



MACHAKOS UNIVERSITY

University Examinations 2019/2020 academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE (BIOLOGY)

SZL 307 FUNDAMENTALS OF IMMUNOLOGY

DATE: 20/1/2021

TIME: 8.30-10.30 AM

INSTRUCTIONS

1. Answer Question 1 (compulsory) and **any two** questions in Section B.
2. Use clean well labelled diagrams wherever appropriate.

Section A

QUESTION ONE COMPULSORY (30 MARKS)

- a) Explain the bonding involved in the structure of an immunoglobulin molecule (3 marks)
- b) Briefly describe non-susceptibility of a host to infection by parasites (3 marks)
- c) Outline any three types / sources of vaccines (3 marks)
- d) Giving two specific examples, define xenotransplantation (3 marks)
- e) Outline any three factors involved in the development of an allergy (3 marks)
- f) Explain Antibody specific with reference to Ab-Ag reactions (3 marks)
- g) Explain the properties of antigens (3 marks)
- h) Outline three (3) examples of natural body resistance to infectious disease causing organisms
(3 marks)
- i) Outline three pathways of acquiring immunity in man (3 marks)
- j) Explain the response of the human body to viral infections (3 marks)

SECTION B (ATTEMPT ANY TWO QUESTIONS ONLY (40 MARKS))

QUESTION TWO (20 MARKS)

- a) Outline the structure of an immunoglobulin molecule (8 marks)
- b) Characterise any four immunoglobulins (12 marks)

QUESTION THREE (20 MARKS)

Discuss the role of blood in the defence of the human body against infection by disease causing agents

QUESTION FOUR (20 MARKS)

Discuss Antibody Dependent Cytotoxic Hypersensitivity in man

QUESTION FIVE (20 MARKS)

Discuss the various method of normal protection of human body against infection