



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

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UNIVERSITY OF ESWATINI

SUPPLEMENTARY / RESIT EXAMINATION PAPER

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

**COURSE CODE** : **FSNT 409 / FNS307**

**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) Name the **two (2)** main causes of food deterioration and explain **two (2)** processing methods that could be used to slow down each cause.  
(12 Marks)
- (b) Discuss the use of cereal adjuncts in beer manufacturing.  
(8 Marks)
- (c) Explain the following steps in fruit juice manufacturing:-  
i. Clarification  
ii. Deaeration  
iii. Pasteurization  
(12 Marks)
- (d) Discuss the oxygenation process in beer processing  
(8 Marks)

[TOTAL MARKS = 40]

**QUESTION 2**

- (a) Briefly discuss the following oil refining steps:-  
i. Water degumming  
ii. Neutralization  
iii. Bleaching  
(20 Marks)
- (b) Draw a flow diagram for red wine processing.  
(10 Marks)

[TOTAL MARKS = 30]

**QUESTION 3**

- (a) Explain the following quality parameters used in fats and oils:-  
i. Acid value  
ii. Saponification value

**(10 Marks)**

- (b) Discuss the following butter processing steps:-  
i. Pasteurization  
ii. Aging  
iii. Cooling and churning

**(10 Marks)**

- (c) Discuss inter- and intraesterification processes.

**(10 Marks)**

**[TOTAL MARKS = 30]**

**QUESTION 4**

- (a) Explain the process steps for oolong tea production.

**(15 Marks)**

- (b) Briefly describe the following steps:-  
i. Carbonation in soft drinks  
ii. Boiling in candy making

**(5 Marks)**

- (c) Explain **five (5)** changes that take place during the brewing of beer in the kettle.

**(10 Marks)**

**[TOTAL MARKS = 30]**