



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 12S (Y2 S1)

ABT 4205: BASIC METABOLISM I

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

a) Define the following terms:

- | | |
|----------------------------------|-----------|
| (i) Catabolism | (2 marks) |
| (ii) Glycolysis | (2 marks) |
| (iii) Hexose monophosphate shunt | (2 marks) |
| (iv) Gluconeogenegs | (2 marks) |
| (v) Proton motive force | (2 marks) |
| (vi) Glycogenium | (2 marks) |

b) Describe the following enzyme:

- | | |
|--------------------------------|-----------|
| (i) Glycogen phosphanylase | (2 marks) |
| (ii) Aconitase | (2 marks) |
| (iii) Phosphogiucose isomerase | (2 marks) |
| (iv) Ribulos 5 phosphate | (2 marks) |

c) Explain the following terms

- (i) Active site transferate **(2 marks)**
- (ii) Glycose-6-phosphate **(2 marks)**
- (iii) Electron transport chain **(2 marks)**
- (iv) Coenzyme Q(COQ) **(2 marks)**

QUESTION TWO

Discuss glycogen with reference to:

- (i) Glycogen breakdown **(10 marks)**
- (ii) Glycogen synthesis **(10 marks)**

QUESTION THREE

- (a) State the FIVE complexes of electron transport system **(5 marks)**
- (b) Discuss series of redox reaction in electron transport system **(15 marks)**

QUESTION FOUR

Discuss glycolysis cycle in relation to:

- (i) Regulation of glycolysis process **(10 marks)**
- (ii) Application of glycolysis **(10 marks)**

QUESTION FIVE

Explain the enzyme reactions in TCA cycle stages **(20marks)**