Seat No.:	Enrolment No.

## GUJARAT TECHNOLOGICAL UNIVERSITY B.PHARM – SEMESTER– VI – EXAMINATION – SUMMER-2017

Subject Code: 260002 Date:01/05/2017 Subject Name: Pharmaceutical Microbiology and Biotechnology - II

Time: 10.30 AM to 1.30 PM

Total Marks: 80

## **Instructions:**

1.	Attempt	anv	five	questions.
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- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

Q.1	(a) (b) (c)	Define Biotechnology. Discuss scope and application in the field of Pharmacy. Describe bacterial variation with suitable example. Enumerate different types of mutations. Explain in details any one.			
Q.2	(a) (b) (c)	Define Genetic Recombination. Write a short note on Protoplast fusion. How humulin is prepared biotechnological. How monoclonal antibodies are produced?	06 05 05		
Q.3	(a) (b) (c)	What is antigen? Write a detail note on Immunoglobulins. Classify different types of immunity with example. Explain the method of production and standardization of BCG vaccine.	06 05 05		
Q.4	(a) (b) (c)	Describe antigen antibody reactions and its application.  Describe the various steps involved in gene cloning with suitable diagram  Write difference between 1) Vaccine & Sera, 2) Active & Passive immunity.			
Q.5	(a) (b) (c)	Describe methods for preparation and maintenances of master culture in industries.			
Q. 6	(a) (b) (c)	Write a note on recombinant DNA technology. Explain Polymerase Chain Reaction in detail. Write short notes on fermentation media and pretreatments.	06 05 05		
Q.7	(a) (b) (c)	What is enzyme? Explain in detail enzyme kinetics Describe surface immobilization by covalent coupling. Give applications of Immobilized enzymes in pharmacy	06 05 05		

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