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 — NOV 2024 — 100 MARKS

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 the following:
   (i) Starch (9 marks)
   (ii) Water (9 marks)
   (b) Distinguish between resolution and magnification in microscopy. (7 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