



TECHNICAL UNIVERSITY OF MOMBASA

School of Applied and Health Sciences
DEPARTMENT OF PURE AND APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:
BACHELOR OF TECHNOLOGY IN INDUSTRIAL MICROBIOLOGY AND
BIOTECHNOLOGY

ABT 4308: PROTEIN AND ENZYME II
SPECIAL /SUPPLEMENTARY EXAMINATION

SERIES: JULY 2025 SERIES

TIME: 2 HOURS

DATE: JULY, 2025

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

- Using examples highlight enzymes allosterically regulated using covalent modification (6 marks)
- Outline examples demonstrating enzymatic reactions regulated through induction and repression. (8 marks)
- Using examples highlight enzymes allosterically regulated using covalent modification (6 marks)
- Explain product inhibition pattern for common bi-reactant mechanisms (10 marks)

Question TWO

Discuss the lysozyme catalytic mechanism (20 marks)

Question THREE

Describe the reaction mechanism of chymotrypsin (20 marks)

Question FOUR

Describe the following forms of bi-substrate reactions

- a) Ordered sequential (10 marks)
- b) Random sequential (10 marks)

Question FIVE

Identification of enzyme inhibitor that can be used in control of micro-organism (drugs). (20 marks)