



**UNIVERSITY OF SWAZILAND
SUPPLEMENTARY EXAMINATION PAPER**

PROGRAMME: B.Sc. IN AGRICULTURAL EDUCATION II
B.Sc. IN ANIMAL SCIENCE II

COURSE CODE: APH 205

TITLE OF PAPER: NUTRITION, FEEDS AND FEEDING

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY 4 QUESTIONS.

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GRANTED BY THE CHIEF INVIGILATOR**

QUESTION 1

- a. Protein available to ruminants for use can be classified into three main categories. Briefly discuss these categories and include their importance in ruminant nutrition. **(14 marks)**
- b. Non-protein nitrogen (NPN) sources are capable of meeting the protein requirements of ruminants to a certain extent as does a protein source.
- i. What are the differences between these sources? Give example of each source. **(6 marks)**
 - ii. Explain how do NPN sources meet protein requirements of ruminants? **(5 marks)**

QUESTION 2

Write short notes on the following:

- i. Metabolic liveweight **(3 marks)**
- ii. Hypervitaminosis **(5 marks)**
- iii. Rumen fill **(4 marks)**
- iv. Endogenous urinary nitrogen **(3 marks)**
- v. *Ad libitum* feeding **(4 marks)**
- vi. Feed additives **(6 marks)**

QUESTION 3

Phosphorus is a major mineral that is always included during the formulation of pig diets to support metabolic processes and bone development. However, the inclusion of this mineral can have adverse effects on the environment. In what ways do the inclusion of this mineral threaten the environment? **(25 marks)**

QUESTION 4

- a. Commercial dairy farmers always supplement their lactating herd with dairy meal. However, it is critical that the ratio of dairy meal to roughage is observed during feeding.
- i) Why should the lactating dairy herd be fed with dairy meal? **(5 marks)**
- ii) Give the ideal ratio of these feeds during feeding and briefly explain why it is critical to observe it. **(8 marks)**
- b. A broiler producer raising about a thousand chickens runs short of water a week after chicks' arrival and plans to solve the problem three days later. Is this decision appropriate? Justify your answer. **(12 marks)**

QUESTION 5

As a result of animal feed shortages on Swazi Nation Land, grazing animals experience repeated live weight losses and consequently they reach maturity later than expected. As an extension officer how would you address this problem? **(25 marks)**