



2ND SEM. 2013/14

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**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER**

**PROGRAMMES : BACHELOR OF SCIENCE IN FOOD SCIENCE,
NUTRITION AND TECHNOLOGY, YEAR III
CONSUMER SCIENCE EDUCATION, YEAR III
CONSUMER SCIENCE, YEAR III**

COURSE CODE : FSNT 308

TITLE OF PAPER : FOOD PRESERVATION

TIME ALLOWED : TWO (2) HOURS

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

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CHIEF INVIGILATOR**

QUESTION 1(COMPULSORY)

- (a) In general and, within the context of the **food situation** in Swaziland why is it important to preserve food. Discuss in detail. (15 Marks)
- (b) Explain **three (3)** policy instruments and **two (2)** programmes that the Government of Swaziland in partnership with other organizations or agencies have developed in response to the food situation you have described in (a) above in Swaziland. (15 Marks)
- (c) Food Hunger or '*Indlala*' is an undesirable situation that if left unchecked for a long time, can start an unpleasant vicious cycle. Explain the elements, stages and impact of this vicious cycle. (10 Marks)

[TOTAL MARKS = 40]

QUESTION 2

- (a)
- i. Why is the application and removal of heat considered methods of preservation in products where a long shelf life (+ 5 months) is intended? Illustrate your answer with appropriate examples. (8 Marks)
- ii. Identify and discuss **points or steps** you would consider **critical** in the preservation by the application or removal of heat. (12 Marks)
- (b) Describe and explain the theory, principles and practice underlying the following preservation methods. Explain also the advantages of preserving food using these methods.
- i. Dehydration (5 Marks)
- ii. Fermentation (5 Marks)

[TOTAL MARKS = 30]

QUESTION 3

Explain the role and function(s) of the following ingredients in the preservation of foods. Give appropriate examples of products where they are used as preservatives.

- (a) Sugar (5 Marks)
- (b) Acetic acid (5 Marks)
- (c) Salt (5 Marks)
- (d) Nitrites/nitrates (5 Marks)
- (e) Lactic acid bacteria (5 Marks)
- (f) Sulfites (sulfur dioxide) (5 Marks)

[TOTAL MARKS = 30]

QUESTION 4

You are required to make an orange and pineapple marmalade as a small business.

- (a) Identify and explain the role and function of the **ingredients and processes** that will be essential in making a safe, shelf stable and good quality marmalade. (10 Marks)
- (b) Make a process flow chart/diagram and indicate the critical stages that when properly controlled will assure you of good quality marmalade. (6 Marks)
- (c) How would you make sure that your marmalade is of a consistent quality over the years? (6 Marks)
- (d) Show or demonstrate how you would calculate the cost of your product. (8 Marks)

[TOTAL MARKS = 30]