

## Sub:- Pharmaceutical Biotechnology.

QP Code : 21770

(3 Hours)

[ Total Marks : 70

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|---|---|
| 1. (a) What is r-DNA technology?  | 1 |
| (b) Define autoimmunity.  | 1 |
| (c) Enlist types of vaccines.   | 1 |
| (d) What is DNA probe. Give its applications.                                   | 2 |
| (e) Define DNA fingerprinting with its applications.                            | 2 |
| (f) RBC contains DNA. True or false give explanation.                           | 2 |
| (g) Draw structure of pBR322 plasmid.   | 2 |
| (h) State difference between bacterial and viral vaccine.                       | 2 |
| (i) What are biosensors discuss with applications.                              | 2 |
| 2. (a) Explain the production of insulin by r-DNA technology.                   | 4 |
| OR  |   |
| Explain the production of penicilline G by fermentation method.                 | 4 |
| (b) Explain the role of lac operon in bacterial expression system with diagram. | 4 |
| (c) Discuss in brief ELISA with diagram.  | 3 |
| 3. (a) What is fermentation technology? Discuss the production of dextran.      | 4 |
| (b) What is DNA sequencing. Enlist types and explain any one method.            | 4 |
| OR  |   |
| What is PCR? Explain steps involved with diagram.                               | 4 |
| (c) Explain monoclonal antibody production with application.                    | 3 |
| 4. (a) Enlist types of fermenters. Explain factors affecting fermentation.      | 4 |
| OR  |   |
| Describe in brief about hybridoma technology.                                   | 4 |
| (b) What is gene therapy. Explain any two methods of gene transfer.             | 4 |
| (c) Write short note on single cell protein with its applications.              | 3 |
| 5. (a) Explain two methods of enzyme immobilization with example.               | 4 |
| (b) Discuss innate defence mechanism in brief.                                  | 3 |
| (c) What is transgenesis. Explain one example of transgenic animal.             | 4 |
| OR  |   |
| (d) Define hypersensitivity and explain type IV Hypersensitivity.               | 4 |
| 6. (a) What is cDNA Library. Explain with one example.                          | 3 |
| (b) Draw labelled diagram of fermenter design.                                  | 3 |
| (c) Write short note SDS PAGE.  | 3 |
| (d) Write short note on clonal selection theory.                                | 2 |