



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
THIRD YEAR FIRST SEMESTER**

**SCHOOL OF TOURISM AND NATURAL
RESOURCE MANAGEMENT**

**BACHELOR OF SCIENCE IN ANIMAL HEALTH
AND PRODUCTION**

COURSE CODE: AHP 2106

**COURSE TITLE: PRINCIPLES OF ANIMAL
NUTRITION AND FEEDING**

DATE: 11TH DECEMBER 2018

TIME: 8.30-10.30 A.M

INSTRUCTIONS TO CANDIDATES

Answer ALL questions

This paper consists of 2 printed pages. Please turn over

PRINCIPLES OF ANIMAL NUTRITION AND FEEDING (120 MARKS)

SECTION A

1. (a) Describe factors affecting water intake in an animal. **(5 marks)**
(b) Outline etiologies of copper deficiency in lambs. **(5 Marks)**
(c) Describe the clinical signs seen in unweaned lambs with copper deficiency. **(5 Marks)**
(d) Describe the feed materials that supply protein to the animals. **(5 marks)**
2. (a) Using Pearson's square method prepare the ration of 100kgs containing 16% DCP for chicken using wheat with 10% DCP and sunflower with 34% DCP. Calculate how much of each feedstuff you require. (Show all your working) **(10 Marks)**
(b) Draw a well labeled schematic representation of partitioning of gross energy. **(10 Marks)**
3. Describe the digestive process that take place in the mouth, stomach, small and large intestine in non-ruminant clearly indicating the by-products of digestion process. **(20 marks)**
4. a) Define proximate analysis of feed. **(2 marks)**
b) describe the various components in which the nutrient is partitioned using proximate analysis. **(18 marks)**
5. A bull was fed on an average of 4.0kg of hay per day for three weeks. Over the experimental period of 7 days the animal excreted an average weight of 5.8kg. Given that the moisture content of the hay is 16% and faeces 75%.
 - (i) Calculate the digestible coefficient of the dry matter of hay. [10 marks]
 - (ii) Suppose the chemical composition of hay and faeces for crude protein was 12.5% and 3.2% respectively. Calculate the digestible coefficient of crude protein hay on dry matter basis. (10 marks)
6. Describe industrial by products used to feed animals. (20 marks)

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PRINCIPLES OF ANIMAL NUTRITION AND FEEDING (120 MARKS)

SECTION A

1. (a) Describe five evaluations of feed digestibility. (5 Marks)
(b) Outline five importance of urea a feed additive. (5 Marks)
(c) Outline five animal industries by products used as feed supplements. (5 Marks)
(d) Define the following terms: (5 Marks)
 - i. Feed diet
 - ii. Ration
 - iii. Dry matter
 - iv. Ration formulation
 - v. Nutrition

2. (a) Explain with an example algebraic equation method of ration formulation. (10 Marks)

(b) Explain digestibility and show formula for digestion coefficient. (DC). (10 Marks)

3. (a) Explain the following as feed additives; (10 Marks)
 - i. Molasses
 - ii. Urea
(b) Explain the hazards associated with poultry feeds and its solutions. (10 Marks)

4. (a) Explain the factors to be considered preparing a feed ration (5 marks)
(b) A farmer wants to formulate 500 kg of a ration containing 21% CP. Available feedstuff are maize 10% and cotton seed meal 40% CP. Use algebraic equation method. (15 marks)

5. Describe the factors that influence feed intake in an animal. (20 marks)
6. Discuss the process of digestion in a cow. (20 marks)