UNIVERSITY OF SWAZILAND
FACULTY OF AGRICULTURE

DEPARTMENT: ANIMAL PRODUCTION AND HEALTH

Final Examination (Semester I, 2004/5)

B. Sc. Agriculture and B. Sc. Agriculture Education Year IV (APH Option)

COURSE CODE: **APH 406**

TITLE OF PAPER: **Biochemistry and Nutrition**

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). Glycolysis is a sequence of reactions that convert glucose to pyruvate with concomitant production of a relatively small amount of ATP. List the ten reactions involved in glycolysis and the enzymes that catalyse them. **(20 marks)**

b). Discuss the fate of pyruvate in eukaryotic cells? **(5 marks)**

QUESTION 2

a). Define gluconeogenesis and explain its regulation. **(5 marks)**

b). Outline the reactions and enzymes that are unique to gluconeogenesis. **(20 marks)**

QUESTION 3

a). Define digestible crude protein (DCP). The use of DCP for evaluating feed proteins has been largely abandoned. What are the drawbacks of this measure of protein quality? **(10 marks)**

b). Discuss and illustrate the fate of dietary crude protein in a ruminant animal. **(15 marks)**

QUESTION 4

a). Explain the chemostatic and thermostatic theories in relation to short-term regulation of voluntary feed intake in monogastric animals. **(10 marks)**

b). Identify and discuss the factors that affect feed intake in ruminants? **(15 marks)**

QUESTION 5

Explain how the following disorders develop in livestock and suggest ways of preventing and/or treating them:

i). Ketosis

ii). Acidosis

iii). Post-parturient pariesis

iv). Bloat

v). Urea poisoning **(25 marks)**