



**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 immunoglobulin. **(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)**