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 JUN 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 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) Describe the emulsion test for lipids. (10 marks)

   (b) In tabular form, state the advantages and disadvantages of the light microscope over the electron microscope. (15 marks)

SECTION B

2. Outline the structure and functions of lipids in living organisms.

3. (a) Describe the fluid mosaic model of membrane structure. (15 marks)

   (b) In tabular form, list the differences between prokaryotic cell with eukaryotic cell. (10 marks)

4. Write short notes on any **five** of the following:

   (a). Osmosis (5 marks)
   (b). Magnification (5 marks)
   (c). Test for reducing sugars (5 marks)
   (d). Simple diffusion (5 marks)
   (e). Disaccharides (5 marks)
   (f). Mitochondria (5 marks)

5. (a) Outline the classification of carbohydrates. (15 marks)

   (b) Outline the importance of carbohydrates in living organisms. (10 marks)

6. Describe the structure and function of deoxyribonucleic acid (DNA) in living organisms.

END OF EXAMINATION QUESTION PAPER