Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV(NEW) – EXAMINATION – SUMMER 2019

Subject Code:2140401 Date:25/05/2019

Subject Name: Molecular Biology and Genetics

Time:02:30 PM TO 05:00 PM Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
1. **Figures to the right indicate full marks.**

			MARKS
Q.1	**(a)**	What is role of primer in the process of replication?	**3**
	(b)	Explain genetic linkage.	**4**
	(c)	Write a note on semi conservative mode of replication.	**7**
Q.2	**(a)**	What do you mean by gene?	**3**
	(b)	What is monocistronic and polycistronic mRNA?	**4**
	(c)	How was it proved that DNA is genetic material in prokaryotes? Explain	**7**
		OR	
	(c)	Explain Mendel's law of segregation with a suitable illustration.	**7**
Q.3	**(a)**	What are promotors.	**3**
	(b)	Compare epistasis and dominance.	**4**
	(c)	Give the detailed account of enzymes used in replication.	**7**
		OR	
Q.3	**(a)**	Enlist different proteins participating in DNA replication initiation.	**3**
	(b)	Write a short note on pleiotropy.	**4**
	(c)	Explain in detail about epistasis.	**7**
Q.4	**(a)**	What is role of t-RNA and draw its general structure.	**3**
	(b)	What is the reason for amazing accuracy of replication? Explain.	**4**
	(c)	Explain post transcriptional processing of tRNA	**7**
		OR	
Q.4	**(a)**	What is the role of promoter in transcription?	**3**
	(b)	Write a short note on RNA polymerase.	**4**
	(c)	Discuss about post transcriptional modifications.	**7**
Q.5	**(a)**	What are Okazaki fragments?	**3**
	(b)	Explain and represent schematically the "formation of initiation complex in bacteria" during protein synthesis.	**4**
	(c)	Give the overview of five stages of protein synthesis.	**7**
		OR	
Q.5	**(a)**	What do you mean by redundancy of genetic code?	**3**
	(b)	Explain the wobble hypothesis?	**4**
	(c)	Write a detailed note about post translational modification.	**7**

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