



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR
FOURTH YEAR SECOND SEMESTER**

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

COURSE CODE: ZOO 4219

COURSE TITLE: APPLIED IMMUNOLOGY

DATE: 18/4/2023

TIME: 0830-1030 HRS

INSTRUCTIONS TO CANDIDATES

Answer **ALL** the questions in **Section A** and **ANY TWO** questions in **Section B**.

Within a section, all questions carry equal marks. Illustrate your answers with well-labeled 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) Explain reasons for preferring Ag-ELISA 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. (3marks)
4. State three different ways in which the IgG protects individuals against malaria parasites including both sporozoites and merozoites. (3 marks)
5. (i) What is an autoimmune disorder? (1 mark)
(ii) Explain two ways in which AIDS patients lose their Helper T cells (CD4+). (2 marks)
6. (i) What is an immunological tolerance? (1 mark)
(ii) When do central and peripheral tolerances occur? (2Marks)
7. Explain 3 critical relationships between the transplanted material and the recipient. (3 marks)
8. State 3 basic types of “recognition”, which allows the host to identify a transplanted tissue/organ is foreign. 42`19 (3 marks)
9. State any three evidences, which indicate that tumours can elicit an immune response in the host body. (3 marks)
10. (a), What is the basic differences between MHC Class I and MHC Class II molecules in immunology?
(b) Explain reasons for immunizing people in life. (2 marks)

SECTION B (40 MARKS)

- Q11. Discuss the biological functions of the various Toll-like receptors in immunology. (20 marks)
- Q12. Using examples, discuss how parasites evade the hosts' immune response system. (20 marks)
- Q13. (a) Define the term hypersensitivity.
- (b) Discuss hypersensitivity reactions. (20 marks)
- Q14. Discuss immunodeficiency disorders. (20 marks)

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