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

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (OLD) - EXAMINATION – SUMMER 2017

Subject Code: 140401 **Date: 12/06/2017**

Subject Name: Molecular Biology And genetics

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.**

Q.1	**(a)**	Derive the genotypic and phenotypic ratio for monohybrid cross taking suitable illustration.	**07**
	(b)	Explain different models of DNA replication.	**07**
Q.2	**(a)**	What is epistasis? Explain dominant and recessive interaction of genes with suitable example.	**07**
	(b)	Explain mechanism of replication in prokaryotes.	**07**
		OR	
	(b)	Explain mechanism of replication in eukaryotes.	**07**
Q.3	**(a)**	Explain role of promoter, enhancer and silencer regions in the process of transcription.	**07**
	(b)	Explain the process of post transcriptional modification of mRNA.	**07**
		OR	
Q.3	**(a)**	Explain the process of formation of initiation complex during transcription process.	**07**
	(b)	Explain polycistronic and monocistronic mRNA.	**07**
Q.4	**(a)**	Narrate the experiment to prove that DNA genetic material in prokaryotes.	**07**
	(b)	Explain the concept of gene, recon, cistron and muton.	**07**
		OR	
Q.4	**(a)**	Narrate the experiment to prove that DNA genetic material in akaryotes.	**07**
	(b)	Write a short note on one gene one protein hypothesis.	**07**
Q.5	**(a)**	Write a short note on characteristics of genetic code.	**07**
	(b)	Explain the mechanism of formation of initiation complex during the process of translation.	**07**
		OR	
Q.5	**(a)**	Write a short note on post translational modification of proteins.	**07**
	(b)	Explain the mechanism of elongation during the process of translation.	**07**

****