



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR
FOURTH YEAR SECOND SEMESTER**

**SCHOOL OF PURE APPLIED AND HEALTH
SCIENCES
BACHELOR OF SCIENCE IN MICROBIOLOGY**

**COURSE CODE: ZOO 4219-1
COURSE TITLE: APPLIED IMMUNOLOGY**

DATE: 16/4/2024

TIME: 1100-1300 HRS

Instructions

A. Answer ALL questions in section A and any TWO in section B

B. Illustrate your answers with diagrams and give examples where appropriate.

SECTION A (30 MARKS)

1. (a) Why are pregnant mothers and children under five years more vulnerable to malaria than any other age group in human population?
(1 mark)
- (b) Why is it easier to develop a vaccine against a virus than a protozoon?
(2 marks)
2. (i) Why is Ag-ELISA preferred to Ab-ELISA during the diagnosis of parasitic infections in the tropics?
(1 mark)
- (ii) Explain the importance of quality diagnosis in an epidemic.
(2 marks)
3. State and explain three categories of a tumour.
(3 marks)
4. State three different ways in which the IgG protects individuals against malaria parasites including both sporozoites and merozoites.
(3 marks)
- (4 (i) What is an autoimmune disorder?
(1 mark)
- (ii) Explain two ways in which AIDS patients lose their Helper T cells (CD4+).
(2 marks)
- (5 (i) What is an immunological tolerance?
(1 mark)
- (ii) When do central and peripheral tolerances occur?
(2 marks)
- (6 State and briefly explain 3 critical relationships between the transplanted material and the recipient.
(3 marks)
- (7 State 3 basic types of "recognition" , which allows the host to know that the transplanted tissue/organ is foreign.
(3 marks)
- (8 State any three evidences that tumours can elicit an immune response.
(Any three, 3 marks)

- (9 (a), What is the basic differences between MHC Class I and MHC Class II molecules in immunology?
(1 mark)
- (b) Why are people immunized in life?
(2 marks)

SECTION B (40 MARKS) Answer ANY TWO questions

11. Discuss the biological functions of the various Toll-like receptors in immunology.
(20 marks)
12. Using examples, discuss how parasites evade the hosts' immune response system.
(20 marks)
13. Define hypersensitivity and discuss hypersensitivity reactions.
(20 marks)
14. Discuss immunodeficiency disorders.
(20 marks)

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