

**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.

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

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