



UNIVERSITY

OF SWAZILAND

2ND SEM. 2009/2010

SUPPLEMENTARY EXAMINATION

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

COURSE CODE : FSNT 406

TITLE OF PAPER : FERMENTATION TECHNOLOGY

TIME ALLOWED : TWO (2) HOURS

**INSTRUCTIONS : ANSWER QUESTION ONE (1)
AND ANY OTHER (3) QUESTIONS**

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GRANTED BY THE CHIEF INVIGILATOR**

QUESTION ONE [COMPULSORY]

- a. As a manufacturer, show how you would manipulate the fermentation process of molasses to maximize either alcohol production or yeast cells.
(8 Marks)
- b. Define the terms sweet wine, fortified wine, table wine and dry wine
(8 Marks)
- c. What is the importance of malting in beer making?
(8 marks)
- d. Discuss the importance of fermented foods in human nutrition
(16 marks)

[Total Marks = 40]**QUESTION TWO**

- a. What are the major microorganisms that are involved in sauerkraut fermentation?
(5 marks)
- b. Discuss precautions you would take in sauerkraut manufacture to ensure a high quality product.
(15 marks)

[TOTAL MARKS = 20]**QUESTION THREE**

Explain the main functions of mashing, brewing, fermentation and lagering in beer manufacture from barley malt

[TOTAL MARKS = 20]

QUESTION FOUR

- a. Two students were involved in alcoholic fermentation experiments using the same sugar cane juice with similar sugar concentration. After 7 days, the alcohol contents were 12% and 4%. Discuss the possible causes of the difference.

(10 marks)

- b. Discuss the main steps in the manufacture of red wine

(10 Marks)

[TOTAL MARKS = 20]

QUESTION FIVE

- a. Discuss ways in which temperature can be used to ensure the manufacture of good quality yoghurt.

(10 Marks)

- b. Compare and contrast the manufacture of a fermented milk product using starter culture and using spontaneous fermentation.

(10 marks)

[TOTAL MARKS = 20]