



2ND SEM. 2008/2009

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UNIVERSITY OF SWAZILAND

FINAL 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 TWO (2) QUESTIONS**

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN
GRANTED BY THE CHIEF INVIGILATOR**

QUESTION 1 [COMPULSORY]

- a) What are the differences between fermentation with addition of starter culture and spontaneous fermentation processes?
(12 Marks)
 - b) What are probiotic bacteria and what are their benefits to the consumers
(12 Marks)
 - c) Briefly discuss the major processing steps in red wine manufacture
(16 Marks)
- [Total Marks = 40]**

QUESTION 2

- a) Discuss the preservation principles involved in pickling.
(15 Marks)
 - b) Give the major microorganisms involved in sauerkraut fermentations and the conditions influencing their activity
(15 marks)
- [TOTAL MARKS = 30]**

QUESTION 3

Discuss practical ways of minimizing chances of contamination during manufacture and handling of dairy starter cultures?

(TOTAL MARKS = 30)

QUESTION 4

- a) Draw a graph of bacteria cell concentration against time and explain the likely activity in each major stage.
(14 Marks)
- b) Explain the main functions of mashing, brewing, fermentation and lagering in beer manufacture from barley malt
(16 Marks)

[TOTAL MARKS = 30]