Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V • EXAMINATION – SUMMER 2013

Subject Code: 150401 **Date: 14-05-2013**

Subject Name: Advance Molecular Biology I

Time: 10.30 am - 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.**

Q.1	**(a)**	What is recombinant DNA? How is it made?	**07**
	(b)	Write an account on specific cleavage pattern of restriction endonuclease enzymes.	**07**
Q.2	**(a)**	What should be properties of an ideal vector? Give features of any two engineered vectors used in gene cloning.	**08**
	(b)	How is genomic library and cDNA library constructed?	**06**
		OR	
	(b)	Enlist different types of mutations with example of each.	**06**
Q.3	**(a)**	How can recombinant DNA be integrated into the host *E.coli*?	**07**
	(b)	Explain mismatch repair with a neat diagram.	**07**
		OR	
Q.3	**(a)**	What are the different possibilities of ligation when a vector is to be joined to a recombinant DNA?	**10**
	(b)	Differentiate between Southern, Northern and Western Blotting Techniques.	**04**
Q.4	**(a)**	Explain trp operon in detail.	**08**
	(b)	Write an account on gene therapy and its applications	**06**
		OR	
Q.4	**(a)**	What is Polymerase Chain reaction? How does it amplify DNA?	**08**
	(b)	Enlist different tools used in genetic engineering.	**06**
Q.5	**(a)**	What are the regulation mechanisms at the level of post transcription?	**08**
	(b)	What is the effect of glucose on lac operon?	**06**
		OR	
Q.5	**(a)**	Explain feedback inhibition in detail.	**08**
	(b)	Explain different mechanism of suppression of mutation with a suitable example.	**06**

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