5. Explain the BLAST. What are different categories of BLAST? Write the steps of Homology for a gene sequence. 4+5+5=14

Or

6. What do you know about multiple sequence alignments? How do you construct phylogenics with DNA sequence as an example. 7+7=14

7. Draw a fine structure of a Eukaryote gene. What do you mean by gene prediction? Write a note on few free gene prediction software with their characteristics. 4+5+5=14

Or

8. What is ORF? How many ORFs can you get from a DNA sequence? Explain. What is a traucated ORF? 4+5+4=14

9. Define Proteomics. Write practical application of proteomics. Write a note on few databases. 4+6+4=14

Or

10. Describe different methods of studying proteins. Write a note on classification of protein. 10+4=14

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PG Even Semester Examination, September, 2023

BIOTECHNOLOGY

(2nd Semester)

Course No: BT-553 (CC)
(Bioinformatics)

FM: 70
Pass Marks : 28
Time: 3 Hours

The figures in the right margin indicate full marks for the question

1. What is bioinformatics? Write a note on different branches of bioinformatics. 4+10=14

Or

2. Discuss the applications of bioinformatics in plant and animal improvement. 14

3. Write a note on NCBI, EMBL and DDBJ and their utility in biological sciences. 14

Or

4. What is codon usage bias ? Discuss the factors responsible for codon usage bias. Write a note on how codon usage bias affects mRNA secondary structure, transcription and translational elongaton. 2+6+6=14