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

**w.e.f. AY 2023-24**

**II SEMESTER**

**Course No-3 BIOMOLECULES PRACTICALS**

**BCH Mi12801(1)**

**No. of Credits- 1 Hrs/Wk- 2**

**COURSE OBJECTIVES**

To enable students to –

* Learn qualitative analysis of monosaccharides and disaccharides
* Prepare buffers as per the need of the experiment
* Analyse amino acids and lipids Qualitatively
* Analyse protein sample by various methods
* Determine amino acid and protein composition of samples quantitatively

COURSE OUTCOMES

Student will be able to-

* Prepare buffers selectively as per the need of the experiment or biomolecule
* Differentiate carbohydrate by using qualitative tests
* Establish methods to differentiate various amino acids
* Analyse the quality of a given oil
* Develop absorption spectra for proteins and DNA and quantitate them

**List of Experiments**

1. Preparation of buffers (acidic, neutral, and alkaline) and determination of pH.

2. Qualitative identification of carbohydrates- glucose, fructose, ribose/xylose, maltose, sucrose, lactose, starch/glycogen.

3. Qualitative identification of amino acids- histidine, tyrosine, tryptophan, cysteine, arginine.

4. Qualitative identification of lipids- solubility, saponification, acrolein test, Salkowski test, Lieberman-Burchard test.

5. Preparation of Osazones and their identification

6. Estimation of proteins in biological samples:

a. Biuret method.

b. Folin-Lowry method.

c. UV method.

d. Bradford’s dye binding method

7. Estimation of amino acid by Ninhydrin method.

8. Estimation of tyrosine by Million’s –reaction

**Recommended Books**

1. Fundamentals of Biochemistry –Jain, J.L., Jain, S., Jain, N. S. Chand & Co.

2. Biochemistry – Satyanarayana. U and Chakrapani. U, Books & Allied Pvt. Lt

3. Nelson.D.L. and Cox.M..M -Lehninger’s Principles of Biochemistry- Freeman & Co.- 7 th Edition