



1ST SEM. 2007/2008

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: **BACHELOR OF SCIENCE IN
AGRONOMY; BACHELOR OF
SCIENCE IN ANIMAL SCIENCE;
BACHELOR OF SCIENCE IN FOOD
SCIENCE, NUTRITION AND
TECHNOLOGY; AND BACHELOR
OF SCIENCE IN HORTICULTURE
YEAR II**

COURSE CODE: **APH 203**

TITLE OF PAPER: **BIOCHEMISTRY**

TIME ALLOWED: **TWO (2) HOURS**

INSTRUCTIONS: **ANSWER ANY 4 QUESTIONS**

**THIS PAPER MAY NOT BE OPENED UNTIL THE CHIEF
INVIGILATOR HAS GRANTED PERMISSION.**

QUESTION 1

Describe and illustrate the following:

- a) Eicosanoids (14 Marks)
- b) Hydrogen bonding of water molecules (11 Marks)

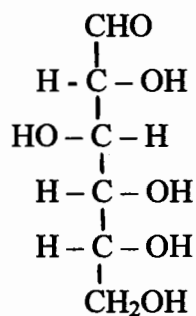
QUESTION 2

Using structures to illustrate your answers explain the major differences between the following:

- a) Glycosidic bond and peptide bonds (8 Marks)
- b) Reducing and non reducing sugars (9 Marks)
- c) Nucleoside and Nucleotide (8 Marks)

QUESTION 3

Study the structure of the biomolecule shown below and answer the following questions:



- a) Identify the biomolecule (1 Marks)
- b) Illustrate and identify the tautomer of the biomolecule (4 Marks)
- c) Illustrate and identify the amino sugar of the biomolecule (4 Marks)
- d) Illustrate and identify the alditol of the biomolecule (4 Marks)
- e) Illustrate and identify the anomeric pair of the biomolecule (6 Marks)
- f) Illustrate and identify the disaccharide made by the biomolecule and its tautomer. (6 Marks)

QUESTION 4

a). Briefly discuss three advantages of using enzymes as biological catalysts. (9 Marks)

b). Discuss how the following may affect enzymic reaction rate:

- i) temperature
- ii) pH
- iii) Enzyme concentration
- iv) Substrate concentration (16 Marks)

QUESTION 5

Using structures to support your answer, briefly describe two examples of:

- a) Unsaturated fatty acids (5 Marks)
- b) Sterol lipids (5 Marks)
- c) Non protein amino acids (5 Marks)
- d) Structural polysaccharides (5 Marks)
- e) Water soluble vitamins (5 Marks)

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: BACHELOR OF SCIENCE IN ANIMAL
SCIENCE YEAR II

COURSE CODE: APH 204

TITLE OF PAPER: INTRODUCTION TO ANIMAL SCIENCE

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS.

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GRANTED BY THE INVIGILATOR**

QUESTION 1

Give a full discussion on how the harsh weather conditions in the arid and semi-arid regions of Africa affect livestock productivity. (25 marks)

QUESTION 2

The Government of Swaziland has encourage offtake of cattle from Swazi Nation Land (S.N.L) pasture in order to improve feed resources. What are some of the projects that the government introduced to reduce stocking rate on S.N.L. (25 marks)

QUESTION 3

Pick any livestock species and describe facilities and equipment you would expect to find on a farm raising that livestock species. (25 marks)

QUESTION 4

Why are the management techniques we performed during practicals important to livestock production? Pick 4 techniques and discuss them. (25 marks)

QUESTION 5

- a) Why is record keeping essential in livestock production? (5 marks)
- b) What records are commonly kept in livestock operations, and what do these records measure? (20 marks)