



MACHAKOS UNIVERSITY

UNIVERSITY EXAMINATION FOR 2024/2025 ACADEMIC YEAR
SCHOOL OF AGRICULTURE, ENVIRONMENT AND HEALTH SCIENCES
DEPARTMENT OF AGRICULTURAL SCIENCES
FOURTH YEAR FIRST SEMESTER EXAMINATION FOR
BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION
ASC 433: ANIMAL NUTRITION AND LIVESTOCK FEEDING

DATE:17/1/2025

TIME:11:00-1:00 P.M

INSTRUCTIONS: Answer question one and any other two questions

QUESTION ONE: Compulsory (30 MARKS)

- a) Highlight four differences between roughage and concentrate feedstuffs (2 marks)
- b) Describe how the digestive tract of domestic birds is adapted to digestion (3 marks)
- c) Differentiate between feed supplements and feed additives (2 marks)
- d) On a Dry Matter (DM) basis, a silage sample contains 18% Crude Protein (CP) and dry matter content is 50% on as-fed basis. Calculate the %CP on as-fed basis (5 marks)
- e) Cotton seedcake contains 35%CP and maize bran contains 10%CP and these feedstuff are the only available materials to a dairy farmer for ration formulation for the dairy cattle requiring 15%CP. Using the Pearson Square method, calculate the amounts of cotton seedcake and maize bran required by farmer to formulate the rations (3 marks)
- f) Briefly explain six factors contributing to manufacture of sub-standard animal feeds in Kenya (3 marks)
- g) Discuss the role of each stakeholder in the animal feed industry in Kenya (3 marks)
- h) Describe the process of hay making by the resource-poor farmers (3 marks)
- i) Using examples, highlight the impact of international trade on livestock feed industry in Kenya (3 marks)

- j) Highlight six considerations made when siting a commercial animal feeds manufacturing mill in Kenya (3 marks)

QUESTION TWO (20 MARKS)

- a) Outline the procedure you would use in making quality silage in a farm (4 marks)
- b) Discuss the digestion of roughage feedstuff in ruminant animal (6 marks)
- c) Explain five factors contributing to the frequent feed scarcity in the livestock sector in Kenya (10 marks)

QUESTION THREE (20 MARKS)

- a) Discuss four ways used by farmers to control named contaminants in animal feeds in Kenya. (8 marks)
- b) Discuss six influencers of the livestock feeding regime in a commercial farm (12 marks)

QUESTION FOUR (20 MARKS)

- a) Discuss the guidelines of ration formulation in a factory (10 marks)
- b) Discuss the importance of 'feeding standards' in livestock feeding (10 marks)

QUESTION FIVE (20 MARKS)

Discuss steps useful in production of quality animal feeds in an animal feed manufacturing plant (20 marks)