



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

**UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE
ANIMAL SCIENCE**

THIRD YEAR SEMESTER ONE 2017 ACADEMIC YEAR

REGULAR

COURSE CODE: AAS 3316

COURSE TITLE: CONCENTRATES, SUPPLEMENTS & ADDITIVES

EXAM VENUE:LR 16

STREAM: BSc. Animal Science

DATE:13/12/17

EXAM SESSION: 2.00 -4.00PM

TIME: 2 HOURS

Instructions

- 1. Answer ALL questions in Section A (compulsory) and ANY TWO questions in Section B**
 - 2. Candidates are advised not to write on the question paper**
 - 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**
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SECTION A

Answer ALL questions in Section A

1. Briefly outline classification of feeds and its importance (5 marks)
2. State the anti-nutritional factors and feeding recommendations in the following (10 marks)
 - a) Potatoes
 - b) Sorghum
 - c) Ground nut cake
 - d) Rape seed meal
 - e) Soy bean meal
3.
 - a) Name four main tubers and roots (each) used in livestock feeding (4 marks)
 - b) Name two potentially toxic compounds in roots and tubers citing their source and feeding mitigation measures (2 marks)
4. Using examples, enumerate the limitations of cereals in the feeding of monogastrics (5 marks)
5. Describe the nutritive value and the limitations of the following animal by-products (4 marks)
 - a) Feather meal
 - b) Blood meal

SECTION B

Answer ANY TWO questions in Section b

6. Describe the role of antibiotic food additives in
 - a) Increasing the efficiency of nutrient utilization (6 marks)
 - b) Mode of action of antibiotics (8 marks)
 - c) Challenges to use of antibiotics and mitigation measures (6 marks)
7.
 - a) Define the term feed additive (2 marks)
 - b) Define the term prebiotics and give two examples (2 marks)
 - c) Using examples, describe the mode of action of probiotics (6 marks)
 - d) Discuss the mode of action of any three rumen fermentation modifiers and give examples for each category (10 marks)
8.
 - a) State the toxic factor present in cotton seed, its impacts when fed to poultry and swine and feeding recommendations (10 marks)
 - b) Cereal milling by-products are good sources of energy in animal feeds. Enumerate the different types of milling by products, their nutritive value and utilization in feeding of farm animals (10 marks)