



1<sup>ST</sup> SEM. 2018/19

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UNIVERSITY OF ESWATINI

FINAL EXAMINATION PAPER

**PROGRAMME** : **BACHELOR OF SCIENCE IN FOOD  
SCIENCE, NUTRITION AND TECHNOLOGY  
LEVEL 3 & YEAR IV**

**COURSE CODE** : **FNS307 / FSNT409**

**TITLE OF PAPER** : **FOOD PROCESSING II**

**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 (COMPULSORY)**

- (a) Discuss the following basic processes that lead to spoilage of food and explain **two (2)** ways in which they can be slowed down or stopped :
- i) Chemical and biochemical reactions (6 Marks)
  - ii) Attack by microorganisms. (8 Marks)
- (b) Differentiate between fats and oil and explain the composition of true or simple fats. (10 Marks)
- (c) Discuss the substances that are removed during vegetable oil refining. (16 Marks)

[TOTAL MARKS = 40]

**QUESTION 2**

- (a) Discuss the following process steps in oil processing.
- i) Oil extraction methods (14 Marks)
  - ii) Hydrogenation (7 Marks)
- (b) Explain the following process steps in beer manufacturing:-
- i) Mashing (6 Marks)
  - ii) Lautering (3 Marks)

[TOTAL MARKS = 30]

**QUESTION 3**

- (a) Explain the process for making butter from milk fat (cream) (16 Marks)
- (b) Briefly discuss the function of the following ingredient used in the soft drink industry:-
- i. Water (2 Marks)
  - ii. Acid (4 Marks)
  - iii. Sweeteners (4 Marks)
  - iv. Preservatives and (2 Marks)
  - v. Carbon dioxide (2 Marks)

[TOTAL MARKS = 30]

**QUESTION 4**

- (a) Describe the following steps in fruit juice processing:-
- i) Juice clarification **(4 Marks)**
  - ii) Deaeration **(4 Marks)**
  - iii) Pasteurization **(4 Marks)**
- (b) Explain steps in a water treatment plant with the aid of a drawing. **(18 Marks)**

**[TOTAL MARKS = 30]**