Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV • EXAMINATION – SUMMER • 2014

Subject Code: 140401 Date: 16-06-2014

Subject Name: Molecular Biology and Genetics

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)**	Discuss in detail about RNA polymerase involve in process of transcription of prokaryotes.	**07**
	(b)	Give a detail account on different linkages with labeled diagram.	**07**
Q.2	**(a)**	With labeled diagram explain the experiment that proves that DNA is the genetic material.	**07**
	(b)	Discuss law of independent assortment with a suitable illustration of dihybrid cross.	**07**
		OR	
	(b)	Write a note on "one gene one protein" hypothesis, with significance of contribution given by Badle and Tautam.	**07**
Q.3	**(a)**	Comment:- DNA replication is semi conservative.	**07**
	(b)	Give a brief account of enzymatic machinery of replication for eukaryotic system.	**07**
		OR	
Q.3	**(a)**	Describe the replication process in prokaryotic system with suitable diagram.	**10**
	(b)	Define the following terms with suitable explanation and example: Template strand, promoter	**04**
Q.4	**(a)**	Differentiate between types of RNA polymerases and their promoters involve in eukaryotic transcription.	**07**
	(b)	Describe in detail Rho dependant and Rho independent termination of transcription in prokaryotes.	**07**
		OR	
Q.4	**(a)**	Write a note on post transcriptional modification in eukaryotes.	**07**
	(b)	How prokaryotic genes are arranges, explain in detail?	**07**
Q.5	**(a)**	Enlist and discuss the steps involve in eukaryotic transcription.	**10**
	(b)	Give brief account on cistron, recon and muton.	**04**
		OR	
Q.5	**(a)**	Define the term translation. Discuss the enzymes involve in eukaryotic translation.	**07**
	(b)	Enlist and explain process involve as a part of eukaryotic translation.	**07**

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