

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Ph. - SEMESTER-5 • EXAMINATION – SUMMER -2020**

**Subject Code: BP505TT****Date: 02-11-2020****Subject Name: Pharmaceutical Biotechnology****Time: 2:30 PM TO 5:30 PM****Total Marks: 80****Instructions:**

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

- Q.1** (a) Define Biosensors. Give Working and Applications of Biosensors in field of Pharmacy. **06**  
(b) Write a note on Protein Engineering. **05**  
(c) Give applications of Pharmaceutical Biotechnology. **05**
- Q.2** (a) Write a note on Enzyme Immobilization and its applications. **06**  
(b) Write a note on Polymerase Chain Reactions (PCR). **05**  
(c) Define Recombinant DNA Technology and give its applications. **05**
- Q.3** (a) Write a note on Humulin. **06**  
(b) Write a note on Production of Hepatitis B vaccine. **05**  
(c) Explain role of Cloning Vectors, Restriction endonucleases enzymes and DNA ligases enzymes in genetic engineering. **05**
- Q.4** (a) Define Immunity. Draw neat and clean structure of Immunoglobulins. **06**  
(b) Write a note on Hypersensitivity Reactions. **05**  
(c) Give structure and functions of Major Histocompatibility Complex (MHC). **05**
- Q.5** (a) Write a note on Monoclonal antibody Production and its applications. **06**  
(b) Enlist Blood Products. Write a note on collections, Processing and storage of Whole Human Blood. **05**  
(c) Give Ideal Properties of Plasma Substituent. Write a note on Dextran. **05**
- Q. 6** (a) Define Mutation. Give types of Mutation. **06**  
(b) Write a note on Griffith Theory of Transformation. **05**  
(c) Write a note on Immuno blotting Techniques. **05**
- Q.7** (a) Draw neat and Clean diagram of Ideal Fermenter. Explain various controls of it. **06**  
(b) Explain Production of Penicillins with flow chart. **05**  
(c) Explain Production of Vitamin B 12 with flow chart. **05**

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