

PHARMACEUTICAL BIOTECHNOLOGY

Subject Code: THEORY 3

hours/week

UNIT -I

1. Brief introduction to Biotechnology with reference to Pharmaceutical sciences.
2. Immunology and Immunological Preparations: Principles of immunology and immunological products, antigens, antibodies, Immune system- cellular and humoral immunity, immunological tolerance, Hypersensitivity, Active and passive immunization.

UNIT -II

3. Genetic Code and Protein Synthesis: Genetic code, components of protein synthesis, inhibition of protein synthesis. Brief account of protein engineering and Polymerase Chain Reactions.
4. Genetic Recombination: Gene cloning and its applications. Hybridoma Technology- Production, Purification and Applications.

UNIT -III

5. Microbial Transformation: Introduction to Microbial biotransformation and applications.
6. Immuno blotting techniques- ELISA, Western blotting, Southern blotting. Mutation.

UNIT -IV

7. Fermenter, its design, control of different parameters. Design of fermentation process,
8. Isolation of fermentation products with special reference to Penicillin, Citric acid and Vitamin B12.

UNIT -V

9. Enzyme Biotechnology: Methods of Enzyme Immobilization and applications.
10. Biosensors: Working and application in pharmaceutical industry.
11. Study of enzymes such as Pencillinase, Streptokinase and Amylases and Proteases etc.

RECOMMENDED BOOKS :

1. Industrial Microbiology by Casida.
2. Industrial Microbiology by A.H. Patel.
3. Industrial microbiology by Prescott and Dunn.
4. Pharmaceutical Biotechnology by Vyas and Dixit.
5. Molecularbiology and Genetic Engineering by A.M.Narayanan, A.M.Selvaraj, A.Mani
6. Text Book of Microbiology by Anantanarayana and Panicker.
7. Concepts in Biotechnology by Balasubramaniam.
8. Molecular Biotechnology by B R Glick.
9. Molecular Biotechnology by Gingold