BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE EDUCATION

SCIENCE AND MATHEMATICS EDUCATION DEPARTMENT

Programme: Bachelor of Science Education Honours Degree in Biology

Course: BZH205 Animal Physiology **Time 2 hours** JAN 2025

SEMESTER EXAMINATION

INSTRUCTIONS

Answer four questions. You must answer question 1 (Section A) and any other three questions from section B. Each question carries 25 marks. Where a question contains subdivisions, mark value of each subdivision is given in brackets. Illustrate your answers where appropriate with clearly labelled diagrams. You should not spend more than 30 minutes on each question. Write only the question number on the answer script, do not copy the question.

SECTION A (COMPULSORY)

1. Describe a procedure to determine the different enzymes found in the digestive system of a ruminant. (25).

SECTION B

2. a) Discuss the central themes in physiology (15)

   b) Explain adaptations of animals to terrestrial environment (10)

3. a) Compare and contrast the physiology of the Gastro-intestinal tract in ruminants and monogastrics (15)

   b) Outline the importance of the pancreas and liver as accessory organs of the digestive tract (10)

4. a) Explain the structure-function relationship of arteries, veins and capillaries (15)

b) Outline the transportation of carbon dioxide and oxygen in the blood. (10)

5. a) Write short notes on the regulatory function of the kidney in:

   i) Blood volume (5)
   ii) Osmoregulation (5)
   iii) Ionic balance (5)

b) Outline the chemical basis of a resting membrane potential and action potential (10)

6.(a) Classify hormones according to source, target organ and chemical structure (12)

b) Outline the functions of hormones produced by the posterior and anterior pituitary gland (13)

END OF EXAMINATION QUESTION PAPER