most important differential diagnosis. [1]

   d) How would you confirm your diagnosis? [2]

   e) What advice would you give to this feedlot owner? [15]

2. As the state veterinarian in Namibia's northern communal areas (NCA), you are confronted with a severe outbreak of contagious bovine pleuropneumonia (CBPP), resulting in high mortality rates and public alarm. The regional governors have tasked you with devising a comprehensive plan for permanently eradicating this disease. Give a detailed outline of your proposed presentation, including a brief description of the disease, and the strategies and actions required to achieve CBPP eradication in the NCA. [20]

3. You are a state veterinarian in Khomas region and a cow is presented to you for necropsy. The pictures below (Fig. 1.1 & Fig. 1.2) depict some of your post-mortem findings. Upon further enquiries the farmer informs you that he had lost a another cow the previous month and saw similar lesions.



Fig. 1.1



Fig. 1.2

a) Give six differential diagnoses. [4]
b) What is the most likely diagnosis? [1]
c) What samples would you collect, and what tests would you request to confirm your diagnosis? [4]
d) You decide to test the remaining animals at the farm of origin, which test would you choose? Justify your answer. [3]
e) In the interpretation of your results from question (d), what are your considerations? [4]
f) Suppose two cattle out of a herd of 100 test positive with your test, what steps would you take? [4]

4. You are presented with a chronically sick dairy cow at Neudamm farm. Upon clinical examination, you observe the following clinical signs: submandibular and brisket oedema, positive jugular pulse and distension, muffled heart sounds, an arched back, and the cow was in poor body condition.

a) What is the most likely diagnosis? [2]
b) What diagnostic tests can you perform to confirm your diagnosis? What results do you expect with each test? [8]
c) What would you advise the owner? [5]