



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

**UNIVERSITY EXAMINATION FOR:**

**BACHELOR OF TECHNOLOGY IN MICROBIOLOGY AND**

**BIOTECHNOLOGY**

**ABT 4101: STRUCTURES OF BIOMOLECULES**

**END OF SEMESTER EXAMINATION**

**SERIES: APRIL 2016**

**TIME: 2 HOURS**

**DATE: Pick Date May 2016**

## Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of Choose No questions. Attempt Choose instruction.

**Do not write on the question paper.**

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## Question ONE

**a) Draw the structure of the following biomolecules**

i) Glucose (2 marks)

ii) Fructose (2 marks)

iii) Triacylglycerols (2 marks)

iv) Adenine (2 marks)

**b) Define the following terms and give two (2) examples in each.**

i) Aldose sugars (2 marks)

ii) Heteropolysaccharides (2 marks)

iii) Essential and non essential amino acids (2 marks)

- iv) Glycosidic bond (2 marks)
- c) Name four amino acids that are both glucogenic and ketogenic. (2 marks)
- d) Give with an example the three classes of carbohydrates. (3 marks)
- e) State four biomedical functions of the glycosaminoglycans (4mks)
- f) Describe the general structure of all amino acids (5mks)

### Question TWO

- (a) Describe monosaccharide derivatives and their biomedical roles. (10 marks)
- (b) Describe the four levels of proteins. (10 marks)

### Question THREE

Outline the classification of amino acids and state their respective biomedical importance. (20 marks)

### Question FOUR

Describe the classification and biomedical importance of Lipids. (20 marks)

### Question FIVE

- (i) Name five types of Pyrimidines, state their occurrences and draw their structures. (10 marks)
- (ii) Outline the biomedical functions of Pyrimidines. (10marks)