

BINDURA UNIVERSITY OF SCIENCE EDUCATION
BIOLOGICAL SCIENCES DEPARTMENT
BScBZH

ANIMAL PHYSIOLOGY BTEC230/BZH205

EXAMINATION

2 HOURS (100 marks)

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, the mark value of each subdivision is given in brackets. Illustrate your answer where appropriate with large clearly labelled diagrams. You should not spend more than 30 minutes on each question.

SECTION A (COMPULSORY)

1. (a) Describe a procedure to determine oxygen consumption in a given fish species. (15 marks)
(b) Compare gaseous exchange in birds and insects. (10 marks)

SECTION B

2. Write short notes on any FIVE of the following:
- (a) Bohr effect (5 marks)
 - (b) ADH (5 marks)
 - (c) Isometric contraction (5 marks)
 - (d) Cerebrum (5 marks)
 - (e) Sarcomere (5 marks)
 - (f) Respiratory pigments (5 marks)
3. (a) Explain the stages of an action potential and how action potentials are propagated. (15 marks)
(b) Compare and contrast chemical and electrical synapses. (10 marks)
4. (a) Describe the exocrine and endocrine function of the pancreas. (5 marks)
(b) Describe the mechanism of insulin secretion by the pancreas. (10 marks)
(c) Describe the mechanisms of action of both steroid and protein hormones. (10 marks)
5. (a) Compare the different types of muscles. (15 marks)
(b) Describe the role of Ca^{2+} ions, troponin, and tropomyosin in muscle contraction. (10 marks)
6. Compare the major byproducts of ammonia metabolism in mammals, birds, insects, and reptiles.

END OF EXAMINATION QUESTION PAPER