Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV • EXAMINATION – SUMMER 2013

Subject Code: 140401 **Date: 07-06-2013**

Subject Name: Molecular Biology and Genetics

Time: 10:30am – 01:00pm **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 and explain the Mendel's law of segregation.	**07**
	(b)	Describe about characteristics of sex linked inheritance.	**07**
Q.2	**(a)**	Write a detail note on prokaryotic replication.	**07**
	(b)	Define the term crossing over. Enlist types of crossing over and explain about meiotic crossing over.	**07**
		OR	
	(b)	Write a detail account on wobble hypothesis.	**07**
Q.3	**(a)**	Why did Mendel use pea as the experimental material in his hybridizations? Give an account of his procedure and method of drawing the conclusions from the results of experiments.	**10**
	(b)	Differentiate between epistatics and dominance.	**04**
		OR	
Q.3	**(a)**	"DNA replication is semi conservative"- justify with suitable mechanism.	**07**
	(b)	Write a detail note on eukaryotic RNA polymerases engage in transcription.	**07**
Q.4	**(a)**	Describe the phenomenon of linkage by giving suitable examples. Why is linkage an exception to Mendel's second law?	**07**
	(b)	Discuss in detail about DNA replication of eukaryotic system.	**07**
		OR	
Q.4	**(a)**	Give detail account on Avery, Macleod and MacCarty experiment that proved that DNA as genetic material.	**07**
	(b)	With detail physiological significances, explain the term Muton, Recon, and cistron.	**07**
Q.5	**(a)**	Discuss about Rho dependant transcription termination prokaryotic system.	**07**
	(b)	Explain the process of transcription in eukaryotic system.	**07**
		OR	
Q.5	**(a)**	Define the term translation. Discuss about post translational modification in eukaryotes.	**07**
	(b)	How translation is done in prokaryotic system, explain suitable mechanism.	**07**

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