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Fifth Semester B.E. Degree Examination, June/July 2011
Bioinformatics

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART - A

- 1 a. "Bioinformatics is a multidisciplinary science". Justify? Add a note on its applications. (10 Marks)
b. Write short notes on the following :
i) Pubmed ii) P jam iii) EMBL iv) Gen Bank flat file. (10 Marks)
- 2 a. Give a brief account on classification of biological databases. (12 Marks)
b. Trace out differences between PAM and BLOSUM. (08 Marks)
- 3 a. What is a phylogenetic tree? Discuss the concept of mutation with reference to phylogenetic studies. Write in brief the different ways of representing a phylogenetic tree. (10 Marks)
b. Write short notes on : i) Clustal W ii) Tree building methods. (10 Marks)
- 4 a. What are the merits and demerits of multiple sequence alignment methods over a pair – wire sequence alignment with regard to phylogenetic analysis? (06 Marks)
b. What is a dot plot? Discuss the advantages and disadvantages of dot plot analysis. (06 Marks)
c. Explain with suitable example about the primary and secondary structure database of proteins. (08 Marks)

PART - B

- 5 a. What are restriction maps? Give an account on restriction mapping in a suitable software and add a note on its significance. (10 Marks)
b. Write short notes on :
i) DNA strider ii) Mac Vector and OMIGA. (10 Marks)
- 6 a. Explain the significance of bioinformatics approaches towards Bioinformatics tools in micro array data analysis. (08 Marks)
b. Write short notes on the following :
i) Detection of polymorphism ii) Utility of EST database in sequencing. (12 Marks)
- 7 a. What is molecular modeling? Explain its role in insilico drug design. (10 Marks)
b. Write short notes on the following : (10 Marks)
i) Fold assignments of onthologous sequences ii) Rotomeric structure of proteins.
- 8 a. With one suitable example, explain the molecule superposition and structural alignment. (06 Marks)
b. What is molecular docking? Explain how the molecular properties and energy calculations are carried out in docking studies. (08 Marks)
c. Write in brief :
i) Ligand Receptor interaction ii) Molecular modeling in drug discovery. (06 Marks)

