



**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.

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

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