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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME** : BACHELOR OF SCIENCE IN FOOD  
SCIENCE, NUTRITION AND TECHNOLOGY  
YEAR IV

**COURSE CODE** : FSNT 409

**TITLE OF PAPER** : FOOD PROCESSING II

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

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

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GRANTED BY THE CHIEF INVIGILATOR**

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**QUESTION 1 (COMPULSORY)**

(a) Name the main **two (2)** causes of food deterioration and explain **two (2)** processing methods that could be used to slow down each cause. **(12 Marks)**

(b) Explain **three (3)** factors that affect the melting point of fatty acids.  
**(3 Marks)**

(c) Briefly explain **two (2)** reasons for including the following steps in oil processing and explain how it is done:-

- i. Seed cleaning **(7 Marks)**
- ii. Size Reduction **(6 Marks)**
- iii. Dehulling **(6 Marks)**
- iv. Optional oil seed conditioning **(6 Marks)**

**(TOTAL MARKS = 40)**

**QUESTION 2**

(a) What substances are removed in the following oil processing steps?

- i. Acid degumming **(3 Marks)**
- ii. Neutralization **(3 Marks)**
- iii. Washing **(3 Marks)**
- iv. Vacuum drying **(3 Marks)**
- v. Bleaching **(3 Marks)**
- vi. Deodorization. **(3 Marks)**

(b) Describe the following steps in fruit juice processing:-

- i. Juice clarification **(4 Marks)**
- ii. Deaeration **(4 Marks)**
- iii. Pasteurization **(4 Marks)**

**(TOTAL MARKS = 30)**

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**QUESTION 3**

- (a) Describe the process for manufacturing the following:-  
i. Butter (10 Marks)  
ii. Mayonnaise (4 Marks)
- (b) Explain the following process steps in beer manufacturing:-  
i. Malting (6 Marks)  
ii. Mashing (6 Marks)  
iii. Lautering (4 Marks)

**(TOTAL MARKS = 30)**

**QUESTION 4**

- (a) Describe the process steps for black tea production (15 Marks)
- (b) Given the following ingredient and explain a process you would use to make mint flavoured green hard candy, clearly indicating the order in which the ingredients are added. (5 Marks)

Ingredients  
Sugar  
Corn syrup  
Water  
Flavouring  
Colouring

- (c) Briefly discuss the function of the following ingredient used in the soft drink industry:-  
i. Water (2 Marks)  
ii. Acid (2 Marks)  
iii. Sweeteners (2 Marks)  
iv. Preservatives (2 Marks)  
v. Carbon dioxide (2 Marks)

**(TOTAL MARKS = 30)**

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