

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FOURTHYEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE

ZOOL 443: IMMUNOLOGY AND IMMUNOPATHOLOGY

STREAMS: B.Sc Y4S1

TIME: 2 HOURS

DAY/DATE: THURSDAY 7/12/2017

8.30 A.M - 10.30 A.M.

INSTRUCTIONS:

- Answer all Questions in Section A and any TWO question in Section B

SECTION A: [30 MARKS]

- (a) Describe briefly the structure of an immunoglobulin molecule. [3 Marks]
- (b) State two functions of immunoglobins. [2 Marks]
- (c) Outline two factors that affect antigenicity. [1 Mark]
2. (a) Explain the following features of antigen-antibody reactions.
- (i) Cross-reactivity [1 Mark]
- (ii) Acidity [1 Mark]
- (b) Explain two stages of antigen-antibody reactions. [2 Marks]
- (c) Outline two examples of autoimmune diseases. [1 Mark]
3. Describe briefly the mechanisms of immunological tolerance. [5 Marks]
4. (a) Define the term transplantation and give two types. [2 Marks]
- (b) Explain two types of graft rejection [2 Marks]
- (c) Name two enzymes released by cytotoxic T cells during immune reactions. [1 Mark]
5. (a) State the functions of the following cytokines;
- (i) Transforming growth factor [1 Mark]
- (ii) IL-2 [1 Mark]
- (iii) Tumor necrosis factor [1 Mark]
- (b) Explain the mechanism of processing and presentation of endogenous antigens. [2 Marks]
6. (a) Explain the following

ZOOL 443

- (i) Type I hypersensitivity [1 Mark]
- (ii) Deliberately induced immunosuppression [1 Mark]
- (b) Explain radial immunodiffusion technique [2 Marks]
- (c) State the role of the spleen. [1 Mark]

SECTION B: [40 MARKS]

- 7. Describe the complements activation pathways. [20 Marks]
- 8. Describe the following techniques
 - (a) Enzyme Linked Immunosorbent Assay (ELISA) [12 Marks]
 - (b) Immunofluorescence [8 Marks]
- 9. Discuss how defensive barriers confer innate immunity. [20 Marks]

.....