FACULTY	**Health Sciences and Veterinary Medicine**		
DEPARTMENT	**School of Veterinary Medicine**		
SUBJECT	**Production Animal Clinical Studies IV**		
SUBJECT CODE	**V3831PP**		
DATE	**June 2023**		
DURATION	**3 hours**	**MARKS**	**150**

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This paper consists of ten (10) pages, including this front page.

Instructions

Read the questions carefully
Answer ALL questions
Write clearly and concisely
Pay attention to the questions, where asked to explain or discuss listing of keywords is not adequate

First Opportunity Examination

SECTION A

QUESTION 1:



1a



1b

Compare the clinical signs of these two animals and give **two** differential diagnoses **for each one** with reasons. (8)

QUESTION 2:

Which of the following statements are **false**? (2)

Listeria monocytogenes.....

a) ..... is a Gram-negative bacteria
b) ..... is a rod-shaped bacteria
c) ..... is withstands low temperature pasteurization of milk
d) ..... is killed by freezing
e) ..... may be excreted in faeces and milk of healthy animals when stressed
f) ..... is an intracellular organism.
g) ..... may cause meningo-encephalitis,
h) .....may cause abortion
i) ..... may cause septicaemia
j) ..... may cause impaired respiration.
k) ..... may cause paralysis of one limb in adult ruminants.

QUESTION 3:

Which of the following statements are **false** concerning ***Ehrlichia ruminantium?*** (3)

a) Is transmitted by *Amblyomma variegatum*
b) Is transmitted by ***Amblyomma hebraeum***
c) Is transmitted by ***Hyalomma truncatum***
d) ***Ehrlichia ruminantium*** is an obligate **intracellular** parasite.
e) ***Ehrlichia ruminantium*** is a facultative **intracellular** parasite.
f) *Ehrlichia ruminantium* is transmitted by a three-host tick. It becomes infected during either the larval or nymphal stage and transmits the infection during one of the subsequent stages (transstadial transmission).
g) In the ticks transmitting ***Ehrlichia ruminantium*** to cattle there is no epidemiologically significant trans-ovarial transmission.
h) ***Ehrlichia ruminantium*** can be found in endothelial cells of blood vessels.
i) **The blood vessel endothelium** becomes more **permeable** without recognizable histopathologic recognizable change.
j) You should collect a serum sample for an **ELISA test** to confirm heartwater.
k) **Congestion and/or oedema of the abomasal folds** are regular findings in cattle that died due to heartwater.

QUESTION 4:

Which of the following statements are **false**? (2)

a) Viruses that cause typical clinical signs and pathology in adult cattle will also cause specific pathology in the developing calf in utero.
b) Most teratogenic viruses have a **tropism for the developing central nervous system** and this is especially true for several of the **attenuated** viruses.
c) The strongly hepatotropic wild-type Rift Valley fever (RVF) and Wesselsbron (WSL) viruses **lose this tropism for the liver** and **become neurotropic** following intracerebral passage in suckling mice during vaccine production.
d) Brain tissue from a calf born full-term with brain teratology is a good sample for virus isolation.
e) In the case of suspected bovine viral diarrhoea – mucosal disease (BVD-MD) **placentomes** and **foetal fluids** are suitable samples for virus isolation.

QUESTION 5:

Which statement is true concerning **radial nerve paralysis?** (1)

a) Trauma to nerve occurs where it crosses over the lateral aspect of radius.
b) Trauma to nerve occurs where it crosses over the lateral aspect of ulna.
c) Trauma to nerve occurs where it crosses over the lateral aspect of humerus.
d) Trauma to nerve occurs where it crosses over the lateral aspect of scapula.
e) Trauma to nerve occurs where it crosses over the olecranon.

QUESTION 6:

What is the meaning of **ptosis?** (1)

QUESTION 7:

Your client bought a bull on the auction. He transported it with his one-ton pickup. Unfortunately, he drove too fast around a turn on the dust road and the car overturned lying on its side.

Now the bull is behaving strangely: when he is not circling to the right, he is pushing his head against the fence. On clinical examination you realize that the bull is blind on his left eye. But the pupil reflex is still present.

a) Where do you expect a lesion in this bull? (2)
b) What is the reason for your diagnosis? (6)

QUESTION 8:

a) What are reasons for thiamine deficiency? (3)
b) What condition will result from thiamine deficiency? (1)
c) Give three other causes for the same condition. (3)

QUESTION 9:

You are doing a post-mortem on a young ox that died with nervous signs in a feedlot.

You find the following brain lesions: three reddish-brown foci in the grey matter of the cerebrum (about 15 to 25 mm diameter) and one in the white matter (20 mm diameter).

a) What is the most likely diagnosis? (1)
b) You take samples for histology. What type of lesions would confirm your diagnosis? (6)

QUESTION 10:

Under what circumstances do you expect urea poisoning? (4)

QUESTION 11:

You are doing a clinical examination of a lame cow. After getting the history of the case you do a visual assessment of the limbs. What are you looking for? (6)

QUESTION 12:

a) In which group of cattle is the diagnosis "**vertebral spondylosis**" most common? (2)
b) What are the clinical signs? (3)
c) What is "**ankylosing spondylosis**"? (3)

QUESTION 13:

In the rainy season you are called to a herd with many cases of infectious conditions of the bovine digit. How will you treat and control interdigital phlegmon? (9)

QUESTION 14:

Compare coma, depression and stupor. (6)

QUESTION 15:

Mention three scenarios how cattle can contract botulism. (3)

SECTION B

1	A farmer from Kabbe constituency in Zambezi Region came in at the State Veterinary Office with a complaint of several cattle in his village having nodular eruptions on the skin. Upon visiting this village, a thorough physical examination revealed that some animals had rectal body temperature ranging from 40 °C-41°C and flare-up of small to large sized circumscribed nodules which are firm, round and raised on different body parts as shown in the pictures below. Few cattle had lameness with swelling of both prescapular and prefemoral lymph nodes.  Fig 1a  Fig 1b a. What is your tentative diagnosis based on this clinical picture? [1] b. Explain why there would be more outbreaks of this disease in this region compared to other regions in the country [3] c. Discuss the economic importance of your tentative diagnosis [8]	12

2	You come across an article from a local newspaper reporting on an outbreak in the Northern Communal Areas (NCA) of Namibia in February 2023. The report states that this disease had made a comeback since being eradicated for 29 years in the Ohangwena Region, making its appearance in the Oshikango, Ondobe and Okongo Constituencies. The pictures posted are shown below in Fig 2a-d.  Fig 2a  Fig 2b  Fig 2c  Fig 2d a. What is your tentative diagnosis based on this clinical picture? [1] b. Why are the outbreaks common in summer? [2] c. As a government official based in this region, discuss your treatment approach. [7]	10

3	The cow presented below weighed around 200kg with a body condition score of 3.5 and was managed extensively. This farm was visited sometime in April 2021 for a routine deworming session. There were 23 other cattle that were also raised extensively. As for this particular case it was an incidental finding. Upon physical examination, the cow appeared alert and responsive; her pulse, respiratory rate and temperature were all within the normal range. The mucous membrane was moist and pink, and there was no enlargement involving the lymph nodes. On the integumentary system, there was the presence these multiple, circular, around 1-2cm in diameter localized lesions on the ventral side to the mandible and on the chin (Fig. 3a and 3b).	15



Fig 3a



Fig 3b

a. What is your most likely tentative diagnosis? [1]
b. What further tests can be done to confirm your diagnosis? [4]
c. Discuss your treatment options available [7] and client education on this case. [3]

4	You have been called by a farmer with most of his dairy cows having excessive tearing from the eyes which are looking red. He has observed reduced feeding time and the cows spend most of their time in shade. Upon clinical examination, you have picked up the following presentations as shown below (Fig 4a and 4b). In addition to this, you observe that the milking parlor is not clean, with lots of flies around.  Fig4a  Fig 4b a. What conditions would you consider? (Most likely first.) [4] b. What control measures would you recommend to this farmer to prevent such a problem in the future? [8]	12
5	A 9-month-old (340 kg) Holstein bull, which has been dull and inappetant for the past 2 days, presents with a large swelling of the ventral abdomen which extends from the scrotum to the prepuce (Fig 5a). The bull often adopts a wide stance with the hindlimbs placed further back than normal. There is frequent bruxism (teeth grinding). The rectal temperature is 38.5°C .The bull stands with the tail head raised and shows frequent tail swishing but only a few drops of urine rather than a continous flow are voided. The drops of urine are slightly blood-tinged. There are numerous calculi on the preputial hairs. The swelling of the ventral abdominal wall pits under pressure.  Fig 5a a. What conditions would you consider? [5] b. What further clinical examinations should be undertaken? [2] c. What control measures could be adopted? [5]	12

6	Discuss the veterinary importance of *Chrysomyia bezziana* and give 3 other ticks that predispose to *Chrysomyia bezzian* [5]	5
7	Few animals in the herd have presented with skin lesions confined to the non-pigmented areas as shown in the pictures below in Figs 7a, 7b and 7c. The affected skin is dry and raised at the periphery from normal healthy pigmented skin. On cows, the skin of the teats appears dry and 'papery'. On physical examination, the affected animals are dull and depressed with pale and icteric mucus membranes. The skin on the muzzle shows hyperkeratosis and is necrotic. Blood was withdrawn and sent to the laboratory for complete blood count and for serum biochemistry analysis and results are shown below.	9



Fig 7a

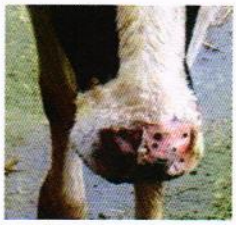


Fig 7b



Fig 7c

Parameter	Result	Normal Range
PCV	0.22L/L	(0.24-0.46 L/L)
Icteric index	50 Units	< 15 Units
Total bilirubin	178.4 µmol/L	1.7-27.2 µmol/L
Conjugated bilirubin	108.2 µmol/L	<10.2
y-GT	407 U/L	<25 U/L

Table 4.1

a. What conditions would you consider? (Most likely first.) [2]
b What are the possible causes? [2]
c What advice would you offer for management and prevention? [5]

END