



*"Investing in Africa's future"*

**COLLEGE OF HEALTH AGRICULTURE AND NATURAL  
SCIENCES**

**NAAS 401: APPLIED ANIMAL NUTRITION**

**END OF FIRST SEMESTER EXAMINATION**

**NOVEMBER 2025**

**LECTURER: DR. S. CHAKEREDZA**

**DURATION: 3 HRS**

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**INSTRUCTIONS**

Answer all questions in Section A and any **three** from Section B

Section A carries **40 marks** and each question in section B carries **20 marks**.

## **SECTION A: ANSWER ALL QUESTIONS FROM THIS SECTION**

### **Question 1**

- a. Define “digestibility” and explain its importance in evaluating feed quality. [10]
- b. What is the difference between crude protein and true protein in animal feeds? [4]
- c. List four essential amino acids for poultry and explain why they must be supplied in the diet. [10]
- d. What is the function of the rumen in ruminant digestion? [6]
- e. What is metabolizable energy (ME), and how is it calculated from nutrient partitioning. [10]

## **Section B: ANSWER ANY THREE QUESTIONS**

### **Question 2**

Compare the digestive systems of ruminants and monogastric animals in relation to feed utilization. [20]

### **Question 3**

Evaluate the use of crop residues (e.g., maize stover) in smallholder cattle feeding systems. [20]

### **Question 4**

Explain how nutrient requirements change during different physiological stages (growth, lactation, pregnancy) in dairy. [20]

### **Question 5**

Discuss nutritional program management for optimising profitability [20]

### **Question 6**

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 [20]

**END OF EXAMINATION PAPER**