



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations 2015/2016

SCHOOL OF AGRICULTURE AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF AGRICULTURAL EXTENSION AND EDUCATION

FIRST SEMESTER EXAMINATION FOR DIPLOMA IN AGRICULTURAL EDUCATION
AND EXTENSION

KRM 203: PRINCIPLES OF ANIMAL NUTRITION

Date:

Time: 2 hrs

INSTRUCTIONS:

Answer question ONE and TWO other questions

SECTION A: (COMPULSORY) 30 MARKS

QUESTION ONE:

- a) Explain the following terms:
- i. Chelates (2 marks)
 - ii. Basal Metabolism (2 marks)
 - iii. Heat increment (2 marks)
- b) Differentiate between meat meal and meat and bone meal (2 marks)
- c) Explain FOUR factors affecting efficiency of feed utilization in animals. (4 marks)
- d) Explain the conversion factor for converting Nitrogen to protein and explain how it is Obtained. (3 marks)

- e) Explain four processing methods used during extraction of oil in oilseeds used in animal feeds (4 marks)
- f) Explain the energy and protein requirement of a dairy cow (4marks)
- g) Explain THREE functions of carbohydrates in animal nutrition (3 marks)
- h) Explain classes of animal feeds (4 marks)

SECTION B: ANSWER ANY OTHER TWO QUESTIONS(40 MARKS)

QUESTION TWO:

- a) Describe digestion process of a ruminant animal (15 marks)
- b) Explain FIVE advantages of runimants over colon fermentors (5 marks)

QUESTION THREE

- a) Explain the information required prior to ration formulation (12 marks)
- b) You are provided with two feedstuffs i.e. Cotton seed cake with 40% CP and Maize with 10% CP. Use Pearson square to formulate a diet containing 18%CP and check the CP content of the formulated diet (8 marks)

QUESTION FOUR

- a) Describe five types of feed additives used in animal feeds (10 marks)
- b) Explain five effects of mycotoxins in animal health (10 marks)

QUESTION FIVE

- a) Outline the hay making process (10 marks)
- b) Explain the losses that occur during silage making and storage (10 marks)