FACULTY	**Health Sciences and Veterinary Medicine**		
DEPARTMENT	**School of Veterinary Medicine**		
SUBJECT	**Veterinary Structure and Function I (Paper 2)**		
SUBJECT CODE	**V3581ES**		
DATE	**JUNE 2025**		
DURATION	**3 hours**	**MARKS**	**150**

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Internal Moderator: Dr F. Chitate

External Moderator: Prof J.P Chamunorwa

This question paper consists of 3 pages, including this front page.

Instructions

Read the questions carefully Answer
ALL questions
Write clearly and concisely

Second Opportunity Examination

ESSAYS (40 marks)

1. Review the physiology of inorganic bone matrix under the following headings:
    a) Composition (6)
    b) Functions (2)
    a) Deposition (5)
    b) Pathophysiology (7)

2. Describe the composition and functions of the Blood Brain Barrier using the subheadings below;
    a) Composition (4)
    b) Mechanism of function (3)
    c) Veterinary significance (6)
    d) Areas of the brain without a Blood Brain Barrier (7)

SHORT ANSWER QUESTIONS (80 marks)

1. Name two indices of skeletal muscle damage. (2)
2. State the effects of the autonomic nervous system on cardiac muscle cells. (4)
3. List the characteristics of graded potentials. (4)
4. State three locations where synaptic transmission occurs. (3)
5. Write concisely on indoleamine neurotransmitters. (6)
6. Briefly elaborate on the receptors for catecholamines. (5)
7. Indicate the receptors for amino acid neurotransmitters. (7)
8. State the effects of organophosphate poisoning on neuro-glandular synapses (3).
9. Describe the actions of non-depolarizing neuromuscular blocking agents, giving examples. (5)
10. List the components of the extrapyramidal motor system (5)
11. State five functions of the cerebellum. (5)
12. Name the cranial nerves that carry both motor and sensory fibres. (4)
13. Name four types of fractures that may occur in long bones. (4)
14. Name three organs that are involved in synthesis of Vitamin D3. (3)
15. Describe the effects of hypocalcemia on skeletal neuromuscular function. (5)
16. Name three molecules which ensure energy metabolism is enhanced in skeletal muscle. (3)
17. Highlight the length-tension relationship in cardiac muscle. (2)
18. List the types of motion receptors present in the locomotor system. (3)
19. Name four mediators of inflammation that activate chemical nociceptors. (4)
20. Give three endogenous opioids involved in descending modulation of pain. (3)

PRACTICAL (30 marks)

1. Describe the performance and interpretation of the following spinal reflexes in neurological examination of the dog;

Thoracic Limb

a) Biceps reflex (2)
b) Triceps reflex (2)
c) Extensor carpi radialis reflex (2)
d) Withdrawal reflex (3)
e) Crossed extensor reflex (2)

Pelvic limb

f) Patellar reflex (2)
g) Gastrocnemius reflex (2)
h) Cranial tibial muscle reflex (2)
i) Sciatic nerve reflex (2)
j) Withdrawal reflex (3)
k) Crossed extensor reflex (2)
l) Anal reflex (3)
m) Babinski's sign (3)

END OF PAPER