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University Examinations 2023/2024

FIRST YEAR FIRST SEMESTER EXAMINATION FOR THE DIPLOMA IN ANIMAL
HEALTH AND PRODUCTION

SHV 2200: BIOCHEMISTRY

DATE: DECEMBER 2023

TIME: 1½HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (30 MARKS)

- a) Define the following terms (4 marks)
- i. Trace minerals
 - ii. Histones
 - iii. Waxes
 - iv. Globular proteins
- b) List three chemical properties of amino acids (3 marks)
- c) Explain how pH is regulated by a buffer (2 marks)
- d) Distinguish between the following terms
- i. Acid and base (2 marks)
 - ii. Stereoisomer and enantiomer (2 marks)
 - iii. Ionic bond and covalent bond (2 marks)



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- e) State the symptoms of fatty acid deficiency (4 marks)
- f) Explain the formation of a peptide bond (2 marks)
- g) Give the function of the following minerals (3 marks)
- i. Zinc
 - ii. Iron
 - iii. Sodium
- h) State one example of each of the following (2 marks)
- i. Water soluble vitamin
 - ii. Fat soluble vitamin
- i) Draw the structure of valine and leucine amino acids (4 marks)

QUESTION TWO (15 MARKS)

- a) Discuss the relevance of biochemistry in relation with other fields (15 marks)

QUESTION THREE (15 MARKS)

- Discuss the roles of carbohydrates in the living organisms (15 marks)

QUESTION FOUR (20 MARKS)

- a) Compare and contrast the deoxynucleic acid (DNA) and ribonucleic acid (RNA) (15 marks)

