

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2018****Subject Code: 2140401****Date:12/12/2018****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.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) What is role of primer in DNA replication?	03
	(b) Write a short note on pleiotrophy with an example.	04
	(c) Explain structure of eukaryotic chromosome with diagram.	07
Q.2	(a) What do you mean by monocistronic and polycistronic mRNA?	03
	(b) Explain the term synapsis taking place during crossing over.	04
	(c) Explain Mendel's law of independent assortment with suitable illustration.	07
	OR	
	(c) Explain dominant epistasis with suitable illustration.	07
Q.3	(a) What do you mean by replisome and primosome?	03
	(b) Explain different types of RNA.	04
	(c) Explain mechanism of replication on lagging strand.	07
	OR	
Q.3	(a) Write a brief note on RNA polymerase.	03
	(b) Explain post replicational modification and its significance.	04
	(c) What are different ways of termination of transcription in prokaryotes? Explain any one in detail.	07
Q.4	(a) What do you mean by redundancy of genetic code?	03
	(b) Explain the role of helicase and SSB proteins in DNA replication.	04
	(c) Describe structure and processing of tRNA.	07
	OR	
Q.4	(a) What is coding strand and antisense strand?	03
	(b) Compare transcription and translation process.	04
	(c) Explain how amino acid is activated and then attached to its specific tRNA?	07
Q.5	(a) Explain the term promoter and pribnow box.	03
	(b) Explain conservative, semiconservative and dispersive model of replication.	04
	(c) Write a short note on wobble hypothesis.	07
	OR	
Q.5	(a) Explain denaturation and renaturation of DNA.	03
	(b) Explain the experiment that proved DNA to be genetic material in prokaryotes	04
	(c) How does termination of polypeptide synthesis occur?	07
