



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY  
SCHOOL OF AGRICULTURAL AND FOOD SCIENCES  
UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN  
AGRIBUSINESS MANAGEMENT**

**THIRD YEAR SECOND SEMESTER 2013/2014 ACADEMIC YEAR**

**REGULAR**

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**COURSE CODE: AAS 3321**

**COURSE TITLE: Ruminant and Non-Ruminant Production**

**EXAM VENUE: LR 7**

**STREAM: BSc (Agribusiness Management)**

**DATE: 11/12/14**

**EXAM SESSION: 9.00 – 11.00 AM**

**TIME: 2.00 HOURS**

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**Instructions:**

- 1. Answer ALL question in Section A (compulsory) and ANY other 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. (a) List three(3) trace minerals and three (3) major minerals and state the effects of their deficiencies. [6marks]
- (b) How many stomachs do a Ruminant and non ruminant have? [4marks]
2. (a) What are the most common vitamins needed for ruminants and for non-ruminants? [2marks]
- (b) Outline the feeding systems for pigs. [3marks]
- (c) List the reasons for soaking or wetting pig feeds before feeding. [5marks]
3. (a) What type of feeds should be given to poultry from chicks to laying stage? [3marks]
- (b) Outline feed conservation methods which are encouraged for ruminant production. [3marks]
- (c) Should a new born calf be fed as ruminant or non-ruminant? Why? [4marks]

**SECTION B [40 MARKS]**

**Answer any TWO QUESTIONS in this Section.**

4. Pigs and Equines are both non-ruminants but they require different types of feeds. Explain. [20 marks]
5. Animal behaviour is one of the factors that affects the design and complexity of the structure of an animal house. Discuss the statement, Give clear examples. [20 marks]
6. Discuss four steps of rumination. [20 marks]