



A Constituent College of Kenyatta University

**UNIVERSITY EXAMINATIONS 2011/2012 ACADEMIC YEAR**  
**3<sup>RD</sup> YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF**  
**SCIENCE IN AGRICULTURE AND ENTERPRISE DEVELOPMENT**  
**COURSE CODE/TITLE: ARM 301: RUMINANT ANIMAL PRODUCTION**

**END OF SEMESTER: I**

**DURATION: 3 HOURS**

**DAY/TIME: MONDAY 8.00 – 11.00AM**

**DATE: 28-11-2011 (Room) A1)**

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**INSTRUCTIONS**

Answer **ALL** questions in section **A** and any **TWO** questions in Section **B**.

**SECTION A – (40 MARKS)**

**Question One**

Explain and discuss why? (6 marks)

- a) Without the oesophageal groove reflex calves, lambs and kinds would not survive. (1 mark)
- b) Colostrum is very vital to the life of a newly born calf. (3 marks)
- c) Losing approximately 20% of the body's water could lead to dehydration and eventually death. (2 marks)

**Question Two**

Describe six signs which are exhibited by a heifer or a cow when ready for breeding/mating/service? (3 marks)

### **Question Three**

Notifiable and zoonotic diseases are of great economic importance to a farmer because they contribute to low productivity of livestock. Name eight notifiable diseases of cattle and their vaccination frequency and indicate whether zoonotic. (4 marks)

### **Question Four**

Discuss why ruminants' role in food production will increase with human population? (2 marks)

### **Question Five**

Discuss four factors that have made Kenya's small scale dairying successful.(2 marks)

### **Question Six**

The importance of a heifer cannot be overemphasized because it is your future cow. Explain why the age of a heifer before its first service should be given due consideration and what are the current recommendations? (6 marks)

### **Question Seven**

Gestation length is a constant that determines productivity of dams. (4 marks)

- a) Define gestation length. (1 mark)
- b) What causes variation of gestation length? (1 ½ marks)
- c) What are the average gestation lengths in days of cows, ewes and does? (1 ½ marks)

### **Question Eight**

You are on a mission to buy female goats that are one to three years old. After discovering at the market sellers do not know the age of their goats, what physiological development stage will you employ to determine their age? (2 marks)

### **Question Nine**

Discuss three ways each in which the camel adapts to heat stress and harsh environment. (6 marks)

### **Question Ten**

Compare and contrast pastoralism and ranching in Kenya. (2 marks)

### Question Eleven

Milk is a noble food. (3 marks)

- a) Discuss attributes that consumers look for in milk and its products. (2 marks)
- b) If a farmer has excess milk and no storage facility; what one of two milk products will you advise him to process and why? (1 mark)

### SECTION B: CHOOSE TWO QUESTIONS – 30 MARKS

#### Question Twelve

Prepare self explanatory notes for your farmers who recently bought incalf heifers on the following husbandry measures: (15 marks)

- a) Necessary preparations, actions and observations to be made before calving. (4 marks)
- b) Necessary preparations, actions and observations to be made when calving and after calving. (7 marks)
- c) The role of the attendant or midwife (4 marks)

#### Question Thirteen

With the help of a well labeled figure/diagram, illustrate and explain a twelve months production cycle of a cow from one calving to the next in relation to its nutritional demands for different functions. (15 marks)

#### Question Fourteen

Sheep and goat production in semi-arid Kenya (15 marks)

- a) Sketch a nutritional management calendar of sheep and goat production under bimodal rainfall with a total annual rainfall of between 600 to 900 mm per year (7 marks)
- b) Explain and discuss nutritional strategies depicted by the sketch. (8 marks)