FACULTY: Basic and Applied Sciences
DEPARTMENT: Physical and Chemical Sciences
FIRST SEMESTER EXAMINATIONS
2018/2019 ACADEMIC SESSION

COURSE CODE: **BCH 409**
COURSE TITLE: **INTERMEDIARY METABOLISM**
DURATION: **120 MINS**

HOD's SIGNATURE

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

(1a) Explain the relationship between glucose metabolism and lipogenesis. ----6 marks
(1b) Describe the urea cycle. ---- 10 marks
(1c) Calculate the flow rate of a metabolite with a pool size of 50 and a turnover time of 10. ----4 marks

(2a) Give the enzyme deficient and reaction involved in each of the three inborn errors of galactose metabolism. ---- 6 marks
(2b) State the features classical galactosemia. ---- 4 marks
(2c) State the functions of five (5) types of protein. ----10 marks

(3a) With the aid of a well labeled diagram describe the lactose operon ----10 marks
(3b) Explain the relationship of acetyl CoA to amino acids and pyrimidine metabolism 10 marks.

(4a) Briefly describe the following terms;
(i) Competitive inhibition ---- 5 marks
(ii) Uncompetitive inhibition ---- 5 marks

(4b) Describe the six top level classification of enzymes; giving at least one (1) example in each case ---- 6 marks

(4c) Briefly differentiate between the Induced fit and Lock and key hypothesis ---- 4 marks

(5a) With the aid of a well labeled diagram, describe enzyme-substrate complex using the enzyme and substrate of the last step of the glycolytic pathway ---- 10marks

(5b) With the aid of appropriate mechanism of action, extensively describe the role of inhibitors on the action of any two (2) of the following enzymes;
(i) Acetylcholinesterase ---- 5 marks
(ii) HMG CoA Reductase ---- 5 marks
(iii) Angiotensin-1 Converting Enzyme ---- 5 marks
(iii) α-Glucosidase ---- 5 marks