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UNIVERSITY OF SWAZILAND

2<sup>nd</sup> SEM. 2013/2014

SUPPLEMENTARY EXAMINATION PAPER

PROGRAMME: B.Sc. AGRICULTURAL EDUCATION YEAR 3, B.Sc. ANIMAL SCIENCE YEAR 3 AND B.Sc. ANIMAL SCIENCE (DAIRY OPTION) YEAR 3

COURSE CODE: AS 304

TITLE OF PAPER: NUTRITION, FEEDS AND FEEDING

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS

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**QUESTION 1**

(a) In Swaziland, during the dry season cattle often lose body condition due to the poor quality of available grazing resources. Explain how best the available maize stover and often poor quality hay can be processed by farmers to improve the dry matter intake of the cattle as well as elevate their plane of nutrition. **(15 Marks)**

(b) Proximate analysis of animal feed is one of the tools used in animal nutrition. Explain the value of this tool, outlining how it can be used in ration formulation for different species and classes of animals. **(10 Marks)**

**QUESTION 2**

(a) Explain why ruminant animals are independent of an obligatory dietary supply of essential amino acids. **(5 Marks)**

(b) Rabbits are herbivore animals that practise a feeding habit known as caecotrophy (coprophagy). Explain what this is and how they benefit from it. **(5 Marks)**

(c) Explain what grass tetany is (including the cause) as well as how it can be managed and prevented in cattle. **(5 Marks)**

(d) Discuss how the comparative slaughter technique is used as a measure of dietary energy retention in animal nutrition. **(10 Marks)**

**QUESTION 3**

(a) Discuss the advantages of feeding grower-finisher pigs on an *ad libitum* basis compared to a restricted twice daily feeding regimen as well as the influence of the feed delivery system (trench feed troughs compared to hopper dispensed feed) and constant water availability on feed intake, growth and feed wastage losses. **(15 Marks)**

(b) Phase feeding and growth phase specific ration formulation are practices commonly practised in monogastric animal nutrition. Explain the phenomena as well as their influence on both biological animal performance and implications on economic efficiency of animal growth (production). **(10 Marks)**

#### QUESTION 4

Briefly discuss the following:

- a) Mycotoxins in animal feed **(5 Marks)**
- b) Trypsin inhibitors **(5 Marks)**
- c) Tannins (phenolic compounds) in animal feed **(5 Marks)**
- d) Phytases and their use in monogastric animal feed **(5 Marks)**
- e) Probiotics in animal feed **(5 Marks)**

#### QUESTION 5

(a) Discuss the phenomenon of rumen acidosis (lactic acidosis), explaining its causes, consequences on animal wellbeing as well as how it can be prevented. **(12 Marks)**

(b) Two conditions normally associated with a negative energy balance in ruminant nutrition are fatty liver and ketosis. Discuss how a negative energy balance results in these two metabolic disorders as well as how it can be prevented. **(13 Marks)**