UNIVERSITY OF EMBU

2017/2018 ACADEMIC YEAR

SECOND SEMESTER EXAMINATIONS

SECOND YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE AND BACHELOR OF SCIENCE IN RANGE MANAGEMENT

AAS 206: PRINCIPAL OF ANIMAL NUTRITION

DATE: APRIL 3, 2018 **TIME: 8:30 AM – 10:30 AM**

INSTRUCTIONS:

Answer Question ONE and ANY Other TWO Questions

QUESTION ONE (30 MARKS)

a) Define animal nutrition (1 mark)

b) Illustrate the main component of livestock feeds (4 marks)

c) Describe the main source of water for animals (3 marks)

d) Describe the Kjeldahl process in determining the crude protein levels of livestock feeds (5 marks)

e) Discuss the alternative procedure to proximate analysis in plant fibre nutritive value analysis. (5 marks)

f) Explain with reasons why a dairy farmer supplements his cows with minerals when milking? (2 marks)

g) Describe the functions of vitamin A and D in the body of poultry. (4 marks)

h) Differentiate in vivo from in vitro digestion of feed materials. (4 marks)

i) Discuss why soya beans are preheated before making feed for poultry (2 marks)

QUESTION TWO (20 MARKS)

Discuss proximate analysis of feeds, limitations and corrections. (20 marks)

QUESTION THREE (20 MARKS)

a) Use a diagram to illustrate the terms that are used to describe the energy content of feedstuff and briefly describe each one of them. (10 marks)

b) Discuss how acetate: propionate ratio affects methane production and metabolic efficiency in cattle. (10 marks)

QUESTION FOUR (20 MARKS)

a) Ruminants are known to have four compartments stomach and can better consume feed high in fibres plant materials. Discuss. (10 marks)

b) Describe how the major volatile fatty acids (VFA) absorbed are catabolized by ruminants. (10 marks)

QUESTION FIVE (20 MARKS)

a) Suppose we have a protein concentrate, such as cotton seed cake meal with 40% Crude Protein (CP) and a grain with 10% CP and we wish to have a blend with 18% CP. Using the Pearson's square determine the % parts of the crude protein and grain in the feed ration. (4 marks)

b) Describe the signs of protein deficiency in animal and explain how it is corrected. (5 marks)

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