



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES
DEPARTMENT OF PURE AND APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:
DIPLOMA IN ANALYTICAL CHEMISTRY
(DAC YEAR 2 / SEMESTER 1)
ABT2103 INTRODUCTION TO BIOCHEMISTRY
END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2024

TIME: 2 HOURS

DATE: Pick Date **December** 2024

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of FIVE Question(s). Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Mobile phones are NOT allowed in the examination room

SECTION A (Answer all the Questions)

(30 Marks)

QUESTION ONE

- a) Define the following
 - I. Amino acids. (2 marks)
 - II. Lipids. (2 marks)
- b) Give the building blocks of proteins. (2 marks)
- c) Outline the four major types of biomolecules. (4 marks)
- d) Briefly explain the primary function of carbohydrates. (4 marks)
- e) Outline the two main types of nucleic acids. (4 marks)
- f) Briefly describe the composition of carbohydrates. (4 marks)
- g) Outline the functions of proteins. (4 marks)
- h) Briefly describe the functions of lipids. (4 marks)

SECTION B: Choose Any TWO Questions (30 Marks)

QUESTION 2

- a) Classify Monosaccharides based on the number of carbon atoms: (4 marks)
- b) Briefly describe the functions of enzymatic proteins. (5 marks)
- c) Describe functions of Monosaccharides (6 marks)

QUESTION 3

- a) Describe the structure and function of the following
 - I. Transport Proteins. (7 marks)
 - II. Regulatory Proteins. (8 marks)

QUESTION 4

- a) Briefly describe categories of lipids based on the structures (7 marks)
- b) Describe functions of lipids based on the structures. (8 marks)

QUESTION 5

Discuss the structure and functions of DNA (Deoxyribonucleic Acid) (15 marks)