



# MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

THIRD YEAR SECOND SEMESTER EXAMINATION FOR  
BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

**ANS 433: ANIMAL NUTRITION AND LIVESTOCK FEEDING**

**DATE: 23/4/2019**

**TIME: 11:00 – 1:00 PM**

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## INSTRUCTIONS

Answer Question One and Any Other Two Questions

### QUESTION ONE (COMPULSORY) (30 MARKS)

- Explain the importance of water in the animals body. (6 marks)
- Explain four uses of molasses in livestock feeding. (4 marks)
- Describe the common characteristics of Crop by-products that are used as livestock feed. (5 marks)
- Briefly describe protein rich concentrates used to feed livestock. (5 marks)
- Explain five the importance of vitamin B complex in livestock. (5 marks)
- Describe five types of fodder crops used to feed livestock. (5 marks)

### QUESTION TWO (20 MARKS)

- Explain five factors that affect digestibility of feed in livestock. (10 marks)
- Using substitution method formulate 200 kg of a ration containing 18% crude protein and 10% of the ration is starch and the other available feeds stuff are sunflower seed cake with 34% C.P and maize germ 12 % C.P while starch has 3% C. P. (10 marks)

### QUESTION THREE (20 MARKS)

- a) Describe five factors that affect livestock maintenance requirement. (10 marks)
- b) A bull was feed with an average of 4 kg of hay per day for three weeks, over the experimental period of one week the bull excreted an average of 5.8 kg. Given that the moisture content of hay and faeces was 16% and 75 % respectively calculate
- i) The digestibility of the feeds (5 marks)
  - ii) If the protein in hay and faeces was 12.57% and 3.22% respectively calculate the dispersible coefficient of crude protein in the feeds (5 marks)

### QUESTION FOUR (20 MARKS)

- a) With an aid of a diagram describe the digestive system of goats. (10 marks)
- b) i) Briefly explain five sources of carbohydrates in livestock (5 marks)
- ii) Describe five functions of proteins in the body of an animal (5 marks)

### QUESTIONFIVE (20 MARKS)

- a) Describe factors to consider, when formulating a feed ration for a dairy herd (10 marks)
- b) i) Describe the factors that would reduce the risk of formation of aflatoxins in animal feeds (5 marks)
- ii) Describe the factors that affect the digestibility of a feed stuff. (5 marks)