TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

BACHELOR OF TECHNOLOGY IN MICROBIOLOGY AND BIOTECHNOLOGY

ABT 4308: PROTEINS AND ENZYMES II

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2 HOURS

DATE: 12 May 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of Choose No questions. Attempt Choose instruction.

Do not write on the question paper.

Question ONE

a) Highlight the difference between uni-substrate and bi-substrate enzyme catalyzed reactions (4mks)

b) Describe the use of serum enzymes in medical diagnostics (3mks)

c) Outline different mechanisms of controlling the quantity of an enzyme in a metabolic reaction (4mks)

d) Highlight any three different models that represent enzyme-substrate binding (6mks)

e) Describe the role of a 3-dimensional cleft in an enzyme active site (6mks)

f) Highlight four industrial application of enzyme inhibitors (4mks)

g) Illustrate the difference between competitive and non competitive inhibitions (3mks)

Question TWO

a) Outline the properties affecting binding of a substrate to the enzyme (15mks)

b) Highlight the specificity of an enzyme active site (5mks)

Question THREE

Discuss the role of the following in catalysis
a) Prosthetic Groups (6mks)
b) Cofactors (5mks)
c) Coenzymes (4mks)
d) Ping-pong reaction mechanism (5mks)

Question FOUR

Discuss the role of the following in controlling the quantity of enzyme in a metabolic reaction
a) Rate of synthesis and degradation (5mks)
b) Induction (5mks)
c) Repression (5mks)
d) Substrate and coenzyme concentration (5mks)

Question FIVE

Using illustrations, outline different forms of reversible enzyme inhibition (20mks)