(*Knowledge for Development*)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2023/2024 ACADEMIC YEAR

THIRD YEAR 1ST SEMESTER MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF SCIENCE AGRICULTURE AND BIOTECHNOLOGY; B.SC. AGRICULTURE EDUCATION AND EXTENSION; AGRICULTURAL ECONOMICS AND RESOURCE MANAGEMENT; AND B.ED. SCIENCE

COURSE CODE: AAP 311
COURSE TITLE: ANIMAL NUTRITION

DATE: 11TH DECEMBER 2023 **TIME:** 2 – 4 PM

INSTRUCTIONS TO CANDIDATES

There are a total of five (5) Questions.
Answer Question 1 and any other two (2) Questions.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over

COMPULSORY QUESTION

Q1. a) Distinguish between digestion and metabolism. **(4 marks)**

b) Distinguish between microbial and enzymatic digestion. **(4 marks)**

c) Estimate the amount of Dry Matter intake (DMI) of a dairy cow weighing 300 kg live weight and producing 10 kg milk per day. **(2marks)**

d) Suppose the DMI in (c) above was obtained from silage containing 60% moisture, calculate the daily cost of silage the cow will consume if silage costs Ksh 20 per kg. **(4 marks)**

e) Describe the functions of water in animal nutrition. **(6 marks)**

f) Using relevant examples, describe the use of non-protein nitrogen in ruminant feeding. **(6 marks)**

g) List the types of food additives applied in livestock feeds. **(4 marks)**

ANSWER ANY TWO QUESTIONS

Q2. Discuss the factors affecting voluntary food intake in non-ruminants. **(20 marks)**

Q3. a) Discuss digestion of carbohydrate in ruminants. **(10 marks)**

Q3. b) Explain the digestion of proteins in non-ruminant animals. **(10 marks)**

Q4. a) Explain how dietary proteins can be protected from degradation in the rumen. **(10 marks)**

Q4. b) Briefly describe factors considered in feed formulation. **(10 marks)**

Q5. a) Explain the limitations of Digestibility Coefficient in feed analysis. **(10 marks)**

Q5. b) Describe the fate of dietary amino acids and ammonia in ruminant animals. **(10 marks)**