**M.TECH. DEGREE EXAMINATION**

**Branch: Computer Science and Engineering**

**Specialization : Computer Science and Engineering**

**Model Question Paper - I**

**First Semester**

**MCSCS 105-1 BioComputing**

 **(Elective I)**

 (Regular – 2013 Admission onwards)

**Time: 3hrs Maximum:100 marks**

***Answer the following Questions.***

1. a) Explain the different Molecular Biology Tools (12).

b) Discuss the Gene Structure(7)

c) What is Base Pairing(6)

or

1. a) Which are the major Databases in Bioinformatics (9)

b) Discuss the different Data Retrieval Tools (9)

c) How Data Mining can be done in Biological Databases (7)

1. a) Explain the different methods of Sequence Alignments (10)

b) What is Phylogenetic Analysis? (8 )

c)How is Scoring Matrices used to compare two sequences (7)

or

1. a) Explain the FASTA Algorithm(9)

b)Explain the BLAST Algorithm(9)

c) Compare the FASTA and BLAST Algorithms(7)

1. a) Explain the Hidden Markov Models (15)

b) What are DNA Microarrays (10)

or

1. a)Explain the different Gene prediction methods(13)

b) Discuss the different clustering techniques used to identify the pattern in gene-expression (12)

1. a) How is Protein Structure Visualized? (9)

b) How Protein is classified based on Structures? (8)

c) Discuss the different Protein Classification Approaches (8)

or

1. a) Discuss the various tools used for protein identification and characterization (9)

b) Explain Sequence based Protein Prediction (8)

c) Discuss the AB initio Approach for Protein Prediction (8)