

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE OF
BACHELOR OF EDUCATION ARTS**

BIOC 202: BIOCHEMISTRY OF CARBHOHYDRATES

STREAMS: BSC (BIOC) Y2S1

TIME: 2 HOURS

DAY/DATE: MONDAY 03/12/2018

8.30 AM – 10.30 AM

INSTRUCTIONS:

- **Answer Question One and any other Two Question**
- **Do not write on the question paper**

Question One (30 Marks)

- (a) Using glyceraldehydes as an example, illustrate with a diagram what stereoisomer's are. [6 marks]
- (b) Briefly describe the localization of glycosaminoglycans. [5 marks]
- (c) Describe the types of carbohydrates. [5 marks]
- (d) Explain why Cellulose is considered insignificant in human beings. [5 marks]
- (e) Describe the Maillard reaction. [5 marks]
- (f) Outline the functions of glycoproteins. [5 marks]

Question Two (20 Marks)

- (a) Describe the differences between Gram negative and Gram positive cell walls. [10 marks]
- (b) With the aid of a diagram, describe how proteoglycans are formed. [10 marks]

Question Three (20 marks)

- (a) With the aid of a well labelled structures, describe the important disaccharides. [15 marks]
- (b) Explain the role of heparin in the body. [5 marks]

Question Four (20 marks)

- (a) Starch is a polymer consisting of D-glucose units and comes in various forms. Explain [10 marks]
- (b) Explain optical activity using chiral molecules. [10 marks]
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