EMBU UNIVERSITY COLLEGE

(A CONSTITUENT COLLEGE OF THE UNIVERSITY OF NAIROBI)

TRIMESTER EXAMINATIONS 2013/2014

FIRST YEAR EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURAL RESOURCE MANAGEMENT

ART 622: ANIMAL NUTRITION AND FEED RESOURCES

DATE: AUGUST 7, 2014   **TIME: 5.00 – 8.00PM**

INSTRUCTIONS:

Answer ANY FOUR Questions.

QUESTION ONE

a) State the importance of nutrients to the animal productivity   (3 marks)

b) Explain what constitutes nutritive value of a feed   (2 marks)

c) Briefly explain how the following nutrients are determined in the chemistry laboratory

   i.)   Fiber   (5 marks)

   ii.)   Fat   (5 marks)

d) Describe briefly three biological assessment methods of protein and dry matter digestibility

                      (6 marks)

e)   i) State the different between apparent digestibility and true digestibility of protein

ii) Why is it not advisable to rely on nutrients composition analyses data obtained from literature and data bases on feed ration formulation and day today feeding management of a herd? (4 marks)

QUESTION TWO

a) Describe the fate of carbohydrate and protein in the ruminant digestion (5 marks)

b) Explain the term bypass protein and how it can be increased in feeding a dairy cow

(5 marks)

c) High crude protein content in a feed is associated with high feed digestibility of dry matter content. Explain why this is not always true (5 marks)

d) Explain what can inhibit or enhance protein or dry matter degradability in the rumen of a cow (5 marks)

e) Describe how you can determine digestibility of protein using chromic oxide as a marker

(5 marks)

QUESTION THREE

a) State the main differences between (2 marks)
  - i.) Ley pastures and natural pastures
  - ii.) Fodder grass and pasture grass

b) List 5 common fodder grass species, 3 leguminous fodder species and 2 pasture species

(5 marks)

c) Explain how you would assess the dry matter yield of a pasture field and a fodder grass field (4 marks)

d) i) State the objectives of establishing a pasture

ii) Outline factors that would be considered to ensure a well established pure stand grass

pastures (4 marks)

e) Briefly describe two current methods of establishing Napier grass (5 marks)

f) State the factors that would reduce the life and productivity of a Napier grass field under Zero-grazing system of Management (5 marks)

QUESTION FOUR

a) Crop residues constitute a large proportion of roughages fed to ruminants in dry season by communities around Mt Kenya region: List 5 common crop residues used in the area, indicate their limitation as dairy cattle feed and how a farmer can improve their nutritive value (9 marks)

b) Outline the steps you would follow to make good quality silage from maize and from Napier grass (8marks)

c) i) Explain the term integrated crop and livestock system (3 marks)

ii) State the salient features that make intergrated crop and livestock systems profitable and environmentally sustainable (5marks)

QUESTION FIVE

a) Some commercial feed rations are added some products to enhance their Nutritional value for livestock feeding. Name 5 of the commonly used additives, the purpose for which they are incorporated in feed and their limitation. (10 marks)

b) Discuss the advantages and disadvantages of adopting the total mixed ration (TMR) in feeding dairy cattle (10 marks)

c) Discuss how precision agriculture would be implemented in management of dairy cattle

(5 marks)

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