Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2160401 **Date: 27/04/2017**

Subject Name: Advanced Molecular Biology-II

Time: 10:30 AM to 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.**

			MARKS
Q.1		**Short Questions**	**14**
	1	Define the term mutagenesis.	**1**
	2	Give example of any one chemical mutagen.	**1**
	3	Name the enzyme playing role in photorepair system.	**1**
	4	What is reversion?	**1**
	5	What do you mean by gene mapping?	**1**
	6	Explain importance of splicing?	**1**
	7	Give example of any one lytic virus.	**1**
	8	Which proteins are present at att site of M13 virus?	**1**
	9	What is role of lactose in lac operon?	**1**
	10	What is function of reverse transcriptase enzyme?	**1**
	11	What is function of transposase enzyme?	**1**
	12	What is feed back inhibition?	**1**
	13	What do you mean by reading frame?	**1**
	14	What do you mean by genetic linkage?	**1**
Q.2	**(a)**	Explain inversion mutation with an example.	**03**
	(b)	Expain extragenic supression with example.	**04**
	(c)	Explain briefly chemical mutagens with examples.	**07**
		OR	
	(c)	Explain briefly physical mutagens with examples.	**07**
Q.3	**(a)**	Explain basic structure of splicing site.	**03**
	(b)	Explain basic structure of transposable element.	**04**
	(c)	Explain the process of nucleotide excision repair in *E.coli.*	**07**
		OR	
Q.3	**(a)**	Draw a neat diagram of retrovirus with proper labellings.	**03**
	(b)	Write a short note on Tn3 transposon in *E.coli.*	**04**
	(c)	Explain the process of base excision repair in detail.	**07**
Q.4	**(a)**	What is primer walking?	**03**
	(b)	Explain the mechanism of attenuation in trp operon.	**04**
	(c)	How is choice made between lytic and lysogenic cycle in lambda virus?	**07**
		OR	
Q.4	**(a)**	Write a note on self splicing introns.	**03**
	(b)	Explain post translational control with an example.	**04**
	(c)	Explain positive regulation of lac operon.	**07**
Q.5	**(a)**	Compare Sanger's and Maxam's DNA sequencing techniques.	**03**
	(b)	Explain post transcriptional control in eukaryotes.	**04**
	(c)	Explain life cycle of T4 Phage with a neat diagram.	**07**

OR

Q.5	**(a)**	What is application of DNA fingerprinting technique?	**03**
	(b)	Write a note on: physical mapping.	**04**
	(c)	Explain the process of splicing of nuclear mRNA.	**07**

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