UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

BSc DIGREE IN ENVIRONMENTAL HEALTH WITH FOOD SANITATION AND TECHNOLOGY

FINAL EXAMINATION PAPER 2014

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

Write short notes on any five (5) pre-requisite programmes for Hazard Analysis Critical Control Point (HACCP). **[25 Marks]**

Question 2

(a) What is the primary objective of a food processor? **[2 Marks]**

(b) Describe main parts or components of food processing or process operation? **[3 Marks]**

(c) How does the followings terms vary from each other; food quality, quality, quality assurance, quality policy and quality control. **[10 Marks]**

(d) Determine how you would go about establishing critical limits. **[10 Marks]**

Question 3

(a) What is the scope of Codex Alimentarius? **[10 Marks]**

(b) Describe the contents of the volumes under Codex Alimentarius standards that any food processing plant must always adhere to. **[10 Marks]**

(c) Elaborate why the need to avoid environmental contamination at all stages of production is critical under the concept of Good Manufacturing Practices (GMPs). **[5 Marks]**

Question 4

(a) What are the basic requirements that an organization should meet in order to be considered for ISO 9000 series standards? **[5 Marks]**

(b) Use a diagram to illustrate the Critical Control Points (CCP) Decision Tree. **[10 Marks]**

(c) Briefly discuss quality aspects that are covered by ISO 9001, ISO 9002, ISO 9003 and ISO 9004 series. **[10 Marks]**

Question 5

(a) Differentiate between the principles behind ISO 10011 and ISO 19011. **[8 Marks]**

(b) Under modified atmosphere packaging (MAP), what food materials are preserved where the atmosphere are as follows;

(i) $0.01 - 0.07$ atm **[1 Mark]**

(ii) ≤ 0.01 atm **[1 Mark]**

(iii) $0.01 - 0.11$ atm **[1 Mark]**

(c) Discuss the primary effects of CO_2 on microorganisms in food preservation. **[10 Marks]**

(d) Differentiate between Equilibrium-Modified Atmosphere (EMA) and Controlled-Atmosphere Packaging or Storage (CAP, CAS) **[4 Marks]**