



# THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

**A. M. E. C. E. A**

**MAIN EXAMINATION**

**AUGUST - DECEMBER 2015 TRIMESTER**

**FACULTY OF SCIENCE**

**DEPARTMENT OF BIOLOGY**

**REGULAR PROGRAMME**

**BIO 309: IMMUNOLOGY**

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**Date: DECEMBER 2015**

**Duration: 3 Hours**

**INSTRUCTIONS: Answer Question ONE and ANY other THREE Questions**

- Q1. a) Define the following terms
- i Oponin
  - ii Immunogen
  - iii Hapten
  - iv Antibody
- b) i Define phagocytosis. **(2 marks)**
- ii Explain the process of phagocytosis. **(8 marks)**
- c) Name the factors limiting the growth of organisms. **(4 marks)**
- d) Differentiate between humoral and innate immunity. **(4 marks)**
- e) Explain giving Two examples what adjuvants are. **(2 marks)**
- f) What contributions did the following have in immunology
- i Paul Ehrlich
  - ii Louis Pasteur
  - iii Metchnikoff
  - iv Edward Jenner. **(4 marks)**

- g) List the difference between 1Gg AND 1Gm. **(2 marks)**
- Q2. Explain immunogenicity and list some of the factors enhancing immunogenicity. **(20 marks)**
- Q3. Discuss organs of the immune system. **(20 marks)**
- Q4. Using illustration explain the roles of the following cells in providing immunity  
a) Basophils  
b) Neutrophils  
c) Eosinophils  
d) Lymphocytes  
e) Monocytes **(20 marks)**
- Q5. Explain the following in detail  
i Active immunity **(10 marks)**  
ii Passive immunity. **(10 marks)**

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