MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

THIRD YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (AGRICULTURAL EDUCATION AND EXTENSION)

ASC 433: ANIMAL NUTRITION AND FEEDING

DATE: 18/8/2021   **TIME: 8.30-10.30 AM**

INSTRUCTIONS:

Answer question ONE and any other TWO questions

QUESTION ONE (30 MARKS)

a)   With a relevant example in each case, describe three approaches towards feed formulation

(6 marks)

b)   Describe the following concepts as applied in animal nutrition;

   i.   Mechanical digestion   (5 marks)

   ii.   Feed utilization   (5 marks)

   iii.   Mineral deficiencies   (5 marks)

c)   Explain five antinutritive factors in animal feeds   (5 marks)

d)   Define Neutral Detergent Fibre (NDF) in relation to feed analysis   (1 mark)

e)   Explain 3 ways of feed protein evaluation   (3 marks)

QUESTION TWO (20 MARKS)

a)   Describe the partitioning of feed energy   (10 marks)

b)   Discuss any five animal feed additives   (10 marks)

QUESTION THREE (20 MARKS)

a)   Describe how pearson square works in feed formulation   (10 marks)

b)   Describe how to formulate a diet from cotton seed meal and maize, to contain 18 % crude protein using pearson square   (10 marks)

QUESTION FOUR (20 MARKS)

a)   Define nutrients absorption   (2 marks)

b)   Describe four mechanisms of nutrients absorption   (16 marks)

c)   Explain two factors affecting nutrient absorption   (2 marks)

QUESTION FIVE (20 MARKS)

a)   Discuss four routes of water loss which constitute the summary of any animal's water requirements   (8 marks)

b)   Explain any four nutrient types and their functions   (12 marks)