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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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QUESTION 1 (COMPULSORY)

a) Give **three (3)** reasons for processing food.

(6 Marks)

b) Name **three (3)** processing methods that are capable of destroying microorganisms in food.

(6 Marks)

c) Draw generic chemical structures of the following compounds:-

i. Glycerol
ii. Free fatty acid
iii. Triaglyceride

(12 Marks)

d) How does the chain length and degree of saturation of a fatty acid affect the melting point of a fat or oil.

(4 Marks)

e) Explain the following processes for extracting fats and oils from animal and plant tissue.

i. Rendering
ii. Pressure expulsion
iii. Solvent extraction

(12 Marks)

(TOTAL MARKS = 40)

QUESTION 2

a) Draw a flow chart and explain the process steps for the production of cooking oil from sunflower seeds.

(24 Marks)

b) Describe the following steps in wine making:-

i. Crushing and SO_2 addition
ii. Maceration and partial fermentation
iii. Aging

(6 Marks)

(TOTAL MARKS = 30)

QUESTION 3

a) Explain the following quality parameters for fats and oils:
   i. Iodine value
   ii. Peroxide value

(6 Marks)

b) Explain how you would produce mayonnaise using sunflower oil.

(9 Marks)

c) Discuss the following process steps in beer manufacturing:-
   i. Malting **(5 Marks)**
   ii. Mashing **(5 Marks)**
   iii. Fermentation **(3 Marks)**
   iv. Lagering **(2 Marks)**

(TOTAL MARKS = 30)

QUESTION 4

a) Describe the process steps for black tea production

(15 Marks)

b) Explain the following sugar manufacturing process steps
   i. Clarification
   ii. Crystallization

(10 Marks)

c) What is polarization?

(5 Marks)
(TOTAL MARKS = 30)