



**CRAWFORD UNIVERSITY, IGBESA  
FAITH CITY, IGBESA-OGUN STATE.**

**2010/2011 HARMATTAN SEMESTER EXAMINATIONS**

**COLLEGE: NATURAL AND APPLIED SCIENCES**

**DEPARTMENT: BIOLOGICAL SCIENCES**

**UNIT: BIOCHEMISTRY**

**COURSE CODE: BCH 217**

**COURSE TITLE: INTRODUCTORY INTERMEDIARY METABOLISM**

**COURSE UNIT: 2**

**TIME ALLOWED: 2 HRS**

**Instruction: Answer ANY FOUR questions**

1. (a) What is Metabolism?  
(b) (i) Differentiate between Anabolism and catabolism.  
(ii) Classify Organisms according to their metabolic diversity.  
(c) Explain how glucose is used to generate energy in the glycolytic pathway.
2. (a) Differentiate between the fate of pyruvate in aerobic and anaerobic organisms. Illustrate your answers with the biochemical reactions in the cycle.  
(b) Explain clearly how galactose enters Glycolysis.
3. Explain and Illustrate with diagrams how the following can be regulated:  
(a) Glycolysis  
(b) Tricarboxylic Acid Cycle.
4. (a) Discuss the  $\beta$ -oxidation of palmitic acid. Illustrate your discussion with diagrams.  
(b) Account for the net energy produced by the complete metabolism of palmitic acid through  $\beta$ -oxidation.
- 5 (a) What is the site of  $\beta$ -oxidation of fatty acids in cells?  
(b) Describe the process by which fatty acids from the cytosol are made available for oxidation in the mitochondrial matrix.  
(c) What is the role of carnitine in the process in 5(b) above?
- 6 (a) Differentiate between the  $\beta$ -oxidation of odd chain and even chain fatty acids.  
(b) What is the fate of the propionyl CoA produced during  $\beta$ -oxidation of odd chain fatty acids