



UNIVERSITY OF SWAZILAND

2nd SEM. 2014/2015

FINAL EXAMINATION PAPER

**PROGRAMME: B.Sc. ANIMAL SCIENCE YEAR 4, B.Sc. ANIMAL SCIENCE
(DAIRY OPTION) YEAR 4**

COURSE CODE: ASD 401

TITLE OF PAPER: DAIRY ANIMAL FEEDING

TIME ALLOWED: TWO (2) HOURS

**INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER THREE (3)
QUESTIONS**

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CHIEF INVIGILATOR**

QUESTION 1 (COMPULSORY)

- a. Using the Pearson square, formulate a total mixed ration for dairy cows (i.e. 20% crude protein (CP) ration) with dried brewer's grain 27% CP and Barley grain 12% CP. (5 Marks)
- b. What will be the proportion of each of these ingredients in one and a half tonne mixture? (2 Marks)
- c. If proximate analysis showed that the diet has 85% DM, 36% CF, 5% EE and 6% Ash, what is the nitrogen free extract (NFE) content of the feed? (2 Marks)
- d. If the neutral detergent fibre (NDF) content of the feed is 48%, what is its NFC content? (2 Marks)
- e. If a dairy Heifer consumes 3 kg of this ration and voids 800gm dry matter, what is its dry matter digestibility (DMD)? (4 Marks)
- f. Also, if the CP content of the faeces is 24%, what is the crude protein digestibility (CPD) of the ration? (2 Marks)
- g. Given the digestibility of other nutrients as follows: NFE 75%, CF 65% and Fat 40%. Calculate the total digestible nutrients (TDN) of the ration in this heifer. (2 Marks)
- h. Why would you not recommend this diet to dairy farmers who desire high productivity? (2 Marks)
- i. Under what circumstance would you like to recommend this diet for dairy cows in her early lactation? (2 Marks)
- j. How would you justify your answer in 'h' above? (2 Marks)

QUESTION 2

- a. Discuss any **FOUR** factors that could affect the quantity and concentration of colostrum from a dairy cow. (8 Marks)
- b. It has generally been observed that calves do not take enough colostrum at birth. Discuss **TWO** methods farmers can use to encourage young calves to take enough milk to satisfy its rapid growth. (8 Marks)
- c. Explain the necessary precautions during weaning of calves to minimize stress and enhance performance? (9 Marks)

QUESTION 3

- a. Feeding of balanced amounts of rumen degradable protein (RDP) and undegradable dietary protein (UDP) to dairy animals is one of the best antidotes to protein deficiency? Justify this sentence with details of how you intend to satisfy the nutrient needs of such animal. **(10 Marks)**
- b. Explain the major differences between colostrum and milk **(5 Marks)**
- c. Discuss the various factors determining the fat content of milk in lactating cows. **(10 Marks)**

QUESTION 4

- a. By means of definitions only distinguish between silage and hay. **(4 Marks)**
- b. Describe in details all the steps involved in silage making **(10 Marks)**
- c. Mention any 5 physical and 5 chemical properties of a good silage **(5 Marks)**
- d. Discuss the role of any 3 silage additives during fermentation process **(6 marks)**

QUESTION 5

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

- a. Bloat **(5 Marks)**
- b. Grass tetany **(5 Marks)**
- c. Ketosis **(5 Marks)**
- d. Urinary calculi **(5 Marks)**
- e. Udder edema **(5 Marks)**