

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATION
RESIT/SUPPLEMENTARY / SPECIAL EXAMINATIONS
EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
BIOCHEMISTRY**

BIOC 400/406: IMMUNOLOGY

STREAMS:

TIME: 2 HOURS

DAY/DATE: TUESDAY 02/11/2021

8.30 A.M - 10.30 A.M.

INSTRUCTIONS

- i. Answer Question One and any other Two Questions**
- ii. Do not write on the question paper**

Question One (30 marks)

- a. All immunogens are antigens but not all antigens are immunogens, explain this statement. (4 marks)
- b. What advantage might there be in having a variety of different antibody classes? (5 marks)
- c. A number of bacterial components enhance the expression of MHC molecules and co-stimulatory molecules on macrophages. What effect would you expect this to have on the immune system? (5 marks)
- d. Describe the different types of cytokines and explain their role as soluble mediators of immunity. (6 marks)
- e. Explain the role of the complement and describe how complement activation pathways work. (10 marks)

Question Two (20 marks)

- a. Describe the kinetics of activation of host defenses in response to a typical acute virus infection such influenza. (10 marks)
- b. Describe the various strategies adopted by HIV to evade the host immune response. (10 marks)

Question Three (20 marks)

Autoimmunity is an immunopathology arising from immune response to self-antigens. Describe the following autoimmune conditions

- i. Hashimoto's Thyroiditis (5 marks)
- ii. Rheumatoid Arthritis (5 marks)
- iii. Systemic Lupus Erythematosus (SLE) (5 marks)
- iv. Multiple Sclerosis (5 marks)

Question Four

- a. Describe the various forms of antigenic material that can be used in vaccine development (10 marks)
- b. Describe the factors to consider during immunization. (10 marks)

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