

BINDURA UNIVERSITY OF SCIENCE EDUCATION
SCIENCE & MATHEMATICS EDUCATION DEPARTMENT
DIPLOMA IN SCIENCE EDUCATION-SCIENCES (DipScEdSc)
INTRODUCTION TO CELL AND MOLECULAR BIOLOGY (DB001) EXAMINATION

DURATION: 2 HOURS

100 MARKS

JUN 2025

INSTRUCTIONS TO CANDIDATES

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

SECTION A (COMPULSORY)

1. (a) Describe a procedure for testing for proteins in a food sample. (10 marks)
- (b) Outline a procedure for preparing onion cells for viewing under a light microscope. (15 marks)

SECTION B

2. Describe the importance of the properties of water in living organisms.
3. Discuss the importance of lipids in living systems.
4. (a) In tabular form, list the differences between plant and animal cells. (15 marks)
- (b) Describe the functions of membrane proteins. (10 marks)
5. Write short notes on any five of the following:
 - (a). Endocytosis (5 marks)
 - (b). Hydrolysis (5 marks)
 - (c). Mitochondria (5 marks)
 - (d). Simple diffusion (5 marks)
 - (e). Phospholipids (5 marks)
 - (f). Active transport (5 marks)
6. (a) Describe the main stages of mitosis. (15 marks)
- (b) Outline the significance of mitosis. (10 marks)

END OF EXAMINATION QUESTION PAPER