Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEMESTER VIII EXAMINATION SUMMER 2015

Subject Code: 180305 **Date:05/05/2015**

Subject Name: Bioinformatics

Time:10.30AM-01.00PM **Total Marks: 70**

Instructions:

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

Q.1	**(a)**	What is molecular biology? Explain central dogma of molecular biology.	**07**
	(b)	Write Short Note: Watson and Crick's structure of DNA.	**07**
Q.2	**(a)**	State the significance of biological databases.	**07**
	(b)	Describe the various branches of Bioinformatics.	**07**
		OR	
	(b)	Elaborate on the different aims and scopes of Bioinformatics.	**07**
Q.3	**(a)**	Explain briefly primary protein databases.	**07**
	(b)	Explain following functions with example: substr, join, split.	**07**
		OR	
Q.3	**(a)**	What is Gene Prediction? Explain Extrinsic method of Gene prediction.	**07**
	(b)	What is the role of accession code in sequence database?	**07**
Q.4	**(a)**	What is sequence alignment? Explain models for sequence analysis.	**07**
	(b)	Compare FASTA and BLAST method for database searching.	**07**
		OR	
Q.4	**(a)**	Write a short note on Global alignment and Gap penalty.	**07**
	(b)	Describe what is Mutation? Discuss various types of mutation.	**07**
Q.5	**(a)**	Explain the four levels of protein structure.	**07**
	(b)	Write PERL program to read a DNA sequence from a file and then ask the user to enter the query sequence and then look the query in the DNA sequence file.	**07**
		OR	
Q.5	**(a)**	Explain operators used in perl with example.	**07**
	(b)	Write a program to input two DNA sequences and concatenate the sequences.	**07**

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