



**UNIVERSITY OF SWAZILAND**

**2<sup>nd</sup> SEM. 2014/2015**

**SUPPLEMENTARY EXAMINATION PAPER**

**PROGRAMME: B.Sc. ANIMAL SCIENCE YEAR 3, B.Sc. ANIMAL SCIENCE (DAIRY OPTION) YEAR 3, B.Sc. AGRIC EDUCATION YEAR 3**

**COURSE CODE: AS 304**

**TITLE OF PAPER: NUTRITION, FEEDS AND FEEDING**

**TIME ALLOWED: TWO (2) HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER THREE**

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY THE CHIEF INVIGILATOR**

**QUESTION 1**

- a. Explain what you understand by “Pearson Square” **(4 Marks)**
- b. Mention any other three feed formulation methods **(6 Marks)**
- c. Calculate the proportion of soya bean meal (SBM) and maize in a 500kg ration with 18% crude protein (CP) assuming that SBM and maize have 45% and 10% CP contents respectively. **(10 Marks)**
- d. Discuss the side effects of feeding only this type of ration to ruminant animals **(5 Marks)**

**QUESTION 2**

- a. By means of definitions only, distinguish between gross energy, metabolizable energy and digestible energy? **(3 Marks)**
- b. Mention any **FOUR** methods of measuring nutrients digestibility in animals **(4 Marks)**
- c. Explain **TWO** advantages and two disadvantages of each of the 4 methods you listed in “b” above. **(8 Marks)**
- d. Discuss any **FIVE** the advantages of rumen fermentation to the host ruminant animal. **(10 Marks)**

**QUESTION 3**

Mention any **FIVE** classes of feed resources from plants origin and in each case discuss the by-products that could be derived and their nutritive value to livestock. **(25 Marks)**

**QUESTION 4**

- a. Write an essay on the nutritional significance of rumen degradable protein and undegradable dietary protein in ruminant nutrition. **(12 Marks)**
- b. Briefly explain the metabolic significance of two macro and two micro mineral elements in livestock nutrition. **(8 Marks)**
- c. Mention any **FIVE** ciliate protozoa species commonly found in the rumen of ruminant animals **(5 Marks)**

**QUESTION 5**

Write short notes on the cause, symptoms and treatment of the following nutritional disorders in livestock:

- |                 |           |
|-----------------|-----------|
| a. Bloat        | (5 Marks) |
| b. Grass tetany | (5 Marks) |
| c. Rickets      | (5 Marks) |
| d. Acidosis     | (5 Marks) |
| e. Goitre       | (5 Marks) |