ST.JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

III SEMESTER **BIOCHEMISTRY**  TIME:2Hrs/Week

BCH 3853(2) **“QUANTITATIVE ANALYSIS”** Max.Marks:50

w.e.f. 21AI Batch  **PRACTICAL SYLLABUS**

**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:** Ableto assaydifferenttypesofEnzymes

**CO2:**Determinetheactivityof enzymesby 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, LubertStryer.
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.

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