



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

JANUARY – APRIL 2015 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF NATURAL SCIENCES (BIOLOGY)

REGULAR PROGRAMME

BIO 106: GENERAL BIOCHEMISTRY I

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Date: April 2015	Duration: 2 Hours
Instructions: Answer Question ONE and any other TWO Questions.	

- Q1. a) Describe the importance of three key non-covalent interactions found in water. **(3 marks)**
- b) Describe the four levels of protein organization. **(8 marks)**
- c) Identify five polysachharides existing naturally and mention their importance in the organism. **(5 marks)**
- d) Describe three glycol conjugates and their roles. **(3 marks)**
- e) Define the term amphipathic and illustrate this concept by use of a micelle. **(3 marks)**
- f) Discuss three membrane transport process across plasma membrane that involve membrane fusion. **(6 marks)**
- g) List two biological proteins synthesized from cholesterol. **(2 marks)**
- Q2. a) Describe five classes of enzymes. **(10 marks)**
- b) Discuss the primary and secondary active transport in plants and animals. **(10 marks)**
- Q3. a) Rachel a 4th year student at CUEA wanted to study the amino acid sequence of a protein she was working on. Outline and explain the key steps and techniques she will most likely apply. **(10 marks)**
- b) Describe the key components of DNA and illustrate how they bond to each other. **(10 marks)**

- Q4. a) Explain how an enzyme works using Michaelis-Menten equation. (10 marks)
- b) Describe the fluid mosaic model of a cell membrane. (10 marks)

END