



**UNIVERSITY OF SWAZILAND
SUPPLEMENTARY EXAMINATION PAPER**

PROGRAMME: B.Sc. IN ANIMAL SCIENCE

COURSE CODE: APH 304

TITLE OF PAPER: NUTRITIONAL BIOCHEMISTRY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY 4 QUESTIONS.

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GRANTED BY THE CHIEF INVIGILATOR**

QUESTION 1

Explain two routes for production of acetyl CoA in the animal cell and explain the consequences of reduced dietary carbohydrates in the metabolism of Acetyl CoA.

(25 marks)

QUESTION 2

Discuss and illustrate the urea cycle

(25 marks)

QUESTION 3

a. The near-infrared reflectance spectroscopy (NIRS) represents radical departure from the conventional analytical methods of animal feeds. Discuss its advantages in analysis of animal feeds. **(15 marks)**

b. Explain briefly how NIRS measures the chemical constituent of feeds. **(7 marks)**

c. What is the greatest limitation of NIRS? **(3 marks)**

QUESTION 4

Write short notes on the following;

- i. Thermostatic theory in animal feed intake **(5 marks)**
- ii. Comparative slaughter **(5 marks)**
- iii. Group feeding **(5 marks)**
- iv. Measures of rumen dynamics **(5 marks)**
- v. Microbial protein synthesis **(5 marks)**

QUESTION 5

The presence of internal parasites greatly affect nutrient uptake in ruminants. Discuss the mechanisms by which tropical plants induce anthelmintic effects. **(25 marks)**