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2nd SEM. 2016/17

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.

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QUESTION 1 (COMPULSORY)

(a) A processor realized that the quality attributes of his fermented product like color, aroma, taste and texture could not be attained simultaneously in the course of the fermentation. Advise him on the mode of fermentation he should use. **(13 Marks)**

(b) Discuss the ways to induce or initiate food fermentation. **(15 Marks)**

(c) Describe **two (2)** systems of solid state fermentation based on the nature of solid phase used. **(12 Marks)**

[TOTAL MARKS = 40]

QUESTION 2

(a) Explain the following: **(20 Marks)**

i. Defined culture
ii. Air lift fermenter (use sketch)
iii. Stepwise infusion
iv. Syneresis

(b) Name bioreactors for liquid state fermentation and describe any **one (1)** further. **(10 Marks)**

[TOTAL MARKS = 30]

QUESTION 3

(a) Describe the trickling generator process and outline its merit over the open vat process. **(10 Marks)**

(b) Identify and describe the upstream and downstream processes in the manufacturing of cider. **(10 Marks)**

(c) Discuss the importance of salt in sauerkraut fermentation paying attention on the purpose of salt and the effect of high and low salt concentration. **(10 Marks)**

[TOTAL MARKS = 30]

QUESTION 4

(a) Describe production of industrial starter cultures using a flow chart. **(15 Marks)**

(b) Discuss the essential process steps in cheese making. **(15 Marks)**

[TOTAL MARKS = 30]