



UNIVERSITY OF SWAZILAND

FACULTY OF HEALTH SCIENCES

**B.Sc. ENVIRONMENTAL HEALTH SCIENCE AND FOOD
SCIENCE**

SEMESTER II

FINAL EXAMINATION PAPER - MAY 2016

TITLE OF PAPER: PRINCIPLES OF DAIRY TECHNOLOGY

COURSE CODE: EHM324

DURATION: 2 HOURS

INSTRUCTIONS:

1. READ THE QUESTIONS CAREFULLY.
2. ANSWER ANY 4 QUESTIONS.
3. EACH QUESTION CARRIES 25 MARKS. WHERE A QUESTION IS SUBDIVIDED INTO PARTS, THE MARK FOR EACH PART IS SHOWN IN BRACKETS.
4. NO PAPER SHOULD BE BROUGHT INTO THE EXAMINATION ROOM.
5. WRITE NEATLY AND CLEARLY
6. BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER.

SPECIAL REQUIREMENTS: NONE

**DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE
INVIGILATOR.**

QUESTION 1

- a. Homogenised milk is more prone to lipolysis than the unhomogenised milk. Explain why this is so. [3 Marks]
- b. List 5 changes in milk that are caused by cooling. [5 Marks]
- c. Describe the effect of homogenization on the stability of fat globule membrane. [5 Marks]
- d. Discuss the factors that influence the variability of the composition of milk. [12 Marks]

[25 Marks]

QUESTION 2

- a. Discuss the factors that influence the natural creaming of milk. [12 Marks]
- b. What is the technological role of alkaline phosphatase in milk? [5 Marks]
- c. Explain how the peroxidase system in milk works and why it is important for small scale dairy farmers. [8 Marks]

[25 Marks]

QUESTION 3

- a. Describe the type of interaction between starter cultures used in yogurt manufacture. [5 Marks]
- b. Describe the properties of good quality butter. [10 Marks]
- c. Outline the steps followed in the manufacture of cheddar cheese. [10 Marks]

[25 Marks]

QUESTION 4

Platform tests are tests done on raw milk on reception at the dairy. Discuss five of these tests and explain the purpose of each one of them. [25 Marks]

QUESTION 5

- a. Describe the drying of milk under the following headings:
- i. Foam drying. [5 Marks]
 - ii. Freeze drying. [5 Marks]
 - iii. Atomisation during spray drying. [8 Marks]
- b. Describe the properties of evaporated milk. [7 Marks]

[25 Marks]

END OF QUESTION PAPER