UNIVERSITY OF SWAZILAND

FINAL 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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QUESTION 1

Determining chemical composition in animal feeds is not an absolute measure of nutritive value of feeds. Give a detailed outline of one way of further evaluating feeds through feeding of animal. **(25 marks)**

QUESTION 2

a. The anatomy of ruminants is one striking feature that enables them to improve poor quality feeds. Explain briefly how they are able to achieve this and give an example of a poor quality feed. **(15 marks)**

b. In ruminant nutrition, sheep are mostly used during *in vivo* trials as a model for ruminants. Give reasons why a sheep is mostly used opposed to cattle and goats. Also explain the importance of the sex of the animal during these studies. **(10 marks)**

QUESTION 3

a. A feedlot farmer formulating her rations on farm approaches you on how much lipids she should include during ration formulation for her beef herd. Please advise her on the advantages and disadvantages of lipids inclusion in ruminants' diets. **(15 marks)**

b. The provision of good quality protein in ruminants' diet is considered as a waste. Discuss the basis of this statement. How can good quality protein be provided to ruminants without being wasted? **(10 marks)**

QUESTION 4

a. Foraging ruminants produce copious amount of saliva. Discuss the nutritional importance of saliva in ruminant nutrition. **(8 marks)**

b. Write short notes on the following:

i. Microbial protein synthesis **(5 marks)**

ii. Compensatory gain **(4 marks)**

iii. Volatile fatty acids **(5 marks)**

iv. Basal metabolism **(3 marks)**

QUESTION 5

In a nitrogen balance trial using sheep, urea was utilised as a protein supplement to low quality grass hay. Even though this trial was carried out during the winter season, all the sheep excreted about ten litres of urine per day.

a. Fully discuss the possible cause of this abnormality and its implication in the protein nutrition of the animal. **(12 marks)**

b. Explain briefly how this abnormality can be corrected. **(5 marks)**

c. Briefly discuss measures that can be undertaken to protect proteins from rumen degradation? **(8 marks)**