



2nd SEM. 2017/18

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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 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) A food processor is engaged in fermented products business using a batch mode of fermentation. Advise him:
- i. on the ways of running (operating) the fermentation process to get maximum product yield and (10 Marks)
 - ii. on the consequences if the process is not run properly (10 marks)
- b) Explain how pH and Temperature affect the fermentation process of dairy starter cultures (10 marks)
- c) With the help of a sketch, describe the different feeding strategies in fed-batch mode of fermentation (10 Marks)
- d) Describe solid state fermentation including its advantages. (10 Marks)

[TOTAL MARKS = 40]

QUESTION 2

- (a) Explain the following: (4x5 = 20 Marks)
- i. Keiving
 - ii. Backslopping method
 - iii. Mixed or undefined cultures
 - iv. Air lift fermenter (use sketch)
- (b) Identify five (5) desirable characteristics of wine cultures. (10 Marks)

[TOTAL MARKS = 30]

QUESTION 3

- (a) Describe the succession phenomenon in the fermentation of cabbage. (15 Marks)
- (b) Describe the Manufacture of Fermented Sausage. (15 Marks)

TOTAL MARKS = 30]

QUESTION 4

- (a) Describe essential steps in the manufacture of cheese. (15 Marks)
- (b) Identify and describe the treatment before fermentation of cider and perry. (15 Marks)

[TOTAL MARKS = 30]