



**1<sup>ST</sup> SEM. 2017/18**

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**UNIVERSITY OF SWAZILAND**

**SUPPLEMENTARY EXAMINATION PAPER**

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

**COURSE CODE : FNS 307 / 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**

**QUESTION 1 (COMPULSORY)**

- (a) Discuss the methods used to extract fat or oil from the following sources.
- i. Animal tissue
  - ii. Oil seeds

(20 Marks)

- (b) Discuss the use of cereal adjuncts in beer brewing.

(8 Marks)

- (c) Explain the following steps in fruit juice manufacturing:-
- i. Clarification
  - ii. Deaeration
  - iii. Pasteurization

(12 Marks)

[TOTAL MARKS = 40]

**QUESTION 2**

- (a) Briefly discuss the following oil refining processing steps:-
- i. Water Degumming
  - ii. Neutralization
  - iii. Bleaching
  - iv. Deodorization.

(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]