



2ND SEM. 2016/2017

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

Compare and contrast the technologies of the following dairy products:

- a) Bulgarian milk and yoghurt (8 Marks)
- b) Ghee and butter (8 Marks)
- c) Acid cheese and sweet cheese (9 Marks)

QUESTION 2

Giving two examples in each case, and explain the differences between the following:

- a) Yeast culture and lactic acid bacteria culture (7 Marks)
- b) Coliform bacteria and lactic acid bacteria (7 Marks)
- c) Casein proteins and whey proteins (6 Marks)
- d) Saturated and unsaturated milk fatty acids (5 Marks)

QUESTION 3

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

| Test | Luyengo | Nkhaba | Hlatsi |
|---------------------------------------|----------------------------|----------------------------|-----------------------------|
| Lactometer reading (at 20°C) | 29 | 18 | 36 |
| Butter fat test (%) | 3.8 | 3.0 | 2.2 |
| Spread plates coliform colony numbers | 25 from 10^{-2} dilution | 30 from 10^{-5} dilution | 167 from 10^{-2} dilution |

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

QUESTION 4

Define butter and describe the steps you can take to produce butter from

Jersey milk

(25 Marks)

QUESTION 5

Explain and illustrate the biosynthesis of lactose in the mammary cell. (25 Marks)