



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**

**THIRD YEAR FIRST SEMESTER UNIVERSITY EXAMINATION FOR THE DEGREE
OF BACHELOR OF SCIENCE IN ANIMAL SCIENCE**

2024/2025 ACADEMIC YEAR

SIAYA

COURSE CODE: AAB 1206

COURSE TITLE: Principals of Animal Nutrition

EXAM VENUE:

STREAM: BSc. Animal Science, Y2, S2

DATE:

EXAM SESSION:

TIME: 2 HOURS

Instructions:

1. Answer ALL the questions in section A and any TWO in section B.
 2. Candidates are advised not to write on question paper.
 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.
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SECTION A [30 MARKS]

Answer ALL questions from this Section.

1. a. Explain the following terms:
 - i. Nutrient [2 Marks]
 - ii. Biological value of protein [2 Marks]
 - iii. Digestible Energy [2 Marks]
 - iv. Hypocalcaemia [2 Marks]
 - v. Proximate analysis [2 Marks]

2. a. What are the three sources of water for livestock? [6 marks]
- b. Outline two factors that may affect water balance in the body of an animal. [4 marks]

3. a. Briefly explain the structural difference between starch and cellulose. What is its implication for animal nutrition? [6 Marks]
- b. List two products of protein digestion in:
 - ii Ruminants.
 - ii Non-ruminants [4 Marks]

SECTION B [40 MARKS]

Answer TWO QUESTIONS from this Section.

4. (a) Describe the process of carbohydrate digestion in non-ruminants and ruminants. [10 Marks]
- (b) What are the differences in protein digestion for the two classes of livestock (in 4a above) and implications for feeding management. [10 Marks]

5. Discuss the following:
 - a. Digestion of protein in ruminant livestock. [10 marks]
 - b. The advantage of adding fat to livestock diets. [5 Marks]
 - c. The effect of adding too much fat to i) pig diets and ii) dairy cattle diets. [5 marks]

6. Discuss the following factors and their implications for livestock nutrition:
 - a. Four animal factors that affect feed intake. [10 marks]
 - b. Four feed factors that affect digestibility. [10 Marks]