

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Pharm - SEMESTER - V EXAMINATION - WINTER 2025

Subject Code: BP505TT

Date: 26-11-2025

Subject Name: Pharmaceutical Biotechnology

Time: 10:30 AM TO 01:30 PM

Total Marks: 80

Instructions

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

	Marks
Q.1 (a) Give applications of Biotechnology in the field of pharmaceutical sciences.	06
(b) What is biosensor? Discuss components of biosensors.	05
(c) Write a note on Enzyme Immobilization and its applications.	05
Q.2 (a) What is Recombinant DNA technology? Write steps involved in Recombinant DNA Technology.	06
(b) Write in short on 1. Cloning vectors 2. Restriction endonucleases 3. DNA ligase	05
(c) Write a note of Polymerase Chain Reaction- PCR.	05
Q.3 (a) Give structure and functions of Major Histocompatibility Complex.	06
(b) Write short note on Hybridoma Technology.	05
(c) List out types of hypersensitivity reactions and write on Type-I hypersensitivity reactions.	05
Q.4 (a) Write a note on ELISA.	06
(b) Differentiate between Eukaryotes and Prokaryotes.	05
(c) Differentiate conjugation, transformation and transduction.	05
Q.5 (a) Define fermentation. Draw labeled diagram of typical fermenter and give role of different parts of fermenter.	06
(b) Explain Production of Vitamin B 12 with flow chart.	05
(c) Enlist Blood Products. Write a note on collections, Processing and storage of Whole Human Blood.	05
Q.6 (a) Define Immunity. What are antibodies? Draw neat general structure of Immunoglobulin.	06
(b) Write a short note on plasma substitute.	05
(c) Write a note on Production of Hepatitis B vaccine.	05
Q.7 (a) Define Mutation. Give types of Mutation.	06
(b) Explain the catalytic reaction performed by following enzymes: Protease, Amylase, Peroxidase, Lipase, and Penicillinase.	05

(c) What is protein engineering? Give applications in protein engineering in pharma and medicine.

05
