

BINDURA UNIVERSITY OF SCIENCE EDUCATION  
DEPARTMENT OF BIOLOGICAL SCIENCES  
DipScEd  
PLANT AND ANIMAL NUTRITION (BZ003)

EXAMINATION  
2 HOURS (100 MARKS)

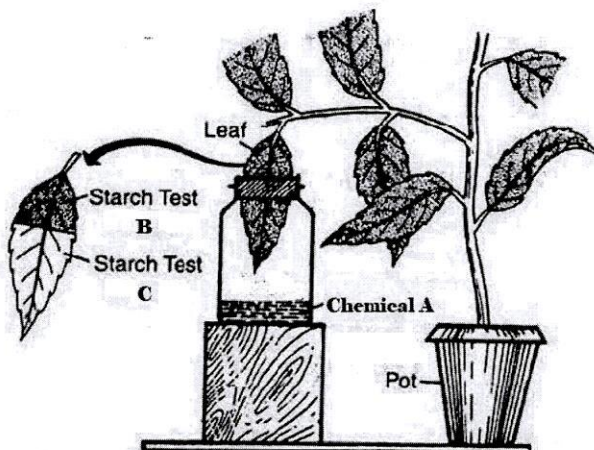
JUN 2023

**INSTRUCTIONS**

Answer **FOUR** questions. You **MUST** answer **QUESTION 1** (Section A) and any **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 answers where appropriate with large, clearly labelled diagrams. You should not spend more than thirty minutes on each question.

**SECTION A (COMPULSORY)**

1. (a) The diagram shows a setup of an experiment to investigate one of the conditions necessary for photosynthesis.



- (i) State and explain the initial step carried out on the plant before the experiment could be carried out. (3marks)
- (ii) Name the condition under investigation. (1 mark)
- (iii) Name the chemical A that was used. (1 mark)
- (iv) Explain the procedure you would carry out to test for the presence of starch in the leaf. (7 marks)
- (v) State the results of starch tests on parts B and C. (2marks)
- (vi) State the control in this experiment. (1 mark)
- (b) Outline the advantages and disadvantages of hydroponics. (10 marks)

## **SECTION B**

2. Compare dentition and digestive systems in herbivores, carnivores and omnivores.
3. (a) Explain the dietary requirements of a pregnant woman. (10 marks)  
(b) Describe the role of Dietary Reference Values (DRVs). (15 marks)
4. Outline the stages of photosynthesis in a dicotyledonous leaf.
5. Compare ruminant and non-ruminant digestion.
6. Write short notes on any **FIVE** of the following:
  - (a) Chloroplasts (5 marks)
  - (b) Zymogens (5 marks)
  - (c) C<sub>4</sub> plants (5 marks)
  - (d) Protein energy malnutrition (PEM) (5 marks)
  - (e) Anorexia nervosa (5 marks)
  - (f) Micronutrients (5 marks)

**END OF EXAMINATION QUESTION PAPER**