1ST SEM. 2008/2009

UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION PAPER

PROGRAMME: B. Sc. AGRON.; B.Sc. ANIMAL SCIENCE II; B.Sc HORT.II & B.Sc. FSNT 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

a) Using structures to illustrate your answer, describe the following:-

i. Two basic amino acids (6 Marks)

ii. Two non-essential amino acids (6 Marks)

b) Explain and illustrate the major differences between steroid hormones and protein hormones. (13 Marks)

QUESTION 2

a) Describe the metabolic roles of the following parts of the cell: (10 Marks)

i) the mitochondrion

ii) the cytosol

iii) the rough endoplasmic reticulum

iv) the smooth endoplasmic reticulum

v) the cell membrane.

b) Define water activity, and explain its significance in food technology (15 Marks)

QUESTION 3

Using structures to illustrate your answer, explain the following and state their natural sources. Give one example in each case:

a) Storage polysaccharides (5 Marks)

b) Sugar acids (5 Marks)

c) Prostaglandins (5 Marks)

d) Essential fatty acids (5 Marks)

e) Ribonucleosides (5 Marks)

QUESTION 4

Using structures to illustrate your answer, discuss cholesterol. (25 Marks)

QUESTION 5

Using structures to illustrate your answers briefly discuss the following:

a) Riboflavin (15 Marks)

b) Retinol (10 Marks)

c) Describe two types of vitamin D (10 Marks)

QUESTION 5

a) Define the following (10 Marks)

i) Iso electric point

ii) Water activity

iii) Amphipathic substances

iv) Aldoses

v) Sugar epimers

b) Discuss enzyme inhibitors. (15 Marks)