BINDURA UNIVERSITY OF SCIENCE EDUCATION

BIOLOGICAL SCIENCES DEPARTMENT

BScBZH

MOLECULAR BIOLOGY (BZH231) / BTEC231/

EXAMINATION
2 HOURS (100 MARKS)

JUN 2023

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. Describe Griffiths' experiments used to demonstrate that cells contain polynucleotides as hereditary information.

Section B

2. Describe the process of DNA replication in eukaryotes.

3. Differentiate between prokaryotic and eukaryotic mRNA.

4. Write short notes on any FIVE of the following:

   a) Ribosomal RNA (rRNA). (5 marks)

   b) Central Dogma. (5 marks)

   c) Operon concept. (5 marks)

   d) Medical application of polymerase chain reaction (PCR). (5 marks)

   e) Essential amino acids. (5 marks)

   f) Mechanisms of gene duplication. (5 marks)

5. Discuss genomic data mining highlighting how it has revolutionised Biology.

6. Discuss regulation of gene expression in prokaryotes.

END OF EXAMINATION QUESTION PAPER.