

## **1.6 Bio-Technology & Fermentation including Tissue culture**

1. Enzymes: Discovery, classification and nomenclature of Enzymes, Michaelis-Menten equation, Kinetics of inhibition, regulation of enzyme activity, Allosteric enzymes, Iso enzymes, Study of immobilized enzymes and their behavior. Enzymes immobilized on inorganic supports, enzymes electrodes, enzyme based sensors- Antibiotic inactivating enzyme.
2. Advantages of Monoclonal antibodies in study of cell surface markers.
3. Tissue culture: Production of pharmaceuticals by tissue culture.
4. Industrial Biotechnology: Fermentative production of Penicillin, semisynthetic penicillins, streptomycin, riboflavin, ascorbic acid, amylases, proteases, lysine, glutamic acid.
5. Introduction to Genetics: Bio transformations- DNA as a genetic material, DNA structure and molecular properties, Replication of DNA polymerases, semiconservative replication, recombinant DNA techniques.
6. Energy production: By Bio Mass, Bioenergy, Ethanol, Biogas, Hydrocarbons.
7. Halometabolites: Biosynthesis and biological activity.

### **PRACTICALS**

Practical's based on theory.