JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

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

2016/2017 ACADEMIC YEAR

REGULAR

COURSE CODE: AAS 3316

COURSE TITLE: CONCENTRATES, SUPPLEMENTS & ADDITIVES

EXAM VENUE: **STREAM: BSc. (Animal Science)**

DATE: **EXAM SESSION:**

TIME: 2 HOURS

Instructions:

1. **Answer ALL questions in section A and ANY other 2 Questions 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.**

SECTION A: 30 MARKS (ANSWER ALL QUESTIONS)

1. Using examples differentiate between
   a) Roots and tubers (4 marks)
   b) Full fat soybean meal and soybean extracted by solvent method (5 marks)
2. Apart from supplying energy, give three reasons for adding fats to livestock rations (6 marks)
3. Describe the role of beet molasses in animal feeding (5 marks)
4. Using specific examples describe the role of additives in animal nutrition (10 marks)

SECTION B: 40 MARKS (Answer ANY TWO questions from this Section)

5. Anti-nutritive factors in feed ingredients are a major limitation to their effective utilitation. Discuss any five anti nutritive factors showing (i) their source, (ii) impact on livestock and (iii) remedial measures that can be applied to mitigate their effects (20 marks)

6. Describe any ten by- products of dry milling of cereals showing their nutritive value, limitations and feeding recommendations for livestock (20 marks)
7. a) Protein of animal origin is utilised sparingly in livestock rations. Elaborate the statement citing your justification (5 marks)

b) Describe five products of animal origin used as feed supplements indicating their nutritive value, limitations and utilization in the diets of poultry and swine (15 marks