

BINDURA UNIVERSITY OF SCIENCE EDUCATION
FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE

AGAGE403

Department of Animal Science
BSc Agricultural Science Part IV Examination
Animal Nutrition and Feed Technology

NOV 2023

3 HOURS (100 Marks)

INSTRUCTION: Answer any FOUR questions. Each question carries 25 marks

1. Describe how the following nutrient deficiency symptoms manifest in animals;
 - i. Water deficiency. [5 marks]
 - ii. Carbohydrate deficiency. [5 marks]
 - iii. Protein deficiency. [5 marks]
 - iv. Calcium and phosphorus deficiency. [5 marks]
 - v. Vitamin A and D deficiencies. [5 marks]
2. Contrast protein and carbohydrate metabolism between cattle and pigs. [25 marks]
3.
 - a) Formulate a diet of 22% Crude Protein for broilers starter feed with yellow maize meal (10.2%CP), wheat bran (8.2%CP), SBM (44% CP) and Fish Meal (52.7% CP). [10 marks]
 - b) Calculate the proportion of ingredients in a one tonne mixture. [10 marks]
 - c) Discuss the implication of such type of a ration to a ruminant animal. [5 marks]
4. Discuss protein and energy nutrition in broilers from day old to finish. [25 marks]
5. Discuss immuno- nutrition under the following headings;
 - a) Types of immunity. [5 marks]
 - b) Immunity assessment methods. [5 marks]
 - c) Nutrition and immunity interactions. [15 marks]
6. Discuss the potential impact on environment, ecosystem, diversity and health from culturing and using GMO plants as feed for livestock. [25 marks]

END OF EXAMINATION PAPER