



# THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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**MAIN EXAMINATION**

**JANUARY – APRIL 2017 TRIMESTER**

**FACULTY OF SCIENCE**

**DEPARTMENT OF BIOLOGY**

**REGULAR PROGRAMME**

**BIO 309: IMMUNOLOGY**

**Date: April 2017**

**Duration: 2 Hours**

**INSTRUCTIONS: Answer Question ONE and any other TWO Questions**

- Q1. a) Explain briefly activation of the three pathways in a complement system ( 6 marks)
- b) Discuss six factors that affect antibody production ( 6 marks)
- c) Explain six types of vaccines (6 marks)
- d) Give three contraindications to vaccination ( 3 marks)
- e) Discuss two factors that can lead to secondary immunodeficiency ( 4 marks)
- f) Illustrate using a diagram primary and secondary immune response ( 5 marks)
- Q2. Write an essay on the five classes of immunoglobulin ( 20 marks)
- Q3. a) Describe the classes of hypersensitivity considered as immediate (12marks)
- b) Describe any four auto immune diseases ( 8 marks)
- Q4. a) Discuss four types of transplants ( 8 marks)
- b) Describe ways in which graft rejection is prevented (6 marks)

- c) Describe any three tumor associated transplantation antigens ( 6 marks)
- Q5. a) Discuss the role of leucocytes and phagocytic cells in innate immune response (8 marks)
- b) Discuss the role of secondary immune organs (12 marks)

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