



# 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)**

**SCHOOL FOCUSED PROGRAMME**

**BIO 100: GENERAL BIOLOGY**

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

- Q1. a) Using relevant examples, differentiate between polysaccharides and monosaccharides. **(2 marks)**
- b) Outline the steps you would follow to obtain a pure enzyme from a bacterial cell. **(6 marks)**
- c) Differentiate between lock and key theory and induced fit theory. **(3 marks)**
- d) Illustrate the role of enzymes in biological reactions. **(4 marks)**
- e) State the location at the following reactions: -  
i) Glycolysis  
ii) Photophosphorylation  
iii) Krebs Cycle
- f) Explain the steps in the scientific method. **(6 marks)**
- g) Differentiate between the following terms: -  
i) Light dependent and light independent reactions of photosynthesis  
ii) Protosystem I and photosystem II  
iii) Coenzyme and cofactor **(6 marks)**
- Q2. Describe the light dependent and light independent reactions in photosynthesis. **(20 marks)**
- Q3. Explain classification, structure and function of proteins. **(20 marks)**

Q4. Compare and contrast prokaryotes and Eukaryotes.

**(20 marks)**

Q5. Explain the theories relevant in modern biology.

**(20 marks)**

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