



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DEGREE IN ENVIRONMENTAL HEALTH
FINAL EXAMINATION PAPER 2005

- TITLE OF PAPER** : FOOD MICROBIOLOGY
- COURSE CODE** : EHS 512
- DURATION** : 3 HOURS
- MARKS** : 100
- INSTRUCTIONS** :
- : READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
 - : ANSWER ALL FIVE (5) QUESTIONS
 - : EACH QUESTION CARRIES 20 MARKS.
 - : WRITE NEATLY & CLEARLY
 - : NO PAPER SHOULD BE BROUGHT INTO NOR OUT OF THE EXAMINATION ROOM.
 - : 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. How do basic microbial classification based on morphology differ from those based on biochemical properties. [9]
- b. Explain the difference between the pour plate count and the spread plate count methods of microbial isolation. [6]
- c. What are probiotics bacteria and in what food and what species are added in Swaziland [5]

[20 Marks]

Question 2

- a. What (O) and (H) signify in the strain designation of *Escherichia coli* O157:H7? [4]
- b. Which two (2) foods are likely to be implicated in *E. coli* O157:H7 disease and why [4]
- c. Describe the procedure for a food sample preparation to be used for a total plate count in the laboratory. [12]

[20 Marks]

Question 3

- a. How would you ensure that meat before it leaves the abattoir, it is safe for the public consumption. [15]
- b. How does the environment in the abattoir influence the quality of meat? [5]

[20 Marks]

Question 4

A food outbreak has been reported in the old age home and the symptoms observed are indicative of Salmonellosis.

How would you then isolate the *Salmonella* species as per your suspicion [using traditional methods (Bacteriological Analytical Manual, BAM procedure)]?

The procedure should show

- Pre-enrichment [5]
- Selective enrichment [3]
- Isolation of *Salmonella* sp. [12]

[20 Marks]

Question 5

Develop a HACCP plan for the Swazi Can factory in the pineapple canning section.

Show all the necessary steps required.

[20]

[20 Marks]