



**KISII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**

**SECOND YEAR EXAMINATION FOR THE AWARD OF THE**  
**DEGREE OF BACHELOR OF SCIENCE BIOCHEMISTRY**  
**/LABORATORY SCIENCE**  
**FIRST SEMESTER 2021/2022**  
**(FEBRUARY-JUNE, 2022)**

**BIOC 204: BASIC BIOCHEMISTRY**

**STREAM: Y2 S1**

**TIME: 2 HOURS**

**DAY: THURSDAY, 12:00 PM – 2:00 PM**

**DATE: 05/05/2022**

**INSTRUCTIONS:**

- 1. Do not write anything on this question paper.**
- 2. Answer Section A (Compulsory) and any other TWO Questions in section B.**

**SECTION A: ANSWER ALL QUESTIONS (40 MARKS)**

1. Elaborate the classification of carbohydrates citing an example for each class. (5 marks)
2. Outline the basis for amino acid classification giving examples for each group. (5 marks)
3. With relevant examples, outline the difference in classification of nitrogenous bases. (5 marks)
4. Describe the events that revolve around the urea cycle. (5 marks)
5. Write notes on the classification of lipids citing relevant examples. (5 marks)
6. What is meant by a Link reaction? Elaborate the process with an illustration. (5 marks)
7. Outline the classification of proteins while citing examples for each group. (5 marks)

8. Define the following terms; (5 marks)
- a) Mutarotation
  - b) Epimerism
  - c) Carbonyl group
  - d) Oxidative phosphorylation
  - e) Oxidoreductases

**SECTION B: ANSWER ANY TWO QUESTIONS (30 MARKS)**

9. With an illustration, discuss the events leading to the synthesis of pyruvate (15 marks)
10. Discuss in detail the events leading to the synthesis of NADPH, ATP and glucose in photosynthesis. (15 marks)
11. a. Discuss the mechanism of action of enzymes (10 marks)
- b. State the factors affecting enzymatic activity (5 marks)