



KENYATTA UNIVERSITY
EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
(ANIMAL HEALTH AND PRODUCTION)
KAS 108: BIOCHEMISTRY I

2ND SEMESTER 2020/2021

TIME: 2 HOURS

INSTRUCTIONS:

Answer ALL Questions from Section A and Any Other TWO Questions from Section B. Within a Section, questions carry equal marks. Illustrate your answer with diagrams and give examples where appropriate.

SECTION A: Answer ALL Questions (5 marks each: total 40 marks)

1. Illustrate the structures of two named hexose sugars. **(5 marks)**
2. a) State **FOUR** major types of biomolecules occurring in animals. **(2 marks)**
b) State **THREE** fundamental characteristics of biomolecules. **(3 marks)**
3. Describe briefly the general structure and uses of two named polysaccharides in animals. **(5 marks)**
4. State FIVE tissues of organs where lipids are located in an animal body and their roles in each location. **(5 marks)**
5. Explain the following terms as they relate to fatty acids **(1 mark each)**
 - a. Polarity
 - b. Saturated
 - c. Unsaturated
 - d. Cis fatty acid
 - e. Trans fatty acid

6. a) Describe the basic structure of an amino acid. (3 marks)
b) Illustrate the formation of a peptide bond. (2 marks)
7. a) Explain THREE major differences between fats and oils. (3 marks)
b) Fats are a major source of metabolic water. Explain this statement. (2 marks)
8. Majority functions in an animal cell are done by proteins. Qualify this statement. (15 marks)

SECTION B: Answer Any TWO Questions (15 marks each: total 30 marks)

9. Explain one similarity and TWO major differences between the following: (3 marks each)
- a. Starch and Glycogen
 - b. Glyceraldehyde and Dihydroxyacetone
 - c. Glycerolipids and Glycerophospholipids
 - d. Pyruvate and Pyruvic acid
 - e. Chitin and Cellulose
10. Explain how the chemical structure of water leads to its unique solvent characteristics and outline its major biological roles.
11. Discuss the digestion and assimilation of proteins in animals.