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 memorandum 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

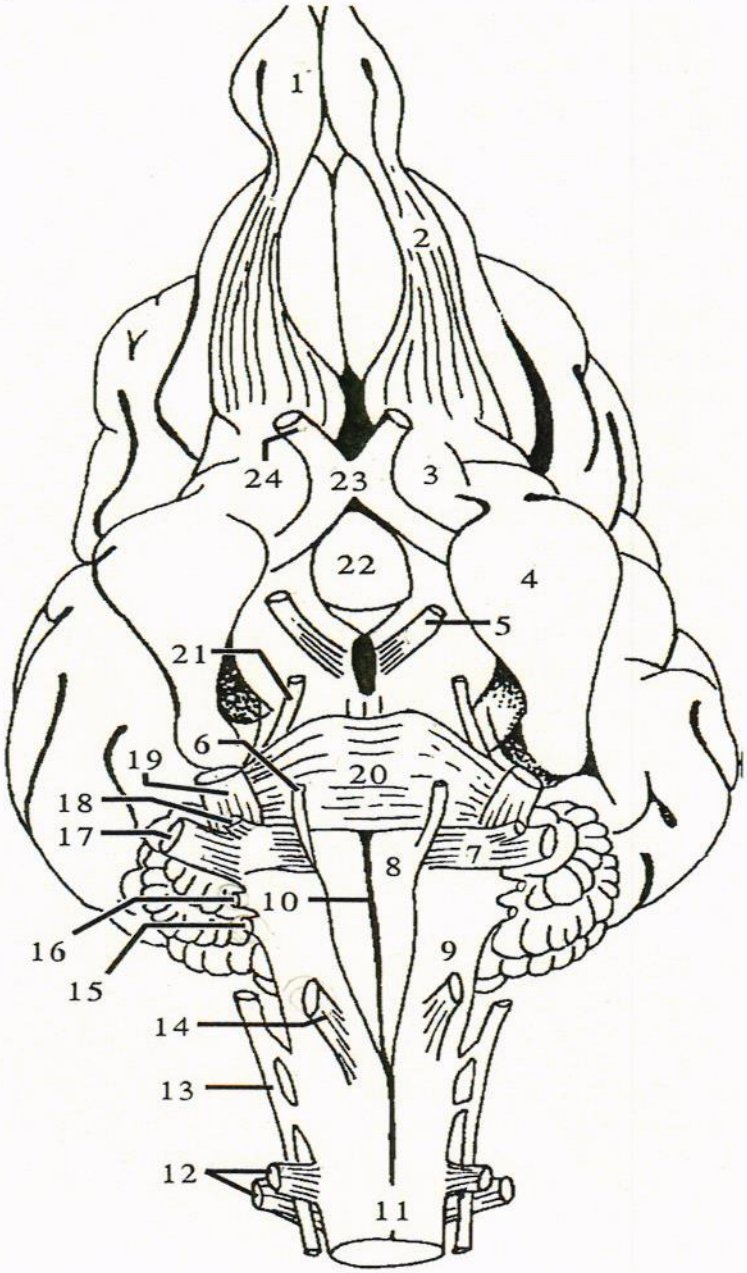
Additional materials to be supplied: **None**

FIRST OPPORTUNITY EXAMINATION

SECTION A (40 MARKS)

QUESTION 1

a) Label the following features of the brain: 1-24 (24marks)



QUESTION 2

This question has got no stem, i.e. or e.g. With reference to the autonomic nervous system, fill-in the blanks. (What is the student expected to do?) (12)

The autonomic nervous system is composed of a _____ (1) representing the _____ (1) of the efferent arm of the somatic nervous system. The first is the _____(1) neuron, and the second is the _____(1) neuron. The cell bodies of the first neuron of the sympathetic nervous system are in the _____ (1) portion of the spinal cord. Thus, the sympathetic nervous system is also called the _____(1). The cell bodies of the first neuron of the parasympathetic nervous

system are found in _____(1) and in the sacral portion of the spinal cord. Thus, the parasympathetic nervous system is named the _____(1). In general, the sympathetic nervous system prepares the animal for _____ (1) and_____(1) and the parasympathetic nervous system is responsible for _____(1) and _____(1).

QUESTION 3

Name the enlargements of the spinal cord and explain their appearance in the specific locations (2)

QUESTION 4

What is the fundamental anatomical difference between the grey matter of the brain and the spinal cord? (2)

SECTION B (50 MARKS)

1. Name the muscle responsible for controlling the movement of the lower jaw during chewing and give/state its innervation. (3)

2. Describe the motor and sensory innervation of the tongue in dogs. (5)

3. Name the branches of the trigeminal nerve, list the structure(s) they innervate and describe the type of innervation they provide to these structures. (14)

4. Describe the function and innervation of the rectus abdominis muscle (3)

5. Describe the following aspects of the obturator nerve:

   i. Its origin and course. (3)
   ii. The structures it innervates. (5)

6. Explain the patellar locking mechanism by describing how the different parts of the limb work together to achieve this. (6)

7. Classify the following joints and describe the elements that contribute to their structure and stability:

   i. The shoulder joint (4)

   ii. The elbow joint (7)

SECTION C: HISTOLOGY (45 MARKS)

1. Describe the structure and function of lymphocytes and monocytes. (8)

2. Describe the cellular characteristics of smooth muscle and cardiac muscle in terms of structure, function, and location. (11)

3. Describe the structure of a myelinated axon and describe how myelin contributes to the efficiency of nerve impulse conduction. (6)

4. Describe the structural differences between hyaline cartilage, fibrocartilage, and elastic cartilage and give 2 examples of where each is found. (12)

5. What is the mesothelium, and what are its functions? Give an example of mesothelium in the body. (4)

6. Define the term extra-medullary hemopoiesis and state when it occurs in an animal. (4)

SECTION D: DEVELOPMENTAL ANATOMY (15 MARKS)

1. Using your knowledge of the formation of the extra-embryonic membranes, fill in the information in the table below (8)

Extra embryonic membrane	Morphogenetic process involved in its formation	Outer Germ layer	Inner germ layer
Chorion		Ectoderm	
Amnion	Somatopleure evagination		
Yolk sac		Mesoderm	
Allantois			endoderm

2. Give two ways in which bones are formed during embryonic development and give examples of each. (4)

3. Describe the histogenesis of the nervous system (3)

END OF PAPER