



FACULTY OF LIFE SCIENCES
DEPARTMENT OF ANIMAL SCIENCE

BACHELOR OF SCIENCE HONOURS DEGREE IN ANIMAL SCIENCE

Applied Animal Nutrition (LAS 4203)
SEMESTER 2 EXAMINATION
August 2021

Time Allowed: 3 hours
Special Requirements: Calculator
Examiner's Name: R. Ndlovu

Instructions to Candidates:

1. The paper consists of six questions, answer **ALL** questions in **Section A** and **ANY TWO** in **Section B**.
2. Marks for each question are shown in brackets. Where a question has subdivisions, the marks for each subdivision are given.
3. Illustrate your answer, where applicable, with large clearly labelled diagrams.

MARK ALLOCATION

QUESTION	MARKS
SECTION A	60
SECTION B	40
TOTAL ATTAINABLE MARKS	100

This paper consists of three printed pages including this one.

Copyright: Gwanda State University, 2021

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

Question 1

- a) Define the following terms as used in animal nutrition:
- i) As-fed (1)
 - ii) Feeding standards (1)
 - iii) Purified diet (1)
 - iv) Medicated feed (1)
 - v) Ration (1)
- b) Distinguish between digestion and digestibility. (2)
- c) The small intestines are the primary site of digestion of several nutrients. Describe the special anatomical features of the small intestine helping in this process? (8)

Question 2

- a) Define the term 'least cost formulation'. (3)
- b) Using Pearson square method, prepare a 100 kg of diet containing 12% protein from a mixture of soybean meal (SBM) and tankage (3 parts SBM and 1 part tankage) with corn. Assume corn to contain 9.0% protein, SBM to contain 44% protein and tankage to contain 60% protein. (15)
- c) Assume alfalfa silage analysed 7% crude protein on as-fed basis and contain 40% dry matter. What percentage crude protein would the alfalfa contain when expressed on a dry matter basis? (2)

Question 3

Discuss roughage processing methods aimed at improving poor quality roughages. (25)

SECTION B: ANSWER ~~ANY ONLY~~ TWO QUESTIONS IN THIS SECTION

Formatted: Underline

Question 4

Gut microbiota has both beneficial and harmful effects on animals. Discuss. (20)

Question 5

a) Compare and contrast metabolism trial and digestion trial. (10)

b) State and explain **any two factors** that affect total digestible nutrient (TDN) value of feed. (4)

c) What are the weaknesses of the TDN system? (6)

Question 6

a) Define the term “anti-nutritional factors”. (2)

b) Discuss the importance of tannins in animal nutrition. (10)

c) Discuss **any two methods** that can be used to reduce the effects of anti-nutritional factors in feeds. (8)

END OF QUESTION PAPER

Copyright: Gwanda State University, 2021