

CHUKA

UNIVERSITY



UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
SCIENCE

ZOOL 342: CELLULAR IMMUNOLOGY

STREAMS: BSC.

TIME: 2 HOURS

DAY/DATE: MONDAY 14/04/2025

2.30 P.M. – 4.30 P.M.

INSTRUCTIONS

- Answer all questions in Section A and any other two question from Section B

Section A (30 MARKS)

1. Explain the difference between MHC Class I and MHC Class II molecules in terms of structure, function and location. (6 marks)
2. Describe the process of T-cell dependent activation of B-cells, including the importance of co-stimulatory signals. (5 marks)
3. Compare and contrast the functions of Th1, Th2 and Th17 cells. (5 marks)
4. Describe the various characteristics of cytokines (6 marks)
5. Explain the key tumour antigens and their role in cancer immunology (4 marks)
6. Outline factors promoting immunological tolerance (4 marks)

Section B (40 MARKS)

7. Discuss the process of clonal selection and expansion in T-cells and explain how the process contributes to the specificity and memory of the immune response. (20 marks)
8. Describe the following phenomena
A. Cytotoxic T-cell killing. (10 marks)

B. Erythroblastosis fetalis

(10 marks)

9. Discuss the mechanisms influencing the development of autoimmune diseases, giving specific examples in each case. (20 marks)
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