



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 INDUSTRIAL MICROBIOLOGY AND BIOTECHNOLOGY
BTMBT 11M

ABT 4307: PROTEIN BIOTECHNOLOGY

SEMESTER EXAMINATION

DECEMBER 2013 SERIES

2 HOURS

Instructions to candidates:

This paper consist of **FIVE** questions

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

QUESTION ONE

- State the significance of cell immobilization in the production of recombinant proteins
(6 marks)
- Outline factors to be considered when choosing a protein expression system (6 marks)
- Highlight the characteristics of *Bacillus* that makes it a good protein expression system
(6 marks)
- Saccharomyces cerevisias* is a natural fermenters explain its benefits in production of recombinant proteins
(6 marks)
- Explain the significance of industrial proteins giving specific examples (6 marks)

QUESTION TWO

Discuss the disadvantages of *E Coli* as a protein expression system stating strategy used to increase the efficiency of expression **(20 marks)**

QUESTION THREE

Discuss the merits and demerits of using mammalian cells in production of recombinant proteins **(20 marks)**

QUESTION FOUR

Discuss the application of the following enzymes in relation to health care and diagnosis

- (i) Transaminase **(8 marks)**
- (ii) Lactate dehydrogenase **(12 marks)**

QUESTION FIVE

With relevant example discuss the application of protein engineering in food and detergent industries **(20 marks)**