



Technical University of Mombasa

Faculty of Applied and Health Sciences

DEPARTMENT OF PURE AND APPLIED SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF
TECHNOLOGY IN APPLIED CHEMISTRY
BTAC

ABT 4401: FERMENTATION TECHNOLOGY

SPECIAL/SUPPLEMENTARY EXAMINATION

OCTOBER 2013 SERIES

2 HOURS

Instructions to candidates:

This paper consist of **FIVE** questions

Answer question **ONE** (compulsory) and any other **TWO** questions

Question ONE

- a) (i) Define fermentation technology **(1mark)**
- (ii) Outline the importance of fermentation technology to man **(3marks)**
- (iii) Name TWO microorganisms most commonly used in the fermentation industry
(1mark)
- b) (i) Briefly describe TWO types of microbial cultures **(4marks)**
- (ii) State THREE properties of important industrial microorganisms **(3marks)**
- (iii) Explain the importance of monitoring pH and concentration of sugar during fermentation **(4marks)**

- c) (i) Differentiate between primary and secondary metabolites (4marks)
- (ii) State TWO food grade acids produced vitamins (1mark)
- d) Outline FOUR benefits of fermented foods to the consumer (4marks)
- e) (i) State TWO uses of amino acids in the food industry (2marks)
- (ii) Giving examples, outline, the uses of citric acid (2marks)

Question TWO

- a) Discuss biotransformations/ biocomersions (12marks)
- b) Explain the use of probiotics in the diet. (8marks)

Question THREE

- a) Explain the process of making grapevine under the following:
 - (i) Harvesting and determine grapes (2marks)
 - (ii) Crushing and primary fermentation (8marks)
 - (iii) Secondary fermentation and bulk aging (3marks)
 - (iv) Blending, preservation, filtration & bottling (3marks)
- b) Briefly describe FOUR types of wines (4marks)

Question FOUR

- a) Explain the manufacture of the following:
 - i) Yoghurt (10marks)
 - ii) Fermented cabbage (10marks)

Question FIVE

Discuss single cell protein (20marks)