FACULTY	HEALTH SCIENCES AND VETERINARY MEDICINE		
DEPARTMENT	PRECLINICAL VETERINARY SCIENCES, SCHOOL OF VETERINARY MEDICINE		
SUBJECT	VETERINARY STRUCTURE AND FUNCTION I (PAPER 1, ANATOMY)		
SUBJECT CODE	V3581ES		
DATE	June 2025		
DURATION	3 Hours	MARKS	150

Lecturers: Dr B. Mushonga, Dr B.A. Chiwome
Internal moderator: Dr A. Samkange
External moderator: Prof. J.P. Chamunorwa

Instructions
This paper consists of FOUR (4) pages including this front page.

This paper consists of 4 sections:
Section A: 40 marks
Section B: 50 marks
Section C: 45 marks
Section D: 15 marks

Answer each section in separate answer booklets
Answer ALL questions

Additional materials to be supplied: **None**

SECOND OPPORTUNITY EXAMINATION

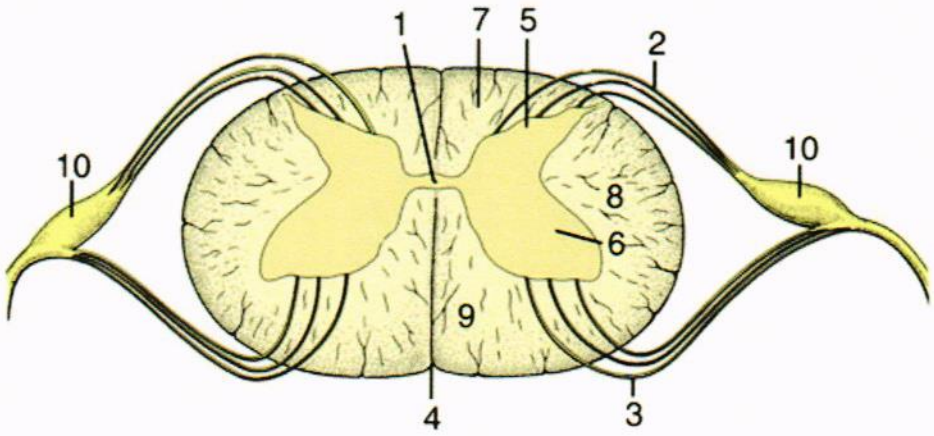
SECTION A (40 MARKS)

QUESTION 1

State the 2 **topographic** divisions of the nervous system and their components (7)

QUESTION 2

Label the diagram below (10)



QUESTION 3

A large frame dog is hit by a car and is presented to your practice in Otjiwarongo the following day. You examine the dog and determine that the dog had a fracture of the acromial head and another fracture at the level of the distal humerus. You fix the 2 fractures. Some time later, the dog comes back for a routine check-up, and you determine that the 2 fractures are completely healed, and the animal is weight bearing on the limb, and the gait appears normal, but the spine of the scapula appears very prominent, the muscle mass on either side of the spine is decreased, and the dorsum of the paw is bruised. However, the spine of the scapula appears very prominent and the muscle mass on either side of the spine is decreased, and the dorsum of the paw is bruised.

a. Which nerve(s) were most likely damaged? (2)
b. What is the cause of the muscles on either side atrophying (2)
c. Give the name used to describe this condition (1)
d. Name the muscles affected by the condition in (d or e above) (3)
e. Give the reason for the bruising of the dorsum of the paw. (1)
f. Which nerve is most likely also damaged in this patient? (1)
g. The nerve can be damaged at two levels. State the two levels of damage. (2)
h. At which level do you suppose the damage is, in this case (1)
i. Give two reasons why this is the case (2)

j. When closely examining the gait of the animal, something appears "off". Explain (2)

QUESTION 4

You are on a routine ambulatory tour of the region where you are a state veterinarian and a villager explains to you that his young bull's penis is not able to fully protrude (a problem known as paraphimosis). You pre-medicate the bull and put it under general anaesthesia. Before you correct the problem, you ask for a bale of hay, but the farmer has none. In the interest of time, you go ahead and correct the problem. The procedure takes longer due to excessive bleeding, but you successfully complete it. The animal recovers well from the anaesthesia. However, the face of the young bull is pulled to one side, the eyelid and ear of the same side are drooping, and food is accumulating in the cheek of the same side, and some food is falling to the ground.

i) Name the condition of the face being pulled to one side (1)
ii) Give the scientific name of the nerve involved (1)
iii) How is this condition related to the unavailability of the hay bale? (3)
iv) What will you tell the farmer before you leave? (1)

SECTION B: (50 MARKS)

1. Describe the components of the passive stay apparatus in the forelimb and how they work in the shoulder and elbow. (4)

2. Name the muscle(s) responsible for the following actions and its/their innervation:
a. Flaring the nostril, snarling (2)
b. To shrug the shoulders and turn the head to the side. (4)
c. The Panniculus reflex (2)

3. Describe the femorotibial ligaments that provide stability to the stifle joint and state the location and function of each. Tabulate your answer as shown below. (16)

Ligament	Location	Function

4. Describe the reciprocal apparatus by stating its function and components. (4)

5. Describe the origin, branches, and functions of the sciatic nerve in cattle. (18)

SECTION C: (45 MARKS)

1. Name the different shapes of neurons found in nature and give an example of each. (8)

2. Describe the triad seen in skeletal muscle and state its function in muscle contraction. (4)

3. Describe the blood supply to a standard long bone. (8)

4. Describe the function of the periosteum. (4)

5. Describe the dynamics of neutrophils concerning the duration of the different phases and distribution in the body. (12)

6. Describe the following blood cells by discussing their function and two microscopic characteristics. (9)
   i. Basophil
   ii. Plasma cells
   iii. Monocyte
   iv. Eosinophil

SECTION D: (15 MARKS)

1. Name the components of a somite, giving the organs or parts of organs formed from the following:
   i. Myotome (2)
   ii. Dermatome (2)
   iii. Sclerotome (2)

2. You are called to attend to two cases of dystocia (delayed or difficult birth). Which of the following animals would you attend to first, and why?

a) Horse and pig. (3)
b) Horse and cow. (2)
c) Pig and cow. (2)
d) Pig and goat.(2)

END OF PAPER