TECHNICAL UNIVERSITY OF MOMBASA

School of Applied and Health Sciences

DEPARTMENT OF PURE AND APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN FOOD TECHNOLOGY AND QUALITY ASSUARANCE

ABT 4202: BIOCHEMISTRY II

END OF SEMESTER EXAMINATION

SERIES: JULY 2025

TIME: 2 HOURS

DATE: JULY 2025

Instructions to Candidates

You should have the following for this examination

Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attemptquestion ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question One (30 Marks)

(i) Outline three glycolytic steps that have enzymes which regulate the flux of the pathway **(3 Marks)**

(ii) List five situations that may cause the liver to form ketones from fatty acids **(5 Marks)**

(iii) Give the meaning of the following terms

a) Anabolic reactions **(1 Mark)**
b) Ketoacidosis **(1 Mark)**

(iv) Explain three importance of phosphorylated intermediates **(3 Marks)**

(v) Outline four significances of Citric acid cycle **(4 Marks)**

(vi) Give five functions of lipids **(5 Marks)**

(vii) With the aid of an illustration explain the carnitine shuttle process **(5 marks)**

(viii) Name three substrates of gluconeogenesis pathway **(3 Marks)**

(viii) Explain three metabolic significances of amino acid transamination **(3 Marks)**

(ix) List the different types of amino acids **(2 Marks)**

Question Two (20 Marks)

Discuss the reactions of the citric acid cycle **(20 Marks)**

Question Three (20 Marks)

(a) Describe gluconeogenesis reactions that use alternate enzymes from those in glycolysis **(12 Marks)**

(b) Explain two processes through which glucose enter into cells **(8 Marks)**

Question Four (20 Marks)

(a) Discuss various ways through which ammonia is formed in the body **(5 Marks)**

(b) Discuss various processes involved in the disposal of ammonia **(15 Marks)**

Question Five (20 Marks)

With an illustration discuss the lipogenesis pathway **(20 Marks)**