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

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

BCH-Mi1-3851 (2) **ANALYTICAL TECHNIQUES**  Max.Marks:50

w.e.f. 2024-25 admitted batch (23AK) **PRCTICAL SYLLABUS**

**Course Objectives: By the end of this course the learner can:**

1. Identify Ascorbic acid in fruits

2. Learn Principles of basic agarose gel Electrophoresis

3. Estimate vitamins and minerals

4. Understand lipid characterization protocols

5. Learn working of Soxhlet equipment

**Course Outcomes: On completion of this course students will be able to:**

1. Estimate Vitamin C content in food samples

2. Extract and estimate plant pigments and vitamins

3. Extimate phosphate content in food and microbial samples

4. Analyse and characterise quality of lipids

5. Extract oil and organic molecules by Soxhlet method

**List of Experiments:**

1. Estimation of ascorbic acid

2. Separation and estimation of total carotenoids and β-carotene

3. Extraction and estimation of vitamin A, vitamin E, niacin and free amin acid concentration.

4. Estimation of phosphorus by Fiske and Subbarow method

5. Characterization of fats – estimation of saponification number, iodine number, acid number and R. M. Number

6. Extraction of Phytoconstituents by Soxhlet and quantification

**Reference Books:**

1. Physical Biochemistry- Application to Biochemistry and Molecular Biology: Friefelder D. WH Freeman and Company

2. Principles and Techniques of Biochemistry and Molecular Biology: - Ed. K. Wilson and J. Walker, Cambridge University Press.

3. The Tools of Biochemistry: Cooper T.G., John Wiley and Sons Publication.

4. Biophysical chemistry. Principles and Techniques: Upadhayay A, Upadhayay K and Nath N., Himalaya publishing house.

5. Experimental Biochemistry. Cark Jr J. M. and Switzer R.L, W.H. Freeman and Company.

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