

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE

BMED 419: IMMUNOLOGY AND IMMUNOCHEMISTRY

STREAMS:

TIME: 2 HOURS

DAY/DATE: MONDAY 4/12/2017

8.30 A.M – 10.30 A.M

INSTRUCTIONS:

- **Answer question one and any other two questions**
- **Do not write on the question paper**

1. (a) All immunogens are antigens but not all antigens are immunogens. Explain . [4marks]

(b) What advantage might there be in having a variety of different antibody classes? Explain. [5marks]

(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? [5marks]

(d) Describe the different types of cytokines and explain their roles as soluble mediators of immunity. [6marks]

(e) Leukocyte migration is determined by particular sets of chemokines and adhesion molecules. Describe the stages in the adhesion that precedes migration across the endothelium. [10marks]
2. (a) Describe the role of CTLA-4, CD28 and B7 molecules in activation and regulation of the T cell. [10marks]

(b) Describe the strategies adopted by viruses to avoid recognition by host immune defenses. [10marks]

3. Autoimmunity is an immunopathology arising from immune response to self antigens. Describe the following autoimmune conditions.
- (i) Hashimoto's Thyroiditis
 - (ii) Rheumatoid Arthritis
 - (iii) Systemic lupus Erythematosus (SLE)
 - (iv) Multiple Sclerosis
4. (a) Describe the specific antigens associated with tumors. [5marks]
- (b) Describe the factors which limit anti-tumor immune responses. [15marks]
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