

**BINDURA UNIVERSITY OF SCIENCE EDUCATION
SCIENCE & MATHEMATICS EDUCATION DEPARTMENT
DIPLOMA IN SCIENCE EDUCATION
CELL BIOLOGY (BZ001)**

**EXAMINATION
2 HOURS (100 MARKS)**

JUN 2024

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 the procedure you would follow in preparing onion cells for viewing under the light microscope. (15 marks)
- (b) In tabular form state the advantages and disadvantages of the light microscope over the electron microscope. (10 marks)

SECTION B

2. (a) Describe the main stages of mitosis. (15 marks)
- (b) In tabular form, state the differences between mitosis and meiosis. (10 marks)
3. Describe the structure and function of the mitochondria.
4. (a) Outline the Fluid Mosaic model of membrane structure. (15 marks)
- (b) Discuss the evidence for the cell theory. (10 marks)
5. Write short notes on any **five** of the following:
 - (a). Cytoskeleton (5 marks)
 - (b). Compartmentalisation (5 marks)
 - (c). Lysosome (5 marks)
 - (d). Golgi body (5 marks)
 - (e). Ribosome (5 marks)
 - (f). Nucleus (5 marks)
6. Discuss the processes involved in the transport of solutes across cellular membranes.

END OF EXAMINATION QUESTION PAPER