



# THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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

P.O. Box 62157  
00200 Nairobi - KENYA  
Telephone: 891601-6  
Fax: 254-20-891084  
E-mail: academics@cuea.edu

**MAIN EXAMINATION**

**AUGUST – DECEMBER 2018 TRIMESTER**

**FACULTY OF SCIENCE**

**DEPARTMENT OF BIOLOGY**

**REGULAR PROGRAMME**

**BIO 106: GENERAL BIOCHEMISTRY I**

**Date: DECEMBER 2018**

**Duration: 2 Hours**

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

- Q1. a) Discuss the importance of oligosaccharides found on proteins **(6 marks)**
- b) Draw a well labeled bacteria cell **(5 marks)**
- c) Define the following terms: (1) bioenergetics, (2) endergonic reactions, and (3) exergonic reactions **(3 marks)**
- d) Cellulose, glycogen and starch are made of glucose; explain the difference between them based on their bonding **(3 marks)**
- e) State five biological effects of prostaglandins **(5 marks)**
- f) Explain the two lipoproteins and their function in the body **(5 marks)**
- g) State three coenzymes **(3 marks)**
- Q2. Discuss the glycolysis pathway and account for the total ATP yield **(20 marks)**
- Q3. a) Outline the role of various classes of enzymes based on IUPAC classification and in each give a corresponding example **(10 marks)**
- b) Write an essay on eicosanoids **(10 marks)**

- Q4. a) Discuss conditions under which the proteins denature (8 marks)  
b) Discuss examples of fibrous proteins (12 marks)
- Q5. a) Using diagrams discuss the structural components of nucleic acids (5 marks)  
b) Explain how key information is derived from nucleic acids (8 marks)  
c) Differentiate between nucleoside and nucleotide and give relevant examples for each (7 marks)

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