Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– IV EXAMINATION – SUMMER 2015

Subject Code: 143504 **Date: 05/06/2015**

Subject Name: Fundamentals of Biotechnology (Institute Elective-I)

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)**	Give a comparative account on A- and B-DNA forms along with neat diagrams.	**07**
	(b)	What is Chargaff's Rule? Write a note on mRNA and its significance.	**07**
Q.2	**(a)**	Describe the structural organization and functional significance of tRNA.	**07**
	(b)	Comment on the importance and applications of snRNA.	**07**
		OR	
	(b)	What is Genetic Code? Describe the characteristics of genetic code and give its importance.	**07**
Q.3	**(a)**	Give a comparative account on innate vs. acquired immunity.	**07**
	(b)	Comment on the significance of primary and secondary immune responses.	**07**
		OR	
Q.3	**(a)**	Enlist important properties of antigen. Give classification of antigens.	**07**
	(b)	Describe the typical structure of an immunoglobulin with a neat diagram.	**07**
Q.4	**(a)**	Give the comparative account on Ab-A and Ab-G molecules.	**07**
	(b)	Write a note on ABO blood grouping and its significance.	**07**
		OR	
Q.4	**(a)**	What is replication? Give the characteristic features of prokaryotic DNA replication.	**07**
	(b)	Compare unidirectional and bidirectional replication with neat diagrams.	**07**
Q.5	**(a)**	Enlist important enzymes and proteins involved in replication. Explain the functional significance of any four of them.	**07**
	(b)	Comment on closed clamp and rolling circle model of replication.	**07**
		OR	
Q.5	**(a)**	Compare and contrast initiation and termination steps of replication.	**07**
	(b)	Give the significance of replication. What will happen if replication stops?	**07**

****