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

II SEMESTER **BIOTECHNOLGY** TIME: 3 Hrs/Week

BTH-Ma-1-2751 (3) **BIOMOLECULES AND ANALYTICAL TECHNIQUES**

W.e.f. 2023-24 admitted batch (23AK) Max. Marks: 50

PRACTICAL SYLLABUS

OBJECTIVES: To enable the students to –

- Expertise with sophisticated techniques
- Familiarize on quantitative and qualitative estimations of biomolecules

COURSE OUTCOMES: Students will

- **CO1:** Attain knowledge in quantitative estimation of biomolecules.
- **CO2:** Be proficient in separation of molecules with regard to their physico-chemical criterion.
- **CO3:** Be skillful in statistical methods.

COURSE:

1. Introduction to basic instruments (Principle standard operation procedure) demonstration and record
2. Calculation of molarity, normality and molecular weight of compounds.
3. Qualitative analysis of carbohydrates (sugars)
4. Quantitative analysis of carbohydrates
5. Quantitative estimation of protein - Lowery method
6. Estimation of DNA by diphenylamine reagent
7. Estimation of RNA by orcinol reagent
8. Assay of protease activity
9. Preparation of starch from potato and its hydrolyze by salivary amylase
10. Preparation of standard buffer and pH determination
11. Separation of amino acids by paper chromatography
12. Separation of lipids of TLC
13. Agarose gel electrophoresis
14. Calculation of mean, median and mode

REFERENCES

1. P.Gunasekaran. 2007. Laboratory Manual in Microbiology. New Age International.
2. D O Hall, S E Hawkins. 1974. Laboratory Manual of Cell Biology. British Society for Cell Biology, Published by Crane, Russia.
3. Mary L. Ledbetter. 1993. Cell Biology: Laboratory Manual. Edition: 2. Published by Ron Jon Publishing. Incorporated.
4. Gunasekaran, P. 2009. Laboratory Manual in Microbiology. 1st Edition. New Age International Publishers.

5. Dr. T. Sundararaj. Microbiology Laboratory Manual. 2005. Dr.A.L. MPGIBMS, University of Madras, Taramani, Chennai – 600 113.
6. James G. Cappuccino and Natalie Sherman. 2013. Microbiology: A Laboratory Manual. 10th Edition. Benjamin Cummings.
7. Dr. David A Thompson. 2011. Cell and Molecular Biology Lab Manual.

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