



**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

**MAIN CAMPUS
MAIN EXAMINATIONS**

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

FIRST YEAR SECOND SEMESTER EXAMINATIONS

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

COURSE CODE: SBM 121

COURSE TITLE: STRUCTURE OF BIOMOLECULES

DATE: TUESDAY, 19TH APRIL 2022

TIME: 12:00 – 2:00 P.M.

INSTRUCTIONS TO CANDIDATES

Answer ALL questions in section A and ANY TWO selected from section B

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over. 

SECTION A (SHORT ANSWER QUESTIONS, 40 MARKS)

1. a. Draw and label an eukaryotic cell. (4 marks)
b. Indicate the most abundant molecules in the structures you labeled. (4 marks)
2. Compare the molecular structures of fructose and ribose. (5 marks)
3. Describe how phospholipids define the structure of biomembranes. (5 marks)
4. Make short notes about the organic bases found in nucleic acids. (5 marks)
5. State the Chargaff rule. (2 marks)
6. On the example of glucose, explain conformation differences that can appear on the molecules. (5 marks)
7. Make short notes about sterol lipids. (5 marks)
8. Name the two (2) sulfur containing amino acids and state their roll in proteins. (5 marks)

SECTION B (ESSAY QUESTIONS, 30 MARKS)

9. Discuss how sphingolipids and cis- / trans isomery of fatty acids influence the characteristics of membranes. (15 marks)
10. Discuss the organization levels of DNA (Deoxyribonucleic acid) and state the differences to RNA (Ribonucleic acid). (15 marks)
11. Explain the type of bonds found in proteins and discuss how the genetic code influences the structure of proteins. (15 marks)