



2ND SEM. 2015/2016

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: B. Sc. ANIMAL SCIENCE DAIRY OPTION YEAR IV

COURSE CODE: ASD 402

TITLE OF PAPER: DAIRY TECHNOLOGY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY 4 QUESTIONS.

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THE CHIEF INVIGILATOR**

QUESTION 1

- a) Explain the technology for cottage scale butter making. (15 Marks)
- b) Describe and explain two types of milk that cannot be churned to butter. (10 Marks)

QUESTION 2

Milk samples from **THREE** (3) farms were analysed and the following results were obtained:

Test	Mahlanya	Sikhuphe	Hluthi
Lactometer reading (at 20°C)	18	28	35
Butter fat test (%)	3.6	4.2	2.2
Spread plates coliform colony numbers	20 from 10^{-5} dilution	30 from 10^{-2} dilution	167 from 10^{-2} dilution

- a) Calculate:
- The specific gravity of the milk samples (6 Marks)
 - The total solids of the milk samples (9 Marks)
 - Coliform counts of the samples (6 Marks)
- b) Comment on the quality of the milk samples (4 Marks)

QUESTION 3

- a) List and explain **FIVE** (5) major differences between casein and whey proteins (10 Marks)
- b) Describe and illustrate the following milk biomolecules
- Lactose (5 Marks)
 - Triacylglycerides (5 Marks)
 - Riboflavin (5 Marks)

QUESTION 4

Describe and illustrate the biochemical biosynthesis of milk triacylglycerides

(25 Marks)

QUESTIONS 5

Explain the major differences between the following:

- a) Ice milk and Ice cream (8 Marks)
- b) Lactoperoxidase system and hydrogen peroxide system (10 Marks)
- c) Yoghurt and Kefir (7 Marks)