UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION PAPER

PROGRAMME:	**B. Sc. ANIMAL SCIENCE II** **B. Sc. AGRICULTURAL EDUCATION II**
COURSE CODE:	**APH 205**
TITLE OF PAPER:	**NUTRITION, FEEDS AND FEEDING**
TIME ALLOWED:	**TWO (2) HOURS**
INSTRUCTIONS:	**ANSWER ALL QUESTIONS**

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

QUESTION 1

a. The Proximate analysis was devised more than one hundred years ago and it provides valuable information during chemical analysis of animal feeds. However, this system has certain limitations. Briefly discuss the limitations of this system. **(15 marks)**

b. In farm animals, nutrients are absorbed from the small intestines through different mechanisms. Describe the *carrier transport system* in which certain nutrients are absorbed in non-ruminants. **(10 marks)**

QUESTION 2

a. Fully discuss the digestion of dietary proteins in broiler chickens. **(12 marks)**

b. When formulating feedlot ration, what would you take into consideration in order to meet the energy requirement of the beef herd? **(10 marks)**

c. A feed containing 20% cellulose was fed to growing goats and pigs. Which of these animals efficiently utilised this feed and why? **(3 marks)**

QUESTION 3

a. Discuss briefly how animals are prepared for a digestibility trial. **(8 marks)**

b. Discuss briefly how feeding levels affect digestibility of feeds in ruminants. **(7 marks)**

c. A steer consumed 12 kg of rye grass that has 60% dry matter (DM) and defecated 3 kg faeces that has 40% DM. What is the DM digestibility (DMD) of the feed expressed as a **percent** and as a **coefficient**? **(7 marks)**

d. Define what a feed additive is and give an example. **(3 marks)**

QUESTION 4

a. In terms of nutritional value, explain briefly which species remains high in nutritive value with maturity between a C_4 and C_3 pasture species? **(5 marks)**

b. Outline the disadvantage of the following techniques used to determine digestibility:

i) *In vivo* technique **(3 marks)**

ii) *In situ* technique **(2 marks)**

iii) *In vitro* technique **(2 marks)**

c. A sheep consumed 1.8 kg of brewer's grains dry matter (DM) having energy content of 19.0 MJ/kg and defecated 0.65 kg faeces DM having energy content of 8 MJ/kg. Calculate the following:

i) Apparent digestibility of energy of brewer's grain **(4 marks)**

ii) Digestible energy content of brewer's grain DM **(1 mark)**

d. Briefly outline the advantages of using computer programme for ration formulation. **(8 marks)**