



TECHNICAL UNIVERSITY OF MOMBASA

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: DECEMBER 2016

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.

Question ONE

- a) Differentiate between;
 - i. Purines and Pyrimidines (2 marks)
 - ii. Essential amino acids and Non-essential amino acids (2 marks)
- b) Outline the importance of phosphorylated intermediates in glycolysis (6 marks)
- c) State the factors that govern the rate of influx through the TCA cycle (3 marks)
- d) Explain the 3 stages of photosynthesis (5 marks)
- e) Name the four non-carbohydrate precursors and their source that feed into the gluconeogenesis pathway (5 marks)
- f) Describe the glycerol-phosphate shuttle (7 marks)

Question TWO

- a) Outline the regulation of oxidative phosphorylation (9 marks)
- b) Highlight the cardinal features of the following diseases associated with mutations of the mitochondrial genes
- i. Leber's hereditary optic neuropathy (LHON) (6 marks)
 - ii. Myoclonic epilepsy end ragged-red fiber (MERRF) (5 marks)

Question THREE

Discuss the regulation of cholesterol biosynthesis in mammals (20 marks)

Question FOUR

- a) With an aid of a diagram, describe the fatty acid oxidation stages for energy production (12 marks)
- b) Outline the clinical significance of accumulation of ketones in the blood (8 marks)

Question FIVE

Discuss the following disorders associated with amino acids metabolism

- i. Phenylketonuria (11 marks)
- ii. Alkaptonuria (4 marks)
- iii. Marple syrup urine disease (5 marks)