CRAWFORD UNIVERSITY
FAITH CITY, IGBESA, OGUN STATE
2010/2011 HARMATTAN SEMESTER EXAMINATIONS

COLLEGE: NATURAL AND APPLIED SCIENCES
DEPARTMENT: BIOLOGICAL SCIENCES
UNIT: BIOCHEMISTRY
COURSE CODE: BCH 303 **COURSE UNIT:** 3
COURSE TITLE: METABOLISM OF MACROMOLECULES II

INSTRUCTION: Answer any FOUR questions **TIME ALLOWED: 3 HOURS**

1. (a) (a) Draw the structures and give the names of the products of transamination of the following amino acids:
(i) Alanine (ii) Aspartate (iii)Glutamate (iv) Tyrosine (v) Leucine
(b) Discuss briefly the transamination reactions of amino acids.

2 (a) Discuss the biological roles of any TWO of the following and also indicate their significance in amino acid metabolism:
(i) Glutamate
(ii) Glutamine
(iii) Alanine
(b) Describe FULLY the following biological processes and also comment on the significance of these processes:
(i) Urea cycle
(ii) Transport of ammonia through glutamine to the liver

3 (a) Describe FULLY the biosynthesis of ANY amino acid. Illustrate your answer with diagrams.
(b) List the amino acids that can be synthesized directly from the common metabolic intermediate of transamination reaction.

4 (a) Explain the origin of each atom present in the purine ring structure
(b) Discuss biosynthesis of IMP from 5-aminoimidazole ribonucleotide (AIR)

5 (a) Discuss the regulation of purine metabolism.
(b) Describe AMP and GMP biosynthesis from IMP. Illustrate with clear diagrams.

6 (a) (i) Differentiate between Carbamoyl phosphate synthesis I and II with simple biochemical equations.
(ii) How does this account for the skeleton of the pyrimidine ring?

(b) Write a brief ESSAY on Gout.