

BINDURA UNIVERSITY OF SCIENCE EDUCATION

BIOLOGICAL SCIENCES DEPARTMENT

BACHELOR OF SCIENCE HONOURS DEGREE IN BIOLOGY

BTEC 414 (IMMUNOLOGY)/BZH221 (IMMUNOLOGY)

EXAMINATION 2 HOURS

MAR 2024

(100 MARKS)

INSTRUCTIONS TO CANDIDATES

Answer FOUR (4) questions. You MUST answer QUESTION 1 from Section A and any THREE (3) questions from SECTION B. Each question carries 25 marks. Where a question contains subdivisions, the mark value of each part is given in brackets. Illustrate your answer where appropriate with large clearly labeled diagrams. You should not spend more than 30 minutes on each question.

SECTION A (COMPULSORY)

1. (a) Explain the different defence types of immune system. (5 marks)
- (b) Explain the modification of antigen vaccine particles to render them harmless. (10 marks)
- (c) Using examples in each case, describe any TWO barriers of the innate immune system. (6 marks)
- (d) Define the term ELISA. (4 marks)

SECTION B

2. Using a diagram to show positions of organs, describe the lymphoid system.
3. Describe the immunological phases of the primary and secondary responses.
4. With the aid of a diagram, explain the exogenous antigen processing.
5. Explain the relevance of single radial and double diffusion techniques.
6. Outline the functions of the FIVE immunoglobulin classes.

END OF EXAMINATION QUESTION PAPER