



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

**DIGREE IN ENVIRONMENTAL HEALTH WITH FOOD
SANITATION AND TECHNOLOGY**

FINAL EXAMINATION PAPER 2011

TITLE OF PAPER : DAIRY SCIENCES

COURSE CODE : EHS 506

DURATION : 2 HOURS

MARKS : 100

INSTRUCTIONS : READ THE QUESTIONS & INSTRUCTIONS
CAREFULLY

: ANSWER ANY **FOUR (4)** QUESTIONS

: EACH QUESTION CARRIES 25 MARKS.

: WRITE NEATLY & CLEARLY

:

BEGIN EACH QUESTION ON A SEPARATE SHEET OF
PAPER.

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

Question 1

Milk as a raw material for various processed food products is considered rich in nutrients. Give a detailed account of the composition of cow milk

[25 Marks]

Question 2

(a) Give an account of type of organisms used as starter cultures in the manufacture of fermented dairy products (Yogurt, Buttermilk, Sour Cream, Kefir) [12 Marks]

(b) You have been hired as a Food Consultant in a firm that produce yogurt. Outline how yogurt is manufactured. Suggest how you can influence the quality of the end product

[13 Marks]

Question 3

Write short notes on any five of the following concepts used in Dairy Technology

(i) Need to process milk

(ii) Standardization of milk

(iii) Homogenisation of milk

(iv) Synergistic growth of *Streptococcus thermophilus* and *Lactobacillus delbreckii* subsp. *bulgaricus*

(v) Buttermilk

(vi) Reconstituted milks

[25 Marks]

Questions 4

(a) Hazard Analysis Critical Control Point (HACCP) is an effective food safety and self-inspection plan that helps to identify possible food contamination risks and how to prevent them. The first stage in trying to establish HACCP in Food Processing Industry deals with Identifying Hazards. Briefly discuss what you understand about this stage of HACCP

[15 Marks]

(b) One of the preservation methods of milk is by pasteurization. Pasteurization does not kill bacteria spores, hence the need to sterilize milk. Outline the stages involved in sterilization of milk

[10 Marks]

Questions 5

(a) Outline the Overall objectives of production process in dairy Technology

[20 Marks]

(b) What change does cooling of milk bring to the product?

[5 Marks]