AFRICA UNIVERSITY
A United Methodist-Related Institution

"Investing in Africa's future"

COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES

NAAS301: APPLIED ANIMAL NUTRITION

END OF SECOND SEMESTER FINAL EXAMINATIONS

AUG/DEC 2021

LECTURER: Dr. S. Chakeredza

DURATION: 5 HRS

INSTRUCTION

Choose and Answer **ONE** question Only

All Questions Carry Equal Marks (100)

Question 1

1. Two key analytical evaluation of feedstuffs are conducted in Livestock Nutrition.
   a) Discuss the Proximate Scheme of analysis [20]
   b) Discuss how the Van Soest Scheme of analysis makes the scheme better [10]
2. Combining the proximate analysis and the van Soest scheme show how you can methodically evaluate a feedstuff you have to extract maximum value in your livestock production enterprise [20]
3. Define the following terms as clearly as possible:
   a) Ration [5]
   b) Essential amino acids [5]
   c) Non-essential amino acids [5]
   d) Nutrient Requirements [5]
4. Write on the differences between ruminant and non-ruminant animals [15]
5. Give five examples each of readily available carbohydrate and protein sources in smallholder sector of sub-Saharan Africa [15]

Question 2

6. Write an essay on the energy partitioning of feed indicating the losses occurring at each stage [20]
7. Discuss nutritional program management stating how you quantify biological needs of animals; select nutrient sources; formulate diets; maximize quality control; minimize wastage; monitor performance and costs and improve non nutritional management as you optimize profitability [30]
8. In livestock feed digestion trace the feed substance, where digestion takes place in the animal, the enzyme involved in the digestion and the end product of the digestion process [30]
9. List the functions of carbohydrate, protein, fats, vitamins and minerals in the animal body [20]

Question 3

1. Explain the rationale behind feed formulation [20]
2. Using the Pearson Square method show practically how you will achieve a ration with 14 % CP content and how would you mix Soyabean meal (SBM) and maize meal (MM) given that SBM has 44% CP and MM has 8 % CP. [30]
3. Give the eight (8) general classes of feedstuffs with examples where applicable of the ingredient a farmer can use [20]
4. Discuss how digestion occurs in the rumen and identify the suitable ingredients which are used [15]

5. Discuss why fats are added to animal feeds and give examples of fat substances that can be used [15]

END OF EXAMINATION PAPER