Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – V (NEW) EXAMINATION – WINTER 2015

Subject Code: 2150401 Date:17/12/2015

Subject Name: Advanced Molecular Biology - I

Time:10:30am to 1:00pm 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)**	Define cDNA. Explain the process of cDNA library creation.	**07**
	(b)	Explain the process of DNA mobilization during conjugation in detail.	**07**
Q.2	**(a)**	Discuss any one plasmid vector along with its screening process.	**07**
	(b)	Enlist various applications of genetic engineering.	**07**
		OR	
	(b)	What are different models for homologues recombination?	**07**
Q.3	**(a)**	Describe in detail Southern hybridization with a neat diagram.	**07**
	(b)	Explain the mechanism of specialized transduction with a neat diagram.	**07**
		OR	
Q.3	**(a)**	Enlist and explain the process of transformation in *Streptococcus pneumonia*.	**08**
	(b)	Write a note on gene therapy and its applications.	**06**
Q.4	**(a)**	Define and discuss PCR in detail.	**07**
	(b)	Explain the mechanism of abortive transduction with a neat diagram.	**07**
		OR	
Q.4	**(a)**	Explain the process of transformation by inducing artificial competence.	**07**
	(b)	Describe in detail molecular mechanism of site specific recombination.	**07**
Q.5	**(a)**	What is competence? Explain the methods of artificial competence.	**07**
	(b)	Write a short note on conjugation mapping and its applications in gene mapping.	**07**
		OR	
Q.5	**(a)**	Explain steps of gene cloning with a suitable illustration.	**07**
	(b)	Enlist the methods for insertion of recombinant DNA molecule into a suitable host. Explain any one in detail.	**07**

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