



MACHAKOS UNIVERSITY

University Examinations for 2022/2023 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

**THIRD YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR
BACHELOR OF SCIENCE IN BIOLOGY**

SZL307: FUNDAMENTALS OF IMMUNOLOGY

DATE: 8/3/2023

TIME: 8.30 AM – 10.30 AM

INSTRUCTIONS

- a) Answer question 1 (compulsory) and any other two questions
- b) Illustrate your answers with diagrams wherever appropriate.

QUESTION ONE (30 MARKS)

- a) Illustrate the structure of an Ig molecule (3 marks)
- b) Explain the properties of the short chain of an Ig molecule (3 marks)
- c) Outline traffic by lymphocytes in a mammalian body (3 marks)
- d) Compare the structure and function of various agranulocytes (3 marks)
- e) Outline the actions that follow activation of the complement pathway (3 marks)
- f) Outline the properties of IgM (3 marks)
- g) Differentiate between an epitope and a paratope (3 marks)
- h) Explain the roles of any three organs of the immune system (3 marks)
- i) Explain non-susceptibility to pathogens as a body defense mechanism (3 marks)
- j) Explain factors that characterize an antigen – antibody reaction (3 marks)

QUESTION TWO (20 MARKS)

Discuss the role of blood in the immune system of the body (20marks)

QUESTION THREE (20 (MARKS))

Discuss the autoimmune disorders. (20 marks)

QUESTION FOUR (20 MARKS)

a) Explain immunity to viral infections in man (8 marks)

b) Discuss bonding between and antigen and an antibody. (12 marks)

QUESTION FIVE (20 MARKS)

Discuss the types of hypersensitivity reactions inherent in man (20 marks)