Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V • EXAMINATION – WINTER • 2014

Subject Code: 150401 Date: 26-11-2014

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)**	Explain the mechanism of attenuation of trp operon with a neat diagram.	**07**
	(b)	Define the term operon. Differentiate between positive and negative control of operon with an example.	**07**
Q.2	**(a)**	Explain the process of PCR along with its applications.	**07**
	(b)	Write a short note on types of Restriction enzyme and state how its nomenclature is done.	**07**
		OR	
	(b)	With an example, explain the process of formation of cohesive ends by cutting with restriction endonuclease enzymes.	**07**
Q.3	**(a)**	Narrate the significance of Feedback inhibition in the regulation of tryptophan Synthesis.	**07**
	(b)	Justify: SOS Repair mechanisms are strategic.	**07**
		OR	
Q.3	**(a)**	Explain Enzymatic photo reactivation of a thymine dimmer.	**07**
	(b)	Summarize on Precursor activation as a tool for regulation of different metabolic pathways.	**07**
Q.4	**(a)**	Explain any three different strategies for integration of DNA insert into the vector.	**07**
	(b)	Explain the processs of agarose gel electrophoresis with its principle and applications.	**07**
		OR	
Q.4	**(a)**	Explain the translational and post translational control of gene expression in eukaryotes.	**07**
	(b)	Write a detailed note on chromosome walking.	**07**
Q.5	**(a)**	Elucidate on the following: 1. Positive selection of mutants 2. Negative selection of mutants	**07**
	(b)	Explain the Replica Plating strategy.	**07**
		OR	
Q.5	**(a)**	Briefly narrate on the following: 1. Forward mutation 2. Reverse mutation	**07**
	(b)	Differentiate: Leaky and non-leaky mutations	**07**

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