TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Applied & Health Sciences

DEPARTMENT OF ENVIRONMENT AND HEALTH SCIENCES

DIPLOMA IN COMMUNITY HEALTH

(DCH 14M)

AML 2104: FUNDAMENTALS OF IMMUNOLOGY

SPECIAL/SUPPLEMENTARY EXAMINATIONS

SERIES: FEBRUARY 2015

TIME: 2 HOURS

INSTRUCTIONS:

- This paper consists of **FIVE** questions.
- Answer question **ONE (Compulsory)** in Section **A** and any other **TWO** questions in **B**.

This paper consists of Three printed pages.

SECTION A (Compulsory) 30 Marks

QUESTION 1

a) State the **TWO** main subdivisions of the immune system. **(2 marks)**

b) Tabulate any differences between the **TWO** main forms of immunity in (a) above. **(4 marks)**

c) List any **FOUR** organs of the immunological apparatus. **(4 marks)**

d) Give any **FOUR** characteristics of IgM. **(4 marks)**

e) Outline the basic functions of the immune system. **(3 marks)**

f) Differentiate between humoral and cellular immune responses. **(4 marks)**

g) Distinguish between active and passive immunity. **(4 marks)**

h) Classify the immunoglobulin classes based on their heavy chains. **(5 marks)**

SECTION B (Answer any TWO questions)

QUESTION 2

a) Give the types of hypersensitivity.

b) Describe the characteristics and functions of the following immunoglobulin molecules:
   i) Igh **(4 marks)**
   ii) Igm **(3 marks)**

c) Give an example for the following types of acquired immunity. **(4 marks)**
   i) Natural passive
   ii) Natural active
   iii) Artificial passive
   iv) Artificial active

QUESTION 3

a) Briefly explain the following terms as used in immunology:
   i) Specificity **(3 marks)**
   ii) Memory **(2 marks)**

b) i) Define the term hypersensitivity. **(2 marks)**
   ii) Choose from the following to answer question (I – viii). **(8 marks)**
   A. I gm
   B. I Gg
   C. IgA
   D. IgE
   i) Crosses the placenta
   ii) Found in milk of lactating women.
   iii) Binds firmly to most cells and triggers anaphylaxis.

iv) Is a pentamere
v) Present in highest concentration in serum
vi) Present in highest concentration in secretions
vii) Contains 10 heavy and 10 light chains.
viii) Present in lowest concentration in serum

QUESTION 4

a) Draw a labelled diagram of an immunoglobulins. **(9 marks)**

b) Outline the differences between primary and secondary immune responses. **(6 marks)**

QUESTION 5

a) Outline the following methods by which non-specific immunity operates;
   i) Physical barriers **(4 marks)**
   ii) Chemical barriers. **(4 marks)**

b) Explain how the body's natural microbial flora helps in preventing the establishment of pathogens. **(3 marks)**

c) Explain the immunological role of the IgE. **(4 marks)**