

GUJARAT TECHNOLOGICAL UNIVERSITY**B.PHARM - SEMESTER- 5 EXAMINATION – SUMMER-2024****Subject Code:BP505TT****Date: 15/05/2024****Subject Name: Pharmaceutical Biotechnology****Time: 02.30 p.m. to 5.30 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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| Q.1 | (a) | What are restriction endonucleases enzymes? Explain its function for prokaryotic organism. | 06 |
| | (b) | Enumerates methods for enzyme immobilization. Explain the advantages and limitation of any two. | 05 |
| | (c) | i. Comment : Cell wall is essential part of all eukaryotic cells. | 02 |
| | | ii. Give two examples of each : Live bacterial vaccine, attenuated viral vaccine and toxoids. | 03 |
| Q.2 | (a) | What are MHC? Explains its importance with respect to adaptive immune system. | 06 |
| | (b) | Explain the mechanism of HAT media for developing monoclonal antibodies. | 05 |
| | (c) | i. Differentiate: innate and acquired immunity with suitable example. | 03 |
| | | ii. Comment: Antisera are example of active immunity. | 02 |
| Q.3 | (a) | Explain in detail essential characteristics of biosensors. | 06 |
| | (b) | Write a short note on PCR. | 05 |
| | (c) | i. Comment: Fermentation is always anaerobic process. | 02 |
| | | ii. Explain precautionary measure required to preserve the vaccines. | 03 |
| Q.4 | (a) | Differentiate: specialized transduction and generalized transduction in the context of genetic recombination. | 06 |
| | (b) | Define mutation and classify mutagenic agents with suitable example. | 05 |
| | (c) | Define plasma substitutes with examples. | 02 |
| | | ii. Differentiate: Plasmid and transposomes. | 03 |
| Q.5 | (a) | Write a short note on Ames test. | 06 |
| | (b) | Define cloning vectors. Explain viral vectors in detail with suitable examples. | 05 |
| | (c) | Write a short note on production of hepatitis- B vaccine by rDNA technology | 05 |
| Q. 6 | (a) | Write a short note on synthesis of Griseofulvin by fermentation technology. | 06 |
| | (b) | Explain the catalytic reaction performed by following enzymes: Protease, Amylase, Peroxidase, Lipase, and Penicillinase. | 05 |
| | (c) | What are immunoglobulins? Discuss its structure and types in detail. | 05 |
| Q.7 | (a) | Define protein engineering. Explain its application in pharmacy field. | 06 |
| | (b) | Write a short note on blotting technique used to detect proteins. | 05 |
| | (c) | Draw a labelled diagram of fermenter and discuss various parts of it. | 05 |