

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2016/2017**

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOCHEMISTRY.

**SHC 3204: STRUCTURAL BIOCHEMISTRY**

**DATE: DECEMBER, 2016 TIME: 2 HOURS**

**INSTRUCTIONS: -** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Explain the meaning of the following terms. (10 marks)
2. Enantiomer
3. Nucleoside
4. Gluosidic bond
5. Fatty acid
6. Highlight on the properties of living organisms. (5 marks)
7. Illustrate using sketches, the 1,4 1,6 and glycosidic bonds in carbohydrates. (3 marks)
8. Differentiate between oligosaccharides and polysaccharides. (2 marks)
9. Describe the organization of proteins in cells. (4 marks)
10. Demonstrate using a sketch how an amide-bond is formed between amino acids. (3 marks)
11. State the difference between saturated and unsaturated fatty acids giving examples of each. (3 marks)

**QUESTION TWO (20 MARKS)**

Distinguish between passive, facilitated and active transport in membranes. (20 marks)

**QUESTION THREE (20 MARKS)**

Elaborate on the functions of organelles in eukaryotic cells using a well labeled diagram. (20 marks)

**QUESTION FOUR (20 MARKS)**

Describe the structure and organization of nucleic acids in the cell. (20 marks)