



**TECHNICAL UNIVERSITY OF MOMBASA**  

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**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.**

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**Question ONE**

(a) Differentiate between:

- (i) Maceration and Vinification **(4marks)**
- (ii) Port and Sherry wines **(2marks)**
- (iii) Briefly describe malting of barley **(3marks)**

(b) (i) Describe **TWO** types of food fermentations **(2marks)**

(ii) Explain **THREE** effects of fermentation on food products **(3marks)**

- (c) (i) Outline the stages of amino acid production **(3marks)**  
(ii) State TWO advantages of producing amino acids through fermentation **(2marks)**
- (d) (i) Differentiate between submerged and solid-state fermentation of enzymes **(2marks)**  
(ii) Give THREE applications of enzymes in Fermentation Technology **(3marks)**
- (e) (i) Define vinegar and briefly explain how it's produced **(3marks)**  
(ii) State THREE advantages of Bioethanol over petrol **(3marks)**

### **Question TWO**

Outline the manufacture of:

- (a) Cheddar Cheese **(10marks)**  
(b) Fermented Cucumbers (pickles) **(10marks)**

### **Question THREE**

Describe the manufacture of vodka under the following subheadings:

- (a) Raw materials **(2marks)**  
(b) Mash preparation and fermentation **(6marks)**  
(c) Distillation and rectification **(6marks)**  
(d) Filtration and purification **(3marks)**  
(e) Dilution and bottling **(3marks)**

### **Question FOUR**

- (a) Discuss the discovery and history of antibiotics **(10marks)**  
(b) Explain the production antibiotics by fermentation **(10marks)**

**Question FIVE**

(a) Discuss Single Cell Protein (SCP) and its role in Global Food Security **(10marks)**

(b) Outline the manufacture of Single Cell Protein **(10marks)**