



KENYATTA UNIVERSITY

**SUPPLEMENTARY/SPECIAL EXAMINATION 2020/2021 EXAMINATION FOR THE
DEGREE OF BACHELOR OF SCIENCE
(ANIMAL HEALTH AND PRODUCTION)**

KAS 108: BIOCHEMISTRY I

OCTOBER, 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. Name five compartments in a eukaryotic animal cell and one biomolecule in that compartment.
2. State five functions of protein in animal cells.
3. State five major functions of lipids and five tissues or organs where lipids occur in animals.
4. Name two monosaccharide carbohydrates and use a diagram to illustrate the chemical structure of each.
5. Illustrate the general structure of a fatty acid.
6. a) Describe the structure of an amino acid.
b) Describe briefly the primary structure of a protein.
7. State five major differences between fats and oils.
8. Name the major types of nucleic acids and their location in animal cells.

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

9. a) Name three volatile fatty acids. [3 marks]
b) Name two sources of fats and two sources of proteins in a ruminant diet. [4 marks]

INVOLVEMENT IN ANY EXAMINATION IRREGULARITY SHALL LEAD TO DISCONTINUATION

- c) Explain how a ruminant digest and the role of volatile fatty acids in the nutrition of ruminant animals. [8 marks]
10. a) State five types of biomolecules and their major role in animals. [5 marks]
b) Explain the fundamental characteristics of biomolecules. [10 marks]
11. State the major steps involved in catabolism of a glucose molecule in a cell and show how cellular energy is generated. [15 marks]