
**1ST SEM. 2005/2006** **PAGE 1 OF 2**

# UNIVERSITY OF SWAZILAND

## FINAL EXAMINATION PAPER

| | |
|---|---|
| **PROGRAMME:** | **B. Sc. AGRICULTURE YEAR IV, APH OPTION** |
| **COURSE CODE:** | **APH 406** |
| **TITLE OF PAPER:** | **BIOCHEMISTRY AND NUTRITION** |
| **TIME ALLOWED:** | **TWO (2) HOURS** |
| **INSTRUCTIONS:** | **ANSWER ANY 5 QUESTIONS.** |

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

**QUESTION 1**

Explain and illustrate the catabolism of glucose to pyruvate in the cytosol of the pig. **(20 Marks)**

**QUESTION 2**

Discuss and illustrate the anabolism of proteins from metabolites of carbohydrate catabolism. **(20 Marks)**

**QUESTION 3**

Discuss the mechanisms used by the cell to carry out different anabolic and catabolic processes at the same time. **(20 Marks)**

**QUESTION 4**

Identify any FOUR nutritional or metabolic disorders common in livestock. Outline the causes of these conditions and describe their development and diagnosis. Suggest ways of preventing and/or treating them. **(20 Marks)**

**QUESTION 5**

Write short notes on the following:

a. Metabolizable protein system
b. Metabolism of volatile fatty acids
c. Chemostatic regulation of voluntary feed intake
d. Fate of dietary nitrogen in ruminants **(20 Marks)**

**QUESTION 6**

i. The Kjeldahl procedure is used to determine the total nitrogen content of various feedstuffs in the laboratory. Give a step-by-step description of this procedure paying attention to the role of reagents used. **(15 Marks)**

ii. How would you estimate crude protein content from the total nitrogen content obtained in (i) above? What are the limitations of this estimation? **(5 Marks)**