



UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME : **DIP. IN HE YEAR 3**
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COURSE CODE : **FN 302**

TITLE OF PAPER : **FOOD PRESERVATION**

TIME ALLOWED : **TWO (2) HOURS**

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

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THE CHIEF INVIGILATOR

Question 1 [Compulsory Question]

- (a) List **10** reasons for food preservation. [10 marks]
- (b) Write notes on food preservation by drying and dehydration. [10 marks]
- (c) The concept of 'hurdle technology' may be applied to the preservation of food by fermentation. List **5** 'hurdles' that must be overcome by spoilage organisms in the production of yogurt. [5 marks]
- (d) Write notes on 'food spoilage'. [15 marks]
- [Total = 40 marks]

Question 2

Explain the following physical methods of food preservation:

- (a)
- i. Controlled atmospheres and Modified Atmosphere Packaging (MAP). [10 marks]
 - ii. Smoking. [10 marks]
- (b) List **4** determinants of food quality that must be considered prior to selecting a suitable preservation technique. [4 marks]
- (c) List **6** disadvantages of food irradiation. [6 marks]
- [Total = 30 marks]

Question 3

(a) Compare and contrast the use of 'pasteurization' to 'sterilization' in food preservation. [10 marks]

(b) Explain the main changes that take place in frozen food during storage. [10 marks]

(c) Define the following terms used in the preservation of food by heating:

(i) F-value. [3 marks]

(ii) D-value. [2 marks]

(d) List 5 factors that affect the heat resistance of microorganisms. [5 marks]

[Total = 30 marks]

Question 4

(a) The preservation of food allows us to live a more 'convenient' life; however even preserved food must be treated with care.

From the preservation techniques listed in Table 1, match the food types listed in Table 2 with techniques (Table 1) commonly used to preserve the food.

Table 1 Preservation Techniques

| |
|---------------------------------------|
| Blanching and freezing |
| Salting and pasteurisation |
| Freeze-drying |
| 'Botulinum cook' |
| Added sugar |
| Addition of nitrate/nitrite chemicals |

Table 2 Food Types

| Food Type | Preservation technique |
|---------------------|------------------------|
| Canned cured ham | |
| Packaged fresh peas | |
| Canned salmon | |
| Marmalade | |
| Meat preservation | |
| Instant coffee | |

Note: Copy Table 2 into your answer book and fill the preservation technique

[12 marks]

(b) Name **8** good practice actions that may be used when storing frozen food for long periods. [8 marks]

(c) Explain the term, 'blanching'. [5 marks]

(d) List **5** functions of blanching of food. [5 marks]

[Total = 30 marks]

END OF QUESTION PAPER