

2ND SEM. 2011/12**UNIVERSITY****OF SWAZILAND****FINAL EXAMINATION PAPER**

PROGRAMME : YEAR III: BACHELOR OF SCIENCE IN:
• **FOOD SCIENCE, NUTRITION AND TECHNOLOGY**
• **CONSUMER SCIENCE**
• **CONSUMER SCIENCE EDUCATION**
YEAR IV: HOME ECONOMICS EDUCATION

COURSE CODE : FSNT 308/407

TITLE OF PAPER : FOOD PRESERVATION

TIME ALLOWED : TWO (2) HOURS

**INSTRUCTIONS : ANSWER QUESTION ONE (1)
AND ANY OTHER TWO (2) QUESTIONS**

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN
GRANTED BY THE CHIEF INVIGILATOR**

QUESTION 1 [COMPULSORY]

- a. Discuss the difference between food loss and food wastage. (10 marks)
- b. Explain two principal causes of food spoilage and discuss any two factors that can be manipulated to control each. (20 marks)
- c. In which ways can the rate of freezing affect the quality of frozen food products? (5 marks)
- d. What are the differences between Pasteurization and blanching? (5 marks)

(TOTAL MARKS = 40)

QUESTION 2

Mrs. Matsebula bought some mixed fruit jam in a bottle. It was difficult to open the bottle but, upon opening, it made a popping sound. She used some of the jam and kept the rest in the family refrigerator. After two weeks, she noticed mould growth on the surface of the jam.

- a. Explain to Mrs Matsebula the cause of the popping sound. (4 marks)
- b. Why could the moulds not grow inside the closed bottle? (6 marks)
- c. Discuss the possible factors that caused the moulds to grow on the jam after opening the bottle. (12 marks)
- d. What is the difference and similarities in the preservation principles of marmalade and pickles manufacture? (8 marks)

(TOTAL MARKS = 30)

QUESTION 3

- a. What do you understand by 'D', 'z' and 'F' values in reference to microbial destruction by heat?
(12 marks)
- b. The 'z' value of a reference micro-organism is 6° C. If it takes 20 minutes at 65° C to reduce the population of the organism by 12 D values, how long will it take to achieve the same destruction at 77° C? (*Show your working*)
(12 marks)
- c. Discuss the importance of pH in food preservation.
(8 marks)

(TOTAL MARKS = 30)

QUESTION 4

- a. Discuss two conditions under which the use of a legal preservative in foods is not permitted.
(10 marks)
- b. Discuss some of the concerns about the use of ionizing radiation in foods.
(10 marks)
- c. Describe two non-chemical ways that can be used to control weevils in stored grain.
(10 marks)

(TOTAL MARKS = 30)