



KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE AWARD OF THE
DEGREE OF BACHELOR OF SCIENCE IN COMMUNITY HEALTH AND
DEVELOPMENT
SECOND SEMESTER, 2021/2022
(FEBRUARY - JUNE, 2022)

BIOC 102: BASIC BIOCHEMISTRY

STREAM: Y1 S2

TIME: 3 HOURS

DAY: WEDNESDAY, 2:00 – 5:00 P.M.

DATE: 18/05/2022

INSTRUCTIONS

- 1. Do not write anything on this question paper.*
- 2. Answer ALL the questions in section A and B, in section C, answer any ONE question.*

SECTION A (40 MARKS)

- 1 a) What are the chemical constituents of carbohydrates? [3 marks]
b) What is the major difference between amylase and amylopectin? [2 marks]
2. a) Briefly describe the function of mitochondria in cells [3 Marks]
b) The cell wall of bacterial cells is made of? [2marks]
3. a) What enzymes that join together the joining of two substrates called? [2 marks]
b).What are the functions of nucleotides [3 marks]
4. a) Name three different diseases caused by a disorder in carbohydrate metabolism [3 marks]
b).Name two diseases caused by abnormal accumulation of complex lipids [2 marks]

5. a) List three functions of glycosaminoglycans [3 marks]
b) Give 2 examples of epimers [2 marks]
6. a) List three functions of lipids in the body [3 Marks]
b).Which model explains the mode of enzyme action? [2 marks]
- 7 a). Describe the activity of metal ions in enzymes activity [3 marks]
b).Define a prosthetic group [2 marks]
8. a) Explain three factors that affect enzyme activity in cells [3 marks]
b).Explain how enzyme speed up biological reactions [2 marks]

SECTION B (40 MARKS)

ANSWER ALL QUESTIONS

1. Explain the importance of phospholipids [10 marks]
2. State the functions of the following organelles in the body [10marks]
a) Golgi apparatus
b) Ribosomes
c) Nucleus
d) Plasma membrane
3. State and explain the importance of a chiral carbon in a monosaccharide [10 marks]
4. Explain the occurrence of lipid storage diseases in humans, clearly stating the symptoms and preventive methods [10 Marks]

SECTION C (20 Marks)

Answer any ONE question

1. Describe how a diet rich in carbohydrates is digested and absorbed in the blood of a human being [20 marks]
2. State and explain three methods used by cells in the absorption of biomolecules into the lining of the mucosal cells of the small intestine [20 marks]