NB: (1) Question No.1 is compulsory

(2) Attempt any three questions out of remaining five questions

(3) Each question carries equal marks

(4) Illustrate answers with sketches wherever required

1. Write Short Notes on: (20)
   a) ESTs
   b) NCBI
   c) Dot Matrix Alignment
   d) Neural Networks
   e) Markov Chains

2. a) Explain the different DNA sequence databases in detail. (10)
   b) Discuss the methods of Phylogenetic Analysis. (10)

3. a) Explain Flat File Database with an example. (10)
   b) Explain different types of Protein structures in detail. (10)

4. a) Perform Needleman-Wunsch Algorithm for the given nucleotide sequence (15)
   Seq 1: ACTGACA
   Seq 2: ACTGAGG

   Match = +2; Mismatch = -2; Gap = -2

   b) Write a note on CLUSTALW. (05)

5. a) Describe different steps involved in the process of Drug Discovery. (12)
   b) Classify and explain databases based on types of data stored. (08)

6. a) What is DNA Sequencing? Explain Sanger's method of Sequencing in detail. (10)
   b) Explain the following: (10)
      i) BLAST
      ii) PIR

_____

MD-Con. 8243-15.