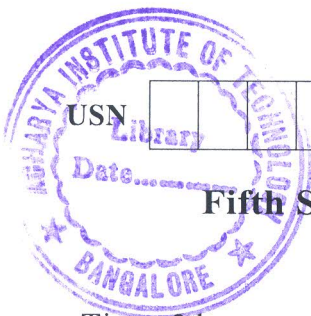


CBCS SCHEME

17BT54



Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Bioinformatics

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Discuss the nucleotide and protein databases by giving two examples for each. (12 Marks)
- b. Explain the Protein Data Bank (PDB) flat file format. (08 Marks)

OR

- 2 a. State your point of view on scop and Pfam. (10 Marks)
- b. Write the applications of different types of BLAST. (05 Marks)
- c. What is Hidden Markov Models (HMMs)? (05 Marks)

Module-2

- 3 a. What are the benefits one can get, after performing phylogenetic analysis? Differentiate rooted and unrooted trees. (10 Marks)
- b. Write in detail, the programs for in PHYLIP package. (10 Marks)

OR

- 4 a. With the help of SOPMA (web based tool) how are you able to predict secondary structure of a protein sequence? (10 Marks)
- b. Write two methods of the predicting functional sites in nucleotides sequence. (10 Marks)

Module-3

- 5 a. With the help of bioinformatics tools, how can you detect SNPs, ESTs and their relevance in a raw sequence? (10 Marks)
- b. Explain sanger dideoxy method of sequencing with an example diagram. (10 Marks)

OR

- 6 a. Discuss the role of Vista and MUMmer in comparative genome analysis. (10 Marks)
- b. Explain the different types of machine learning tools. (10 Marks)

Module-4

- 7 a. Write in detail, of the retrieval of the high molecular weight molecular like proteins structure and visualization procedure in SPD viewer. (10 Marks)
- b. Discuss on the methods of energy minimization. (10 Marks)

OR

- 8 a. Compare the structure visualization parameter of Rasmol with Cn 3D. (10 Marks)
- b. Explain the different modes of Canonical DNA forms. (10 Marks)

Module-5

- 9 a. What is the importance of restriction mapping analyses with example software tool? (10 Marks)
- b. Comment on the interactions between ligand and receptor. (10 Marks)

OR

- 10 a. What do you mean by QSAR? Write in detail. (10 Marks)
- b. Write the primer design program with respect to primer 3. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.