



Course Code	PS01CBIC54	Title of the Course	LAB-I
Total Credits of the Course	04	Hours per Week	04

Course Objectives:	<ol style="list-style-type: none">1. To learn to prepare solution with precise concentration2. To learn fundamental Biochemistry and Molecular biology practicals. To learn about chemistry of biomolecules and their qualitative analysis.3. To learn to estimate various biomolecules using spectrophotometric techniques.4. To learn techniques for isolation of biomolecules like solvent extraction, filtration, various chromatographic techniques.
--------------------	--

PS01CBIC54 (Lab 1)

1. Orientation to laboratory instruments: pH meter, visible spectrophotometer, centrifuge, water bath, incubator/shaker, autoclave, hot air oven.
General laboratory safety instructions and good laboratory practices. Arrangements of lab chemicals.
2. Biochemical calculations, Preparation of molar, normal solutions
3. Preparation of Buffer
4. Microbial culture transfer techniques and isolation and maintenance of pure cultures.
5. To isolate the genomic DNA from *E. coli* cells.
6. Quantification of given nucleic acid solution and determination of its purity, concentration spectrophotometrically.
7. To separate nucleic acid fragments using agarose gel electrophoresis.
8. To estimate DNA by DPA method in unknown sample.
9. RNA estimation by orcinol method
10. Quantitative estimation of total carbohydrates.
11. Quantitative estimation of reducing and nonreducing sugars
12. Extraction and Estimation of total proteins.
13. Determination of acid value, iodine number and Saponification number.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%





Course Outcomes: Having completed this course, the learner will be able to

1.	Culture and maintain bacterial and yeast cells aseptically in lab.
1.	Isolate and estimate DNA and RNA.
2	Learn spectrophotometric estimation of all biomolecules.
3.	Separate biomolecules using suitable chromatographic techniques.

References:

1	Thimmaiah S. K. (2012). Standad Methods of Biochemical Analysis. Kalyani Publishes, New Delhi, India.
---	---

