



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

**UNIVERSITY EXAMINATION FOR:**

**BACHELOR OF TECHNOLOGY IN APPLIED CHEMISTRY**

**ABT 4202: FUNDAMENTALS OF METABOLISM**

**END OF SEMESTER EXAMINATION**

**SERIES:** Select series Pick year

**TIME:** 2 HOURS

**DATE:** Pick Date Select Month Pick Year

## 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.**

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## Question ONE

- a). State the Laws of Thermodynamic. **(2 marks)**
- b). Define high energy molecules, and give five examples of the high energy compounds. **(5 marks)**
- c). Using structures, describe the fate of pyruvate. **(5 marks)**
- d). The Krebs cycle is controlled at three main points. Name the three points and the enzymes involved **(3 marks)**
- e). State the biochemical functions of nucleotides. **(5 marks)**
- f). Define the following terms and give example(s) in each case
- i) Glucogenic and Ketogenic amino acids **(4 marks)**
- ii) Exergonic and Endergonic reactions **(4 marks)**

iii) Substrate level phosphorylation

**(2 marks)**

**Question TWO**

Describe the glycolytic pathway showing the site of activity of various enzymes.

**(20 marks)**

**Question THREE**

a). Describe the cholesterol biosynthesis.

**(10 marks)**

b). Outline five functions of cholesterol.

**(5 marks)**

c) Outline the biochemical importance's of nucleotides.

**(5 marks)**

**Question FOUR**

a). Name the carbon skeleton formed from deaminations of various amino acids.

**(10 marks)**

b). (i) Describe the urea cycle.

**(7 marks)**

(ii) Outline the fate of urea in various vertebrates.

**(3 marks)**

**Question FIVE**

a). Some anticancer drugs block the synthesis of DNA. Discuss

**(10 marks)**

b). (i) Describe the effect that results to the disease arthritis (Gout)

**(5 marks)**

(ii) Explain how the disease (gout) is cured/treated.

**(5 marks)**