



# UNIVERSITY OF EMBU

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**2017/2018 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: APRIL 4, 2018**

**TIME: 11:00 AM – 1:00 AM**

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**INSTRUCTIONS:**

**Answer Question ONE and ANY Other TWO Questions**

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**QUESTION ONE (30 MARKS)**

- a) Describe feed tables and explain their functions. (2 marks)
- b) Compare maize germ and wheat bran in regard to nutrient content. (4 marks)
- c) Compare book values and laboratory analysis values and explain their consequences in ration formulation. (5 marks)
- d) Explain feed standards and their importance. (3 marks)
- e) Using a Pearson square, calculate the amount of maize germ with a 12% CP and lupin with a 30% CP to end up with a feed ration with 15% CP. (4 marks)
- f) Briefly discuss the procedure of developing feed standards. (4 marks)
- g) Describe standardization bodies and give one example of a standardization body at international, regional and national level. (4 marks)
- h) Describe the process of batching in compound feed manufacturing (4 marks)

**QUESTION TWO (20 MARKS)**

- a) Illustrate using a simple diagram the layout of a feed manufacturing unit (8 marks)
- b) Discuss the importance of feed screening before milling (6 marks)
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- c) Describe the classification of feed particles using geometric mean diameter (6 marks)

**QUESTION THREE (20 MARKS)**

- a) Describe the importance of size reduction in milling of animal feeds. (7 marks)
- b) Discuss regulation of the feed industry in Kenya. (6 marks)
- c) Explain how sanitation is important in feed manufacturing. (7 marks)

**QUESTION FOUR (20 MARKS)**

- a) Use a diagram to compare a hummer mill and a roller mill. (7 marks)
- b) Discuss micro-nutrient premixing. (7 marks)
- c) Discuss quality control measures in feed manufacturing. (6 marks)

**QUESTION FIVE (20 MARKS)**

- a) Describe the pests common in a feed mill and explain how to control or manage them. (6 marks)
- b) Describe shrinkage control and explain how it is implemented in production of sow and weaner meal. (7 marks)
- c) Discuss the processes and factors to consider when packaging feeds. (7 marks)

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