B.TECH. IN ELECTRONICS AND COMMUNICATION ENGINEERING (BTECVI)

Term-End Examination

June, 2013

BIELE-017 : BIO INFORMATICS

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt **any seven** questions. Each question carries equal marks.*

1. What is Bio informatics ? Why it is important ? **10**
    What are the key challenges in bio informatics ?
    Write the name of some important software used
    in bio informatics.

2. Differentiate local and global similarity search **10**
    methods. Write the name of tools using three
    methods. Write the working principle of FASTA.

3. What is RNA ? Write the possible representation **10**
    of secondary structure of RNA. Write RNA
    structure prediction method with explanation

4. What is Microarray ? How Microarray is **10**
    prepared ? Write in brief the steps involved in
    Microarray experiment.

5. What do you mean by sequence alignment ? Write 6 types of sequence alignment ? Explain briefly. Write the use of sequence alignment in bioinformatics.   **10**

6. Write the overview of MUSTA with proper flowchart. Write the area where MUSTA is used with brief description.   **10**

7. Explain Hidden Markov Model. Explain its application in sequence alignment.   **10**

8. What is folding problem ? Classify the protein on the basis of their structure. Write about secondary structure prediction techniques.   **10**

9. What is Phylogenetic tree ? What is the use of Phylogenetic analysis ? Write the method of join Phylogenetic alignment.   **10**

10. Write short notes on *any two* :   **5x2=10**

    (a) Genome Sequencing

    (b) 3d Motifs

    (c) NLP

    (d) NMR