



TECHNICAL UNIVERISTRY OF MOMBASA

Faculty of Applied & Health Sciences

DEPARTMENT OF ENVIRONMENTAL & HEALTH SCIENCES

DIPLOMA IN COMMUNITY HEALTH & MANAGEMENT (DCHM 14M)

AML 2104: FUNDAMENTALS OF IMMUNOLOGY

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2014

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions. Attempt question **ONE (Compulsory)** and any other **TWO** questions
Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

Question One (Compulsory)

- a) Give examples for the following types of acquired immunity. **(4 marks)**
(i) Natural passive
(ii) Natural active
(iii) Artificial passive
(iv) Artificial active
- b) State the types of immunity. **(2 marks)**
- c) List the organs of immunological apparatus **(4 marks)**
- d) State any **THREE** characteristics of innate immunity **(3 marks)**
- e) Distinguish between:
(i) Fab and Fc fragments **(2 marks)**
(ii) Antigen and antibody **(2 marks)**
- f) Choose from among the following to answer question (i-iv) below:
A. Fab fragment of IgG
B. Fc fragment of IgG
(i) Contain an antigen combining site
(ii) Contain hypervariable regions
(iii) Contain complement binding site
(iv) Is crystallizable
- g) State any **FIVE** determinants of innate immunity **(5 marks)**
- h) Give the types of hypersensitivity **(4 marks)**

Question Two

- a) Choose from the following to answer question (I – viii) below:
A. IgM
B. IgG
C. IgA
D. IgE
(i) Crosses the placenta
(ii) Found in the milk of lactating women
(iii) Binds firmly to mast cells and triggers anaphylaxis
(iv) Is a pentamer
(v) Present in highest concentration in serum
(vi) Contains 10 heavy and 10 light chains
(vii) Present in highest concentration in secretions
(viii) Present in lowest concentration in serum
- b) Discuss the physical barriers involved in innate immunity

Question Three

- a) Using an appropriate illustration, differentiate between primary and secondary immune responses **(10 marks)**
- b) Describe the major functions of macrophages **(5 marks)**

Question Four

- a) Define the term hypersensitivity **(2 marks)**
- b) Discuss mechanisms of type I hypersensitivity **(13 marks)**

Question Five

- a) Outline the following methods by which non-specific immunity operates: **(8 marks)**
- (i) External factors
 - (ii) Internal factors
- b) Explain how the body's natural microbial flora helps in preventing the establishment of pathogens **(3 marks)**
- c) Explain the immunological role of IgE **(4 marks)**