
CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE AWARD OF DEGREE IN BACHELOR OF
SCIENCE IN BIOCHEMISTRY

BIOC 400: IMMUNOLOGY

STREAMS: B.Sc (BIOCHEMISTRY) Y4S1

TIME: 2 HOURS

DAY/DATE: FRIDAY 14/12/2018

11.30 A.M - 1.30 P.M.

INSTRUCTIONS:

- Answer Question ONE and any other TWO Questions
- 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) Describe the advantages associated with 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 as influenza. [10 Marks]
- (b) Describe the various strategies adopted by HIV to evade the host immune responses. [10 Marks]

QUESTION THREE: [20 MARKS]

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

- (a) Hashimoto's Thyroiditis [5 Marks]
- (b) Rheumatoid Arthritis [5 Marks]
- (c) Systemic Lupus Erythematosus (SLE) [5 Marks]
- (d) Multiple Sclerosis [5 Marks]

QUESTION FOUR: [20 MARKS]

(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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