



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF AGRICULTURAL AND FOOD SCIENCES
THIRD YEAR FIRST SEMESTER UNIVERSITY EXAMINATION FOR DEGREE OF
BACHELOR OF SCIENCE IN ANIMAL SCIENCE
2016/2017 ACADEMIC YEAR
REGULAR

COURSE CODE: AAS 3312

COURSE TITLE: ANALYTICAL METHODS IN ANIMAL NUTRITION

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

DATE: **EXAM SESSION:**

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**
-

SECTION A [30 MARKS]

Answer ALL questions in this section

1. Explain the importance of evaluating feed quality in the laboratory before the feed is offered to animals. (3 marks)
2. Chromic acid is mostly indicated for cleaning cloudy or dirty glassware. Describe the safe use of this acid. (3 marks)
3. Briefly describe the Bligh and Dyer method of lipid extraction and purification. (4 marks)
4. Distinguish between neutral detergent fiber (NDF) and acid detergent fiber (ADF). (4 marks)
5. Give the principle behind ether extract and crude fat determination of animal feeds. (3 marks)
6. Briefly outline the dry ashing procedure of mineral analysis of animal feeds. (4 marks)
7. Distinguish between gross energy, digestible energy and metabolizable energy. (3 marks)
8. State the function of each of the following parts of a bomb calorimeter:
 - a. Bomb (1 mark)
 - b. Bucket (1 mark)
 - c. Insulating jacket (1 mark)
 - d. Thermometer (1 mark)
9. Name two accidents that can take place in the laboratory. (2 marks)

SECTION B [40 MARKS]

Answer ANY TWO questions from this section

10. Explore the various non-chemical methods of dry matter (DM) analysis of animal feeds. (20 marks)
11. Analyse the various steps used in the Kjeldahl determination of nitrogen content in animal feeds. (20 marks)
12. Describe the principles behind fatty acid analysis using gas liquid chromatography (GLC) method. (20 marks)
13. Demonstrate an understanding of the safe handling of chemicals in the laboratory. (20 marks)