



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE(BIOLOGY)

SZL 407: ADVANCED IMMUNOLOGY

DATE: 30/8/2022

TIME: 8.30-10.30 AM

INSTRUCTIONS

1. Answer 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) Describe three progenitor stem cells lineages. (3 marks)
- b) Differentiate dendritic from mast cells. (3 marks)
- c) Describe an experiment to distinguishes B cells from T cells. (3 marks)
- d) Outline the inflammatory responses that enhance phagocytosis through acute phase proteins. (3 marks)
- e) Describe three types of functional effector T cells. (3 marks)
- f) Describe three functions of immunological responses. (3 marks)
- g) Enumerate three features of memory B cells. (3 marks)
- h) Describe three responses due to Inflammation of the body's tissues. (3 marks)
- i) Describe briefly hemolytic anemia. (3 marks)
- j) Describe monocytes. (3 marks)

SECTION B

QUESTION TWO (20 MARKS)

Discuss the features of both primary and secondary antibody responses.

QUESTION THREE (20 MARKS)

- a) Discuss immune evasion and suppression by the tumor cells. (10 marks)
- b) Discuss the activation and production of antibodies through clonal selections. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Discuss antibody and B cells maturation. (10 marks)
- b) Discuss the structure and classes of antibodies. (10 marks)

QUESTION FIVE (20 MARKS)

Discuss an immunological system that can clear pathogen – antibody complexes.