



TECHNICAL UNIVERSITY OF MOMBASA

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.

Question ONE

a) Draw the structure of the following biomolecules

- | | |
|--------------------|-----------|
| i) Galactose | (2 marks) |
| ii) Sucrose | (2 marks) |
| iii) Maltose | (2 marks) |
| iv) Cytosine | (2 marks) |
| v) Triacylglycerol | (2 marks) |

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

- | | |
|---------------------------------|-----------|
| i) Homopolysaccharides | (2 marks) |
| ii) Non- reducing disaccharides | (2 marks) |

iii) Isomers (2 marks)

c) Outline any 3 examples of polysaccharides (3mks)

d) State four biomedical uses of glycerol (4mks)

e) Mention the occurrence and clinical importance of Caffeine (2mks)

f) Explain the role of carbohydrate in sparing the usage of proteins as a source of energy (5 mks)

Question TWO

Describe the structures and the biomedical importance's of the glycosaminoglycans. (20 marks)

Question THREE

(a) Name five types of purines, state their occurrences and draw their structures. (15 marks)

(b) Outline the biomedical functions of Purines (5 marks)

Question FOUR

(a) Outline biomedical functions of Lipids and carbohydrates. (10 marks)

(b) Describe the four levels of proteins (10 marks)

Question FIVE

(a) Give the biochemical functions of nucleotides. (7 marks)

(a) Name the types of RNA and their functions. (5 marks)

(b) State different conformational states of DNA structures and their characteristics (8 marks)