

1<sup>ST</sup> SEM. 2019/2020



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**UNIVERSITY OF ESWATINI  
FINAL EXAMINATION PAPER**

- PROGRAMME : BACHELOR OF SCIENCE IN FOOD SCIENCE, NUTRITION AND TECHNOLOGY, CONSUMER SCIENCE, CONSUMER SCIENCE EDUCATION YEAR IV**
- COURSE CODE : FNS405**
- TITLE OF PAPER : FOOD PRESERVATION**
- TIME ALLOWED : TWO (2) HOURS**
- INSTRUCTIONS : ANSWER QUESTION ONE (1) AND ANY OTHER (2) QUESTIONS**

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FNS405 (M)

**QUESTION 1 |COMPULSORY|**

- (a) Explain the following terms, citing examples in each case: - (10 Marks)  
 i. Food preservation [6 Marks]  
 ii. Gamma radiation [4 Marks]
- (b) Explain **four (4)** effects of canning on the nutritional quality of food. (10 Marks)
- (c) Discuss using **five (5)** points, the importance of food preservation. (10 Marks)
- (d) Discuss **five (5)** conditions for spoilage. (10 Marks)

[TOTAL = 40 Marks]

**QUESTION 2**

Discuss in detail **two (2)** mild heat treatment techniques and **one (1)** severe heat treatment technique applied in thermal processing, giving examples where appropriate. (30 Marks)

[TOTAL = 30 Marks]

**QUESTION 3**

- (a) Many food products owe their production and characteristics to the fermentative activities of microorganisms.
- i. State the name of the important microorganisms used in food fermentations. (5 Marks)
- ii. Explain the **two (2)** major functions of these microorganisms (10 Marks)
- iii. Give **five (5)** examples of food products made using these fermentative organisms. (5 Marks)
- (b) Discuss the concerns/issues related to the following methods of preservation: -
- i. Refrigeration
- ii. Freezing (10 Marks)

[TOTAL = 30 Marks]

**QUESTION 4**

The terms controlled atmosphere (CA) and modified atmosphere (MA) imply using an atmospheric compositions that is different from air, but they differ in the degree of their control of the gases concentrations.

- i. Explain the difference between MAP and CAP.  
(10 Marks)
- ii. Discuss **three (3)** potential benefits of CA and **two (2)** potential harmful effects of CA.  
(10 Marks)
- iii. Discuss the **two (2)** general applications of MA and CA in commercial practice.  
(10 Marks)

[TOTAL = 30 Marks]