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(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS
MAIN EXAMINATION

UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR

THIRD YEAR SECOND SEMESTER EXAMINATIONS

FOR THE DEGREE OF

BACHELOR OF SCIENCE BIOTECHNOLOGY

COURSE CODE: SBT 324

COURSE TITLE: MOLECULAR AND CELLULAR IMMUNOLOGY

DATE: FRIDAY, 22ND APRIL 2022 **TIME: 8:00 – 10:00 A.M.**

INSTRUCTIONS TO CANDIDATES

Answer all questions in section A
Answer any TWO questions in section B

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

SECTION A (SHORT ANSWER QUESTIONS, 40 MARKS)

1. Compare and contrast between class I and class II MHC molecules. [5 marks]

2. Draw a work flow chart diagram for the production of monoclonal antibodies based on hybridoma technology. [5 marks]

3. Explain the six (6) different classes of vaccines. [5 marks]

4. State and explain the functions of the complement system. [5 marks]

5. Draw the basic structure of an immunoglobulin and name the five (5) isotypes. [5 marks]

6. Give an overview of the ABO blood group typing system. [5 marks]

7. Describe the clonal selection hypothesis. [5 marks]

8. Write notes on the principal organs of the human immune system. [5 marks]

SECTION B (ESSAY QUESTIONS, 30 MARKS)

9. Acquired Immunodeficiency Syndrome [AIDS] is a classic case of an immunodeficiency disease. Discuss. [15 marks]

10. Discuss the most common cytokines and their role in the immune response. [15 marks]

11. Discuss the mechanisms and pathogenesis of autoimmune diseases. [15 marks]