Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. - SEMESTER - VI • EXAMINATION - WINTER • 2015

Subject Code: 260002 Date: 30-12-2015 Subject Name: Pharmaceutical Microbiology and Biotechnology II Time: 02:30 pm - 05:30 pm Total Marks: 80			
Instruction	ons:		
2.	Make	npt any five questions. e suitable assumptions wherever necessary. res to the right indicate full marks.	
Q.1	(a)	Mention applications of biotechnology in Pharmacy.	06
	(b)	Discuss in detail 'translation' in DNA replication.	05
	(c)	Write a note on frame-shift mutation.	05
Q.2	(a)	Give applications of immobilized enzymes.	06
	(b)	What are the different techniques of immobilization of enzymes?	05
	(c)	What is Gene Cloning? Give its importance.	05
Q.3	(a)	Write a note in on substrates used in fermentation process.	06
	(b)	Give an account of double helical structure and replication of DNA.	05
	(c)	Discuss regulation of Gene expression in Bacteria.	05
Q.4	(a)	How do antigens and antibodies react with each other?	06
	(b)	Give different types of interferon. How do they work?	05
	(c)	Give a brief account of "Principles of immunology".	05
Q.5	(a)	Write a note on protoplast fusion.	06
	(b)	Write a note on drugs produced by Biotechnology. 1) Humatropes 2) Humulin	05
	(c)	Write a note on plasmids.	05
Q. 6	(a)	What are vaccines? Write a note on development of vaccines from small-pox to hepatitis B.	06
	(b)	How are vaccines standardized?	05
	(c)	How are vaccines stored?	05
Q.7	(a)	Enumerate different types of mutations. Explain in details any one of them.	06
	(b)	Name the cultures and process used for the preparation of the following using biotechnology 1) Streptomycin. 2) Penicillin	05

(c) Draw a neat and labeled diagram of fermentor.

05