



UNIVERSITY OF EMBU

2019/2020 ACADEMIC YEAR

SECOND SEMESTER EXAMINATIONS

**FOURTH YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
IN AGRICULTURE (ANIMAL PRODUCTION)**

AAS 416: RATION FORMULATION AND FEED MANUFACTURING

DATE: OCTOBER 13, 2020

TIME: 8:30 AM – 10:30 AM

INSTRUCTIONS:

Answer Question ONE and ANY Other TWO Question

QUESTION ONE (30 MARKS)

- a) Using a Pearson Square, calculate the amount of maize germ with a 18% CP and lupin with a 30% CP to end up with a feed ration with 15% CP. (5 marks)
- b) Describe the effect of feed size and shape in ration formulation and feed processing (5 marks)
- c) Describe round and smooth feed particles in regard to feed milling and processing. (4 marks)
- d) If 317 kg cattle are expected to eat 8 kg of DM, 3.6 kg of which will be required for maintenance, calculate the diet's NE value. (3 marks)
- e) Nutrient allowance is important in ration formulation. Explain. (5 marks)
- f) Describe the assumptions made during the developing feed standards. (3 marks)
- g) You are tasked to use locally available resources to prepare a ration for dairy cattle. Elaborate the steps involved. (5 marks)

QUESTION TWO (20 MARKS)

- a) Discuss the feeding standards. (7 marks)
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ISO 27001:2013 Certified *Knowledge Transforms*



ISO 9001:2015 Certified

- b) Compare and contrast dry and moist heat processing of feeds. (6 marks)
- c) Describe the processing of feed pelleting and explain their importance in regard to size and quality. (7 marks)

QUESTION THREE (20 MARKS)

- a) Highlight the points that differentiate a hammer from a roller mill and explain the reasons a feed miller may choose one and not the other. (7 marks)
- b) Discuss the strategies you can use as a feed miller to reduce feed shrink during feed processing. (7 marks)
- c) Discuss micro-nutrient premixing and the processes of developing premix feeds. (6 marks)

QUESTION FOUR (20 MARKS)

- a) Batching is better than continuous flow. Discuss. (10 marks)
- b) You want to establish a feed milling company after graduation. Discuss the feed manufacturing industry in Kenya and describe the challenges you are likely to encounter. (10 marks)

QUESTION FIVE (20 MARKS)

- a) Describe the common feed mill pests and explain how to control them. (10 marks)
- b) Discuss the importance of sanitation in feed manufacturing. (10 marks)

END

