GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–V (NEW) EXAMINATION – WINTER 2020

Subject Code:3150407   **Date:01/02/2021**
Subject Name:Fundamentals and Applications of Bioinformatics
Time:10:30 AM TO 12:30 PM   **Total Marks: 56**

Instructions:
1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

			MARKS
Q.1	(a)	Give clear and self-explanatory definition of bioinformatics.	03
	(b)	Enlist few databases dedicated to study of proteins.	04
	(c)	Mention the applications of bioinformatics in modern times.	07
Q.2	(a)	Enlist the features of PDB.	03
	(b)	Define cladogram and phylogram.	04
	(c)	Discuss the scopes of Bioinformatics research in current scenario of data science and progress in medical field.	07
Q.3	(a)	Write about PIR.	03
	(b)	Explain rooted and unrooted tree in phylogeny.	04
	(c)	What are the uses of CATH and SCOP? Make a list of applications of both with examples.	07
Q.4	(a)	Write a short note on: RasMol	03
	(b)	What is molecular phylogeny?	04
	(c)	Explain the methods to do multiple sequence alignment.	07
Q.5	(a)	Give the features of local alignment.	03
	(b)	Enlist gene prediction methods.	04
	(c)	Discuss protein microarrays.	07
Q.6	(a)	What is global alignment?	03
	(b)	Enlist data sources for microarray analysis.	04
	(c)	Explain the methods to do phylogenetic analysis.	07
Q.7	(a)	Enlist the steps in drug discovery.	03
	(b)	Discuss SAR technique.	04
	(c)	What is BIOPYTHON? Write a script explaining small uses of the same, taking any example.	07
Q.8	(a)	Give the meaning of next generation sequencing.	03
	(b)	Write about QSAR techniques.	04
	(c)	What are the databases and structure in PYTHON?	07

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