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**University Examinations 2023/2024**

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

**SHC 3204: STRUCTURAL BIOCHEMISTRY**

**DATE: DECEMBER 2023**

**TIME: 2 HOURS**

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

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**QUESTION ONE (30 MARKS)**

- a) Outline the functions of proteins (5 marks)
- b) Explain the following using chemical structures
  - i. Epimers (3 marks)
  - ii. Anomers (3 marks)
- c) Differentiate the following
  - i. Saturated and non-saturated fatty acid (2 marks)
  - ii. Aldoses and ketoses (2 marks)
- d) Describe the structures of DNA (5 marks)
- e) Describe features of the cell membrane (5 marks)
- f) List five examples of hydrophobic amino acids (5 marks)



MUST is ISO 9001:2015 and



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**QUESTION TWO (20 MARKS)**

Draw the chemical structure of RNA with the following sequence 5`-AUCUCGAG-3`  
(20 marks)

**QUESTION THREE (20 MARKS)**

Discuss the classification of lipids  
(20 marks)

**QUESTION FOUR (20 MARKS)**

Draw the chemical structure of peptide with the following sequence A/g- Gly-Phe-Thr-  
Gln-Cys-Asp –A/g



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