



**UNIVERSITY OF SWAZILAND**  
**Faculty of Health Sciences**

**BSc DEGREE IN ENVIRONMENTAL HEALTH WITH  
FOOD SANITATION AND TECHNOLOGY**

**FINAL EXAMINATION PAPER 2013**

- TITLE OF PAPER** : FOOD MICROBIOLOGY II
- COURSE CODE** : EHS 504
- DURATION** : 2 HOURS
- MARKS** : 100
- INSTRUCTIONS** :
- : READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
  - : ANSWER QUESTION ONE (1) AND ANY OTHER THREE (3) 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

- (a) Explain the term Hazard Analysis Critical Control Points (HACCP)? [3 Marks]
- (b) What are the main results that an effective HACCP can bring about in a food industry? [3 Marks]
- (c) As a graduate in Food Sanitation & Technology from University of Swaziland (UNISWA), describe how you would go about establishing HACCP at a Dairy Industry (Parmalat plc) in Swaziland.

[19 Marks]

## Question 2

- (a) Define the following terms
- (i) Quality [2 Marks]
  - (ii) Quality policy [2 Marks]
  - (iii) Food quality [2 Marks]
  - (iv) Quality management [2 Marks]
  - (v) Quality control [2 Marks]
- (b) You have been contracted to come up with a professional report with respect to how Swazi Can Company can improve the food quality and market of their products. What food quality factors would you concentrate on in your report? [8 Marks]
- (c) Use a diagram to illustrate the Critical Control Points (CCP) Decision Tree. [7 Marks]

## Question 3

- (a) Give an account of use of Modified Atmospheres Packaging (MAP) in Food Preservation with particular emphasis on forms of MAP [20 Marks]
- (b) Differentiate between Equilibrium-Modified Atmosphere (EMA) and Controlled-Atmosphere Packaging or Storage (CAP, CAS) [5 Marks]

## Questions 4

- (a) Food Standards and Quality Assurance covers areas on how food industries are expected to adhere to local and international laws that cover broad range of specific food products. What is the Codex Alimentarius? [10 Marks]
- (b) The content of Codex Alimentarius is composed of Volumes (1 – 14) or general requirements. One of the main exports of Swaziland is Sugar. Briefly outline the Volume under which you can put Sugar? [5 Marks]
- (c) Write short notes on any 5 volumes (other than the one covered under Question 5 b) under Codex Alimentarius that might be relevant to Swaziland. [10 Marks]

### **Questions 5**

- (a) What is Good Manufacturing Practices (GMP)? **[10 Marks]**
- (b) What aspects would you look at when choosing construction materials in food industry? **[10 Marks]**
- (c) What are three types of energies involved in Cleaning Technology? **[5 Marks]**