Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV EXAMINATION – WINTER 2015

Subject Code: 143504 **Date:06/01/2016**

Subject Name: Fundamentals of Biotechnology

Time: 02:30pm to 05:00pm **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 the term Biotechnology. Discuss the scope and importance of biotechnology in promoting human welfare.	**07**
	(b	What is biogas? Briefly describe the various substrates and different digesters used for biogas production.	**07**
Q.2	**(a)**	What are the criteria for good media? Explain in brief.	**07**
	(b)	What is gene expression? Explain with a suitable diagram with an example.	**07**
		OR	
	(b)	Write a short note on Host vector system.	**07**
Q.3	**(a)**	Enlist type of immunity and describe in detail innate and acquired immunity.	**07**
	(b)	List the function of the following bioinformatics tools: i) BLAST, ii) ENTREZ, iii) BROWSER, iv) GeneScan and v) GAME	**07**
		OR	
Q.3	**(a)**	What is antigen? Classify antigen and explain some properties.	**07**
	(b)	Define monoclonal antibody. How is it produced?	**07**
Q.4	**(a)**	Define cell. What are the types of cell? Explain briefly with suitable diagram	**07**
	(b)	How replication of Prokaryotic DNA can be realized?	**07**
		OR	
Q.4	**(a)**	Write short note on ABO and Rh system.	**07**
	(b)	Explain the method of passing replication through Elongation and fermentation.	**07**
Q.5	**(a)**	Explain about plasmid stability in recombinant cell culture.	**07**
	(b)	Explain the PCR procedure under following heads: i) PCR primers, ii) PCR efficiency, iii) annealing temperature and iv) amplicon size.	**07**
		OR	
Q.5	**(a)**	Give the nomenclature and classification of enzymes. Explain the properties of enzymes also.	**07**
	(b)	Write short notes on the following: i) Cosmid, ii) Phasmid, iii) M13 phage vector iv) restriction enzyme	**07**

****