



UNIVERSITY OF SWAZILAND

1st SEM. 2017/2018

FINAL EXAMINATION PAPER

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

COURSE CODE: ASC 303

TITLE OF PAPER: NUTRITION, FEEDS AND FEEDING

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

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QUESTION 1

(a) Define the following terms commonly used in animal nutrition:

- (i) Nutrition (2 Marks)
- (ii) Minerals (2 Marks)
- (iii) Indispensable nutrients (2 Marks)
- (iv) *Ad libitum* (2 Marks)
- (v) Non-protein nitrogen (2 Marks)
- (vi) Hind-gut fermenters (2 Marks)
- (vii) Hypocalcaemia (2 Marks)
- (viii) Anti-nutritional factors (2 Marks)
- (ix) Ether extract (2 Marks)
- (x) Neutral detergent insoluble fibre (2 Marks)

(b) List any FIVE functions of water in a lactating animal (5 Marks).

(25 Marks)

QUESTION 2

Discuss moisture and dry matter and their significance in animal nutrition. (25 Marks)

QUESTION 3

Protein and fibre are the two major nutritional components that largely determine the nutritive value of feedstuffs for livestock in the tropics. Discuss how these components are measured analytically, including the limitations of the methods used, and their significance in livestock production in a tropical environment such as in Swaziland (25 Marks)

QUESTION 4

Discuss the following statement:

“Whilst minerals are essential in animal nutrition, their supplementation in animal diets should be carried out with great care”.

(25 Marks)

QUESTION 5

Discuss and illustrate how protein digestion occurs in the rumen in ruminants. **(25 Marks)**