

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Pharm - SEMESTER- V • EXAMINATION – SUMMER-2021**

**Subject Code: BP505TT****Date: 07/08/2021****Subject Name: Pharmaceutical Biotechnology****Time: 02:30 p.m. – 05:30 p.m.****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) Define enzyme immobilization – write any one method of enzyme immobilization                       | <b>06</b> |
|             | (b) Write a brief note on biosensors.  | <b>05</b> |
|             | (c) What in protein engineering. Write on examples of proteins engineered using in silico approaches.  | <b>05</b> |
| <b>Q.2</b>  | (a) Give applications in protein engineering in pharma and medicine.                                   | <b>06</b> |
|             | (b) Explain uses of microbes in biotech and pharma industries. What are plasmids and transposones.     | <b>05</b> |
|             | (c) Show microbial production of amylase in the form of a flow chart.                                  | <b>05</b> |
| <b>Q.3</b>  | (a) Write on any one<br>1. penicillinase 2. Hybridome technology 3. Proteases                          | <b>06</b> |
|             | (b) Explain basic steps involved in genetic engineering.   | <b>05</b> |
|             | (c) Write on application of genetic engineering in pharma and biotech.                                 | <b>05</b> |
| <b>Q.4</b>  | (a) Write in short on any one<br>1. Cloning vectors 2. Restriction endonucleases 3. DNA ligase         | <b>06</b> |
|             | (b) write on PCR.  | <b>05</b> |
|             | (c) How insulin is produced using rDNA technology?   | <b>05</b> |
| <b>Q.5</b>  | (a) Classify immunoglobulins draw their basic structure showing differences.                           | <b>06</b> |
|             | (b) Give general functions of immunoglobulins  | <b>05</b> |
|             | (c) Write on properties of immunoglobulins.  | <b>05</b> |
| <b>Q. 6</b> | (a) Write brief on any one<br>1. Bacterial vaccines 2. Toxoids and anti-toxins 3. Mutagenic agent      | <b>06</b> |
|             | (b) Give an overview on hyper sensitivity reactions  | <b>05</b> |
|             | (c) Explain molecular mechanism of immunosuppression, write in brief on immunosuppressive medications. | <b>05</b> |
| <b>Q.7</b>  | (a) Write in brief on human blood derivatives.   | <b>06</b> |
|             | (b) Explain working of ELISA or western blotting   | <b>05</b> |
|             | (c) Write on blood components and their preparation.   | <b>05</b> |

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