ELIZADE UNIVERSITY
FACULTY OF BASIC AND APPLIED SCIENCES
DEPARTMENT: PHYSICAL AND CHEMICAL SCIENCES
PROGRAMME: BIOCHEMISTRY **EXAM TITLE: DEGREE EXAMINATION**
COURSE CODE & TITLE: BCH 409 - INTERMEDIARY METABOLISM

TIME ALLOWED: 2 hrs **SEMESTER/SESSION: FIRST / 2020/2021**

INSTRUCTIONS: Write your matriculation number on the cover page of the exam booklet.

HOD's SIGNATURE

Attempt any three (3) of the five (5) questions

(1a) Define the term allosteric enzymes and state their properties. [8 marks]
(1b) Using two examples of metabolic pathways; explain feedback inhibition. [12 marks]

(2a) With named examples; give four functions of proteins [8 marks]
(2b) Explain the four enzymatic steps in urea cycle that takes place in the liver mitochondria [8 marks]
2c) Write short note on Glucose-6-phosphate dehydrogenase (G6PD) deficiency [4 marks]

3a) Briefly explain the metabolic processes involved in the formation of lipids from carbohydrates. [6 marks]
3b) With the aid of a well labeled diagram, describe negative gene regulation using lactose operon. [14 marks]

(4a) Describe the metabolism of the amino acid tyrosine. [9 marks]
(4b) Briefly describe five (5) inborn errors of amino acid metabolism. [5 marks]
(4c) Giving correct example in each case, describe the six top level classification of enzymes. [6 marks]
(4d) Briefly describe metabolic regulation in relation to glucose demand. [5 marks]

(5a) Briefly differentiate between the Induced fit and Lock and key hypothesis. [5 marks]
(5b) With the aid of a well labeled diagram, describe enzyme-substrate complex in the last step of the glycolytic pathway. [5 marks]
(5c) With the aid of appropriate mechanism of action, extensively describe the role of inhibitors on the action of any three (3) of the following enzymes:
(i) Acetylcholinesterase [5 marks]
(ii) HMG CoA Reductase [5 marks]
(iii) Angiotensin-1 Converting Enzyme [5 marks]
(iv) α-Glucosidase [5 marks]