

LSC 441 - LIFE SCIENCES PRACTICALS - I

(Selected topics)

1. Good laboratory practice
2. pH, buffers, etc
3. Calculation of molar extinction coefficient for CuSO_4 , $\text{K}_2\text{Cr}_2\text{O}_4$, etc
4. Absorption measurements
5. Protein estimations
6. Enzyme kinetics for determination of K_m value, spectrophotometric assay for enzymatic action, Beer-Lambert Law experiment
7. Carbohydrates and lipids analysis
8. Protein purification
9. Chromatography (a) TLC, (b) paper, and (c) GC
10. Microbial diversity
11. Isolation of microbes from air, water, soil, and plants
12. Gram staining
13. Establishing clonal and ethnic population of bacteria
14. Bacterial growth curve/kinetics
15. Bacterial staining and identification
16. Sectioning of tissues (plant and animal)
17. Staining of different plant cell types
18. Study of different plant groups using permanent slides
19. Karyotyping of chromosomes - Onion & Tradescantia buds
20. Gel electrophoresis
21. Centrifugation, sub-cellular fraction
22. Flow cytometric evaluation of cell population
23. Study of phase contrast and fluorescence microscopy, by phase objects and autofluorescent specimens or stained with fluorochromes, such as, carbocyanine in diacetate, aniline blue, calcofluor white, Evansblue and neutral red
24. Isolation and purification of nuclei and their staining with Feulgen stain or DAPI
25. Isolation of mitochondria and their visualization with Janus green B and mitotracker