



Technical University of Mombasa

Faculty of Applied and Health Sciences

DEPARTMENT OF PURE AND APPLIED SCIENCES

DIPLOMA IN INDUSTRIAL MICROBIOLOGY AND BIOTECHNOLOGY
(DIMBT 11M)

ABT 2305: INDUSTRIAL FERMENTATION

SEMESTER: EXAMINATIONS

SERIES: DECEMBER 2013

TIME: 2 HOURS

INSTRUCTIONS:

You should have the following for this paper

- *Answer booklet*

This paper consists of **FIVE** questions.

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

This paper consists of 2 PRINTED pages

Question ONE

- a) Define the following
 - (i) Vinegar (1mark)
 - (ii) Fermentation (1mark)
 - (iii) Bioethanol (1mark)
- b) Outline the distinguishing features of wines, beers and distilled spirits (6marks)
- c) State SIX factors affecting growth of microorganisms in wine (6marks)
- d) Explain the ways of maximizing parameters of fermentation (6marks)
- e) Outline THREE examples of antibiotics produced by microbial fermentation (3marks)
- f) Highlight SIX examples of primary and secondary metabolites produced by fermentation. (6marks)

Question TWO

- a) Discuss the properties of microorganisms of Industrial significance (10marks)
- b) State the importance of fermentation (5marks)

Question THREE

Discuss the following types of microbial cultures

- (i) Batch (3marks)
- (ii) Feb batch (8marks)
- (iii) Continuous (4marks)

Question FOUR

- a) Describe the production of microbial polysaccharide (10marks)
- b) Discuss the application of immobilized cells (5marks)

Question FIVE

- a) Describe the production of yoghurt (10marks)
- b) Outline the ways of preventing spoilage of yoghurt (5marks)