



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

**UNIVERSITY EXAMINATION FOR:**

**BACHELOR OF SCIENCE IN FOOD TECHNOLOGY AND QUALITY**

**ASSURANCE**

**ABT 4202: BIOCHEMISTRY II**

**SPECIAL/SUPPLEMENTARY EXAMINATION**

**SERIES: SEPTEMBER 2018**

**TIME: 2 HOURS**

**DATE: Sep 2018**

## **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.**

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## **Question ONE**

- a) Differentiate between these terms
  - i. Catabolism and anabolism (2 marks)
  - ii. Saturated fatty acids and Unsaturated fatty acids (2 marks)
- b) Name two sources and two fates of Acetyl COA (4 marks)
- c) Explain the regulation of glycogen synthase (6 marks)
- d) Outline the clinical significance of carnitine deficiency (6 marks)
- e) Outline the Cori cycle (6 marks)

f) Outline the functions of TCA cycle (4 marks)

## **QUESTION TWO**

a) Describe the by-pass reactions in gluconeogenesis (12 marks)

b) Summarize how the following metabolites enter the gluconeogenesis pathway

i. Amino acids (4 marks)

ii. Glycerol (4 marks)

## **QUESTION THREE**

Describe;

a) The regulation of nucleotide biosynthesis through feedback inhibition (11 marks)

b) The biosynthesis of purine nucleotides through salvage pathways (9 marks)

## **QUESTION FOUR**

With the aid of relevant illustrations, describe the fates of pyruvate (20 marks)

## **QUESTION FIVE**

Describe;

a) The oxidative phosphorylation (10 marks)

b) The following diseases associated with mutations of the mitochondrial genes

i. Leber's hereditary optic neuropathy (LHON) (5 marks)

ii. Myoclonic epilepsy end ragged-red fiber (MERRF) (5 marks)