



FACULTY: BASIC AND APPLIED SCIENCES  
DEPARTMENT: PHYSICAL AND CHEMICAL SCIENCES  
SECOND SEMESTER EXAMINATIONS  
2016/2017 ACADEMIC SESSION

COURSE TITLE: GENERAL BIOCHEMISTRY II

DURATION: 2hrs 30 minutes

COURSE CODE: BCH 202

HOD'S SIGNATURE

TOTAL MARKS: 60

Matriculation Number: \_\_\_\_\_

**INSTRUCTIONS:**

Instruction: Answer four (4) Questions

- (1a) What is oxidative phosphorylation?
- (1b) What is the link between oxidation and phosphorylation?
- (1c) How important is oxidative phosphorylation to living organisms?
- (1d) Can oxidative phosphorylation occur without electron transport or flow? Explain.
- (1e) What is the difference between substrate level phosphorylation and oxidative phosphorylation?
- (1d) Give three (3) examples of the inhibitors of electron transport chain and oxidative phosphorylation. State the site of action of each inhibitor.
  
- (2a) Draw the structure of a typical membrane phospholipid using well-labelled illustrations.
- (2b) Write a note on membrane fluidity.
- (2c) What is the effect of: (i) cholesterol; (ii) low and high temperatures; and (iii) unsaturated fatty acids on membrane fluidity.
  
- (3a) With the aid of descriptive and comparative pathways, differentiate between glycolysis and gluconeogenesis.
- (3b) State one similarity and difference between reducing and non-reducing sugar.
  
- (4a) Describe the process of digestion
- (4b) List and write short notes on four mechanisms of transport
- (4c) State the similarities and differences between amylose and amylopectin.
  
- (5) Calculate the total energy in terms of ATP generated if one mole of glucose is completely metabolized to carbon dioxide and water.
  
- (6a) Describe the fates of pyruvate under aerobic and anaerobic conditions
- (6b) State the primary functions of the pentose phosphate pathway
- (6c) Give a short description of how metabolism of glucose through the pentose phosphate pathway influences the development of some pathologies.