

KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

SECOND YEAR EXAMINATION FOR THE AWARD OF THE
DEGREE OF BACHELOR OF SCIENCE BIOCHEMISTRY
FIRST SEMESTER 2022/2023
[SEPTEMBER-DECEMBER, 2022]

BIOC 204: BASIC BIOCHEMISTRY

STREAM: Y2S1

TIME: 2 HOURS

DAY: TUESDAY, 9:00 – 11:00 AM

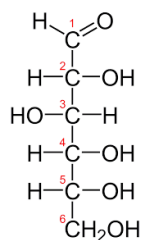
DATE: 20/12/2022

INSTRUCTIONS

- 1. Do not write anything on this question paper.**
- 2. Answer ALL the questions in Section A and any TWO in Section B.**

SECTION A (40 MARKS)

- Using relevant examples, describe the classification of components of the cytoplasm. (6 marks).
- Describe the role of water in biological systems. (6 marks)
- Define “Haworth projection formula”. Highlight the differences between α - and β -isomers. Use illustrations where necessary. (6 marks)
- Below is a Fischer projection of a given monosaccharide. Name the sugar and give the structure and systematic name of the disaccharide formed when it reacts with galactose. (5 marks)



- Using relevant examples, describe classification of polysaccharides. (6 marks)

6. What is an amino acid? With a relevant example in each case describe the major classes of amino acids. (7 marks)

7. Describe briefly the levels of organization of proteins. (4 marks)

SECTION B (30 MARKS)

8. With the use of illustrations, discuss the glycolytic cycle highlighting the steps and enzymes involved. (15 marks)

9 a). Elucidate factors affecting enzyme activity. (5 marks)

b). Discuss enzyme action as proposed by Michaelis and Menten. (10 marks)

10. What is photosynthesis? Describe the C₃ type of photosynthesis. (15 marks)