



**2<sup>ND</sup> SEM. 2010**

**PAGE 1 OF 3**

**UNIVERSITY OF SWAZILAND  
FINAL EXAMINATION PAPER**

**PROGRAMMEE : BACHELOR OF SCIENCE IN FOODSCIENCE,  
NUTRITION AND TECHNOLOGY, HOME  
ECONOMICS, HOME ECONOMICS  
EDUCATION YEAR III**

**COURSE CODE : FSNT 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**

- a. Describe the major causes/agents of food deterioration.  
[10 marks]
- b. Discuss the preservative effects of thermal processing on foods and describe at least **five** main advantages of heat processing.  
(12 marks]
- c. Describe the main purposes, subsidiary purpose and minimum processing conditions of pasteurization of fruit juice, beer, milk, liquid egg and ice cream.
- d. Discuss four effects of UHT (Ultra-high temperature sterilization) processing on foods quality.  
[12 marks]
- e. Discuss three technical methods of reducing food deterioration during preservation.  
[6 marks]

**[Total = 40 marks]****QUESTION 2**

- a. Describe the general process flow diagram/chart for fruits and vegetables dehydration.  
[10 marks]
- b. Discuss food pipe line by using schematic diagram of the whole post harvest operations.  
[10 marks]
- c. Explain importance of the following in reducing losses of grains during storage and long term preservation.
- i. Sanitation
  - ii. Drying
  - iii. Aeration
  - iv. Controlled atmosphere
  - v. Irradiation

[10 marks]

**[Total = 30 marks]**

**QUESTION 3**

- a. Describe **two** major chemical changes which occur during food processing and preservation/storage which leads to deterioration in sensory quality of foods.

[10 marks]

- b. Discuss **two** major types of cleaning:-

- i. Dry cleaning
- ii. Wet cleaning

[5 marks]

- c. Discuss the following basic terminologies used in drying/dehydration as one of thermal processing technique for preservation.

- i. Dry-basis moisture content
- ii. Wet-basis moisture content
- iii. Dry mater
- iv. Water activity

[15 marks]

**[Total = 30 marks]****QUESTION 4**

- a. Describe the reasons why cleaning of foods should take place at the earliest opportunity in food processing.

[6 marks]

- b. Define size reduction and discuss three benefits of size reduction in food processing and preservation.

[8 marks]

- c. Discuss three component velocities induced in liquid foods by mixer during mixing.

[6 marks]

- d. Describe the general process flow chart for thermally processed tomato paste for extended shelf life.

[10 marks]

**[Total = 30 marks]**