

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2018

Subject Code:2160410

Date:08/05/2018

Subject Name:Bioinformatics - Department Elective I

Time:10:30 AM to 01:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) Relation between molecular biology and bioinformatics.	03
	(b) Explain data management and data analysis.	04
	(c) Discuss various tools used for data mining of biological databases.	07
Q.2	(a) Highlight various alignment problems.	03
	(b) Explain the concept of scoring matrices.	04
	(c) Explain the concept and procedure involved in multiple sequence alignment.	07
	OR	
	(c) What is phylogenetic analysis? How it is performed?	07
Q.3	(a) Write applications of pairwise sequence alignment.	03
	(b) Describe any four areas of bioinformatics.	04
	(c) Write different types of BLAST and their applications.	07
	OR	
Q.3	(a) Write uses of microarray technology.	03
	(b) Comment on clustering gene expression profiles.	04
	(c) Write different types of FASTA and their applications.	07
Q.4	(a) Write a note on branches of proteomics.	03
	(b) How will you measure sequence detection efficiency?	04
	(c) Describe various methods of gene prediction.	07
	OR	
Q.4	(a) Write applications of multiple sequence alignment.	03
	(b) Comment on evaluation of predicted structure.	04
	(c) Explain the concept and procedure involved in protein secondary structure prediction.	07
Q.5	(a) What are structure visualization tools?	03
	(b) How will you predict the protein function?	04
	(c) Explain the principle, procedure and uses of 2D-PAGE in the field of proteomics.	07
	OR	
Q.5	(a) Write areas influencing drug discovery.	03
	(b) How will you study protein-protein interaction?	04
	(c) What are SNPs? Explain the role of SNPs in drug discovery.	07
