BINDURA UNIVERSITY OF SCIENCE EDUCATION

BIOLOGICAL SCIENCES DEPARTMENT

HBScBioTec

PHARMACEUTICAL BIOTECHNOLOGY (BTEC411) (3)

NOV 2024

EXAMINATION
2 HOURS (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) Outline a method for production of monoclonal antibodies. (15 marks)
   (b) Distinguish between monoclonal and polyclonal antibodies. (10 marks)

SECTION B

2. Pharmacogenomics is at the centre of precision medicine. Discuss.

3.(a). Give a detailed account of the use of metabolomics in characterisation of phytochemical preparations. (15 marks)
   (b). Comment on use of in silico screening in drug discovery. (10 marks)

4. Write an essay on molecular pharming, highlighting the biosafety issues associated with the technique.

5. Write short notes on any FIVE of the following:
   (a) Characteristics of ideal cloning vector. (5 marks)
   (b) Assessment of stability of a recombinant protein. (5 marks)
   (c) Production of monoclonal antibodies. (5 marks)
   (d) Circular dichroism. (5 marks)
   (e) cDNA library. (5 marks)
   (f) Protein structure prediction methods. (5 marks)

6. Discuss cell based therapeutic strategies.

END OF EXAMINATION QUESTION PAPER