CRAWFORD UNVERSITY

Faith City, Igbesa , Ogun State

2012/2013 Harmattan Semester Examinations.

College: Natural And Applied Sciences
Department: Biological Sciences
Programme: B.Sc. Biochemistry
Course Code: BCH 415 Unit: 2
Course Title: Principles of Bioinformatics .
COURSE STATUS: ELECTIVE

Time Allowed: 2hrs.

INSTRUCTIONS: Answer four out of the six questions provided.

1. (a) What do you understand by multiple sequence alignment and how could it be used in data mining.

   (b) Explain bioinformatics with the classification of databases.

   (c) Describe in detail three(3) of the following:

   (i) DNA replication (ii) Chemical structure of a nucleotide (iii) Gene Mapping. (iv) DNA Translation.

2. (a) Give a historical account of the background to human genome project

   (b) Describe five organisms whose genomes have been sequenced.

   (c) Differentiate clearly the concept of bioinformatics and computational biology.

3. (a) Describe the procedures followed by Sanger-Coulson in the modern method of DNA Sequencing.

   (b) Explain how the genomes of organisms hold the key to biotechnology discoveries.

   (c) Discus critically , the benefits of the human genome project.

4. (a) In what ways do we use bioinformatics as a tool?

(b) Describe the enzymes used in the digestion of the chromosomal DNA .

5. (a) Enumerate ten (10) toolkits (softwares) used in the DBMS. State their different applications.

(b) (i) Describe in detail what you understand by the term " genome annotation" ?

(ii) What are the new discoveries emanating from the human genome project.

6. (a) (i) Describe the procedures involved in gene counting and

(ii) Gene prediction.

(b) (i) Describe the sources of the specimen used in the human genome project.

(ii) What are the ethical, legal and social implications of the human genome project.