



TECHNICAL UNIVERSITY OF MOMBASA
FACULTY OF APPLIED AND HEALTH SCIENCES
DEPARTMENT OF PURE & APPLIED SCIENCES
UNIVERSITY EXAMINATION FOR:
BACHELOR OF TECHNOLOGY

ABT 4309: FEMENTATION TECHNOLOGY II

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2HOURS

DATE: 11 May 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

(a) (i) Define antibiotics (1marks)

(ii) Explain the use of antibiotics and their mode of action (3marks)

(b) State TWO uses of:

(i) Organic solvents (2marks)

(ii) Amino acids (2marks)

(iii) Give THREE advantages of using microbial enzymes rather than chemical processes
(3marks)

(c) Define the following alcoholic beverages:

(i) Beer **(1mark)**

(ii) Distilled Spirits **(1mark)**

(iii) Cider **(1mark)**

(iv) Describe THREE types of wines **(3marks)**

(v) Give the TWO roles of sulphur dioxide in winemaking **(2marks)**

(d) (i) Define single cell protein (SCP) **(1mark)**

(ii) List THREE advantages of SCP **(3marks)**

(e) (i) Give TWO roles of lactic acid bacteria in the food industry **(2marks)**

(ii) Explain the importance of food fermentations **(3marks)**

(iii) Outline TWO functions of salt in the fermentation of vegetables **(2marks)**

Question TWO

Outline the manufacture of the following:

(a) Yoghurt **(10marks)**

(b) Fermented cabbage (sauerkraut) **(10marks)**

Question THREE

(a) With the aid of a flowchart, explain the manufacture of citric acid **(16marks)**

(b) Outline 4 uses of citric acid giving an example of each product **(4marks)**

Question FOUR

Discuss the beer manufacturing process under the following:

- (a) Raw materials and malting (4marks)
- (b) Mashing (5marks)
- (c) Brewing (4marks)
- (d) Fermentation and maturation (7marks)

Question FIVE

- (a) Define vaccines and explain briefly how vaccines work (4marks)
- (b) Describe THREE types of vaccines (6marks)
- (c) Outline the fermentation of vaccines (10marks)