



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF AGRICULTURE AND FOOD SCIENCES
SECOND SEMESTER THIRD YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN AGRIBUSINESS MANAGEMENT AND BACHELOR
OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION 2019/2020
ACADEMIC YEAR

COURSE CODE: AAS 3321

COURSE TITLE: RUMINANT AND NON-RUMINANT LIVESTOCK PRODUCTION ECONOMICS

EXAM VENUE: **STREAM: (BSc. Agribusiness Management; BSc. Agricultural Education and Extension)**

DATE: **EXAM SESSION:**

TIME: 2HOURS

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 from this section

1. Enumerate the contrasts between a ruminant and non-ruminant animals. [5 marks]
2. State the two main processes in ruminant digestion which constitute “rumination” [5 marks]
3. Which are the main types of stomach in ruminant and non-ruminant livestock? [5marks]
4. Indicate the major enzyme distinguishing saliva from ruminant and non-ruminant livestock and explain the major functions of saliva in ruminant digestion. [10marks]
5. Distinguish between rumen degradable protein (RDP) and undegradable protein giving examples in each case. [5marks]

SECTION B [40 MARKS]

Answer any TWO QUESTIONS in this Section.

6. Discuss the key functions of rumen in a ruminant animal. [20 marks]
7. List the three major by-products of microbial fermentation in a ruminant and briefly discuss the significance of each. [20 marks]
8. Discuss the role of Pentose Phosphate Pathway (PPP) in Lipogenesis in the mammary glands of a ruminant. [20 marks].
9. Discuss why non-ruminants cannot eat and digest as much roughage as ruminants. [20 marks]