UNIVERSITY OF SWAZILAND

2ND SEM. 2007/2008

FINAL EXAMINATION PAPER

PROGRAMME: B.Sc. in Animal Science Year II

COURSE CODE: APH 205

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

The proximate analysis, developed in Germany over a century ago, is intended for routine description of feedstuffs. Identify the six components that make up this feed analysis system and present the methodology used to determine them. Highlight the limitations for each method. **(25 Marks)**

QUESTION 2

Explain the major digestive activities/functions of the following gastro-intestinal organs:

a) Mouth **(3 Marks)**
b) Reticulorumen **(10 Marks)**
c) Stomach/abomasum/proventriculus **(4 Marks)**
d) Gizzard **(3 marks)**
e) Small intestine **(5 Marks)**

QUESTION 3

Write short notes on the following:

a) Indicator method of estimating digestibility **(5 marks)**
b) Factors affecting water intake in livestock **(8 Marks)**
c) Protein quality in diets of ruminant livestock **(6 Marks)**
d) Use of non-protein nitrogen (NPN) in ruminants **(6 Marks)**

QUESTION 4

Discuss Vitamin D nutrition under the following headings:

a) Source **(5 Marks)**
b) Functions **(5 Marks)**
c) Metabolism **(5 Marks)**
d) Deficiency symptoms **(5 Marks)**
e) Prevention and treatment of deficiency **(5 Marks)**

QUESTION 5

a) Write short notes on the factors that affect the digestibility of livestock feeds. **(10 Marks)**

b) In a digestibility trial, how do you calculate the digestibility coefficient? **(3 Marks)**

c) What are the limitations of the digestibility coefficient? **(2 Marks)**

d) Using both the algebraic and Pearson square methods, balance a 100-kg diet so that it contains 16% crude protein using sorghum grain (9.5% CP) and soyabean meal (49% CP). **(10 Marks)**