

OBJECTIVES: To enable the students to-

- Learn basic concepts of enzyme assays
- Identify the various factors that regulate enzyme catalysis
- Qualitatively and quantitatively carbohydrates
- Determine the concentrations of amino acids and proteins
- Extraction of nucleic acids and their estimation

Course Outcomes- The students will be able to

CO1: Able to assay different types of Enzymes

CO2: Determine the activity of enzymes by varying physical and chemical variables

CO3: Establish the parameters that influence enzyme activity

CO4: Estimate nucleic acids like DNA and RNA in biological specimens like forensics sciences

CO5: Develop hands on experience in estimation of proteins which is required in medical lab diagnostics

COURSE:

1. Assay of amylase.
2. Assay of urease.
3. Assay of catalase
4. Effect of pH, temperature and substrate concentration on enzyme activity.
5. Estimation of glucose by DNS method.
6. Estimation of glucose by Benedict's titrimetric method.
7. Estimation of total carbohydrates by Anthrone method.
8. Isolation of DNA from onions and its quantification
9. Estimation of amino acid by Ninhydrin method.
10. Estimation of protein by Biuret method.

Recommended books:

1. Understanding enzymes: Palmer T., Ellis Harwood ltd., 2001.
2. Enzyme structure and mechanism. Alan Fersht, Freeman & Co. 1997
3. Principles of enzymology for food sciences: Whitaker Marc Dekker 1972.
4. Principles of Biochemistry, White. A, Handler, P and Smith.
5. Biochemistry, Lehninger A.L.
6. Biochemistry, Lubert Stryer.
7. Review of physiological chemistry, Harold A. Harper.
8. Text of Biochemistry, West and Todd.
9. Metabolic pathways – Greenberg.
10. Mitochondria, Munn.
11. Biochemistry, 2nd Edition, G. Zubay.