BINDURA UNIVERSITY OF SCIENCE EDUCATION
DEPARTMENT OF BIOLOGICAL SCIENCES
HBScBZH
CELL AND MOLECULAR BIOLOGY (BZH 104)

EXAMINATION
2 HOURS (100 MARKS) JAN 2025

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

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SECTION A COMPULSORY

1. (a) Describe how you would set up a microscope to examine a prepared onion slide under high power. (12 marks)

   (b) Explain the effect of a range of concentrations of sugar solution on the mass of plant tissue. (13 marks)

SECTION B

2. Discuss the functions of the endomembrane system in eukaryotic cells.

3. (a) Explain the function of microfilaments. (10 marks)

   (b) Describe the process of photorespiration and its impact on Calvin cycle. (15 marks)

4. Explain the central dogma of molecular biology.

5. (a) Discuss the importance of cell adhesion in cancer metastasis. (15 marks)
   (b) Describe the role of enzymes in glucose metabolism in the Pentose Phosphate Pathway (PPP). (10 marks)

6. (a) Describe the events which occur in prophase I of meiosis. (10 marks)

(b) Discuss the significance of meiosis. (15 marks)

END OF EXAMINATION QUESTION PAPER