



**1<sup>ST</sup> SEM. 2012/13**

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**UNIVERSITY OF SWAZILAND**

**SUPPLEMENTARY 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**

**QUESTION 1 (COMPULSORY)**

- a) Discuss **three (3)** processing methods that could be utilized to reduce the rate of deteriorative changes in food due to biochemical reactions and spoilage by microorganisms.  
(6 Marks)
- b) Discuss a method that could be used to extract fat or oil from the following sources.  
i. Animal tissue  
ii. Sunflower seed  
(8 Marks)
- c) Explain why and at what stages are cereal adjuncts and hops added during the beer manufacturing process  
(4 Marks)
- d) What is the definition for fruits and vegetables in food science?  
(4 Marks)
- e) Explain the following steps in fruit juice manufacturing:-  
i. Clarification  
ii. Deaeration  
iii. Pasteurization  
(12 Marks)
- f) What is the formula for apparent purity of sugar?  
(6 Marks)

**[TOTAL MARKS = 40]**

**QUESTION 2**

- a) Explain the following oil refining processing steps:-  
i. Degumming  
ii. Neutralization  
iii. Bleaching  
iv. Deodorization.  
(16 Marks)
- b) Draw a flow diagram for red wine processing and explain each process step  
(14 Marks)

**[TOTAL MARKS = 30]**

**QUESTION 3**

a) Explain the following quality parameters used in fats and oils.

- i. Acid value
- ii. Saponification value

**(6 Marks)**

b) Discuss the following butter processing steps

- i. Pasteurization
- ii. Aging
- iii. Cooling and churning

**(9 Marks)**

c) Explain the process that is used to form  $\beta'$ -crystals in fats.

**(5 Marks)**

d) What is inter- and intraesterification processes?

**(10 Marks)**

**[TOTAL MARKS = 30]**

**QUESTION 4**

a) Explain the process steps for oolong tea production

**(15 Marks)**

b) Describe the following steps in coffee production:-

- i. Fermentation
- ii. Drying
- iii. Milling
- iv. Roasting
- v. Decaffeination

**(15 Marks)**

**[TOTAL MARKS = 30]**