Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014

Subject Code: 1723109 **Date: 25-06-2014**

Subject Name: Introduction to Bioinformatics

Time: 02:30 pm - 05:00 pm **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)**	Explain importance of bioinformatics and also discuss the challenges in information processing.	**07**
	(b)	Describe Central Dogma of molecular biology in detail.	**07**
Q.2	**(a)**	What is database? Why does one need a biological database?	**07**
	(b)	Write Short Note: Watson and Crickôs structure of DNA.	**07**
		OR	
	(b)	Explain in detail with figure: Structure and function of RNA.	**07**
Q.3	**(a)**	Explain the four levels of protein structure.	**07**
	(b)	Write a short note on ñFASTAò.	**07**
		OR	
Q.3	**(a)**	Explain cloning methodology in detail.	**07**
	(b)	Explain in brief DNA sequencing.	**07**
Q.4	**(a)**	What is Bio-Perl? Explain tasks performed by Bio-Perl for bio informatics.	**07**
	(b)	Write a Perl program to concatenate two DNA sequences and print it.	**07**
		OR	
Q.4	**(a)**	What is text processing? How Perl is useful for text processing?	**07**
	(b)	Write a Perl program to reverse complement strand of DNA.	**07**
Q.5	**(a)**	What is protein structure prediction? What is protein folding problem? How protein folding problem can be solved?	**07**
	(b)	What is gene? Write a short note on GeneBank.	**07**
		OR	
Q.5	**(a)**	Write a short note on Global alignment and Gap penalty.	**07**
	(b)	Explain different variables used in Perl.	**07**

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