



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

**2023/2024 HARMATTAN SEMESTER EXAMINATIONS**

**COLLEGE: NATURAL AND APPLIED SCIENCES**

**DEPARTMENT: BIOLOGICAL SCIENCES**

**UNIT: BIOCHEMISTRY**

**COURSE CODE: BCH 403 COURSE UNIT: 3 TIME ALLOWED: 3 HOURS**

**COURSE TITLE: ADVANCE INTERMEDIARY METABOLISM AND REGULATION**

**INSTRUCTION: ANSWER ANY FIVE QUESTIONS**

- 1 a) How is digestion linked to metabolism? Illustrate using a named nutrient. *10 marks*  
b) Explain the fate of glucose under different cellular energy conditions *10 marks*
- 2 Write NOTES on the following:  
a) Genetic defects in glucose assimilation *10 marks*  
b) Genetic defects in lactose metabolism. *10 marks*
- 3 Describe the respiratory chain. Show clearly how it is linked with oxidative phosphorylation. *20 marks*
- 4 Write NOTES on the following:  
(a) The proton-motive force *10 marks*  
(b) The ATP yield of oxidative glucose degradation. *10 marks*
- 5a) Discuss gluconeogenesis *10 marks*  
b) How is gluconeogenesis regulated? *10 marks*
- 6 Describe the steps involved in amino acid catabolism. *20 marks*
- 7 Discuss the metabolic conditions linking the availability of glucose to fatty acid synthesis. Illustrate the pathway(s) used. *20 marks*