



**UNIVERSITY OF SWAZILAND**

**1<sup>ST</sup> SEM. 2007/2008**

**SUPPLEMENTARY EXAMINATION PAPER**

**PROGRAMME:** **DIPLOMA IN AGRICULTURE AND  
DIPLOMA IN AGRICULTURE  
EDUCATION YEAR III**

**COURSE CODE:** **APH 301**

**TITLE OF PAPER:** **NUTRITION, FEEDS AND FEEDING**

**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**

Identify and describe a laboratory procedure/method you would use to determine the total nitrogen content of a feedstuff. Highlight the role of the reagents used in this method. What are the limitations associated with the use of this method?

**(25 Marks)**

**QUESTION 2**

a) Give a detailed outline of the partition of food energy in an animal. All energy losses must be indicated. **(15 Marks)**

b) Compare and contrast digestion of carbohydrates in ruminants and non-ruminants. Answer must be in table format. **(10 Marks)**

**QUESTION 3**

a) Discuss the fate of non-protein nitrogen after consumption by a ruminant animal. **(15 Marks)**

b) Discuss the factors that affect the efficient utilization of non-protein nitrogen in the rumen? **(10 Marks)**

**QUESTION 4**

Discuss the macro minerals, calcium and phosphorus, under the following headings:

a) Source **(5 Marks)**

b) Function **(10 Marks)**

c) Deficiency symptoms **(10 Marks)**

**QUESTION 5**

Write short notes on the following:

a) Diagnosis of mineral deficiency

b) Fat soluble vitamins

c) Net protein retention

d) Gross protein value

e) Maintenance energy

**(25 Marks)**