

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.PHARM SEMESTER-V- EXAMINATION – WINTER 2019**

**Subject code: BP505TT****Date: 26/11/2019****Subject Name: Pharmaceutical Biotechnology****Time: 02:30 PM TO 05:30 PM****Total Marks: 80****Instructions:**

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

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|-------------|---|-----------|
| <b>Q.1</b>  | (a) Give application of biotechnology in pharmaceutical sciences.   | <b>06</b> |
|             | (b) Enumerate methods of immobilization and explain entrapment in brief.  | <b>05</b> |
|             | (c) What are the components of biosensors?  | <b>05</b> |
| <b>Q.2</b>  | (a) Describe general consideration of enzyme production with flow chart.  | <b>06</b> |
|             | (b) Write commercial uses of following industrial enzymes:<br>Amylase, Lipase, Catalase, Protease and Pectinase | <b>05</b> |
|             | (c) Give ideal properties of plasma substitutes. Give the difference between<br>Plasma and Serum                | <b>05</b> |
| <b>Q.3</b>  | (a) Explain basic steps of recombinant DNA technology with flow diagram.  | <b>06</b> |
|             | (b) What are official blood products and explain anticoagulants.  | <b>05</b> |
|             | (c) What is PCR? Write its application.   | <b>05</b> |
| <b>Q.4</b>  | (a) Explain Immunoglobulin and write its function.  | <b>06</b> |
|             | (b) Describe salient features of MHC.   | <b>05</b> |
|             | (c) Differentiate B cell and T cell in immune system.   | <b>05</b> |
| <b>Q.5</b>  | (a) Enumerate types of hypersensitivity reaction and explain anaphylactic<br>hypersensitivity.                  | <b>06</b> |
|             | (b) Differentiate Active immunity and Passive immunity  | <b>05</b> |
|             | (c) Write application of hybridoma technology.  | <b>05</b> |
| <b>Q. 6</b> | (a) Describe types of biotransformation reactions.  | <b>06</b> |
|             | (b) Differentiate Eukaryotes and Prokaryotes  | <b>05</b> |
|             | (c) Explain role of mutation in biotechnology   | <b>05</b> |
| <b>Q. 7</b> | (a) Give ideal requirement of fermenter and sketch the general diagram of it.                                   | <b>06</b> |
|             | (b) Enumerate the methods of sterilization and explain moist heat<br>sterilization.                             | <b>05</b> |
|             | (c) Flow diagram of penicillin production by fermentation   | <b>05</b> |

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