



**UNIVERSITY OF
SWAZILAND**

FACULTY OF HEALTH SCIENCES

B.Sc. ENVIRONMENTAL HEALTH SCIENCE

MAIN EXAMINATIONS

TITLE OF PAPER: PRINCIPLES OF DAIRY TECHNOLOGY

COURSE CODE: EHM324

DURATION: 2 HOURS

DATE: MAY 2015

INSTRUCTIONS:

1. READ THE QUESTIONS CAREFULLY.
2. ANSWER ANY 4 OUT OF 5 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. BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER.

SPECIAL REQUIREMENTS: NONE

DO NOT OPEN THE QUESTION PAPER UNTIL INSTRUCTED TO DO SO BY THE INVIGILATOR.

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QUESTION 1

Discuss the technological importance of the following serum proteins in milk:

- a. Lactoperoxidase. [8]
- b. Lysozyme. [5]
- c. Lactoferrin. [5]
- d. Alkaline phosphatase. [7]

[25]

QUESTION 2

a. Discuss the stability of the colloidal structure of milk under the following conditions:

- i. Acidification. [5]
- ii. Heat treatment. [5]

b. Briefly discuss the factors influencing the natural creaming of milk. [15]

[25]

QUESTION 3

Write notes on the following products:

- a. Hardened ice cream. [10]
- b. Evaporated milk. [15]

[25]

QUESTION 4

a. Describe the role of the following ingredients in ice cream:

- i. Fat. [5]
- ii. Milk solids not fat. [5]

a. Discuss the advantages and disadvantages of using the following drying techniques for milk:

- i. Foam drying. [7]
- ii. Freeze drying. [8]

[25]

QUESTION 5

a. Discuss the principles and purpose of the following tests done on milk at reception at the dairy:

- i. Acidity test. [5]

- ii. Resazurin test. [5]
- iii. Aerobic Mesophilic Count. [5]
- iv. Freezing point determination. [5]
- v. Clot-on-boiling. [5]

[25]

END OF EXAMINATION