

**UNIVERSITY OF KABIANGA**

**UNIVERSITY EXAMINATIONS**

**2015/2016 ACADEMIC YEAR**

**SECOND YEAR FIRST SEMESTER EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF SCENCE IN BIOCHEMISTRY**

**COURSE CODE: BIO 210**

**COURSE TITLE: STRUCTURAL BIOCHEMISTRY**

**DATE: 7TH DECEMBER, 2015**

**TIME: 9.00 A.M-12.00 NOON**

**INSTRUCTIONS TO CANDIDATES:**

Answer **ALL** questions in **section A** and any other **TWO** in **section B**.

**SECTION A; 40 MARKS**

**Question One**

1. What is the Haworth projection formula? (3 marks)
2. How do monosaccharides for example glucose cyclize? (5 marks)

**Question Two**

1. What is the basis of lipid classification? (2 marks)
2. Distinguish between steroids and sterols. (2 marks)
3. State the functions of lipoproteins. (4 marks)

**Question Three**

1. Define nucleosides. (1 mark)
2. Using the structure of ribonucleoside, illustrate the type of linkage in purine nucleosides. (4 marks)
3. Name and give the structure of pyrimidines. (3 marks)

**Question Four**

1. Give the structure of amino acids containing hydroxyl group. (3 marks)
2. List the properties of amino acids. (5 marks)

**Question Five**

Explain how enzymes work. (8 marks)

**SECTION B; 30 MARKS**

**Question Six**

Discuss how the monosaccharide units of oligosaccharides are linked and give the structure of the following: Maltose, Sucrose, Lactose and amylopectin. (15 marks)

**Question Seven**

Give the reason why Glycine **is or is not** a chiral compound and give the structures of the following amino acids: Alanine, Serine, Cysteine and Glycine. (15 marks)

**Question Eight**

Discuss how enzymes are classified and the factors affecting their activity. (15 marks)