

BACHELOR OF SCIENCE in BOTANY (HONS)
SEMESTER – VI

Paper Code: BOT-610(X)

BOT-610/BOTANY -X PRACTICAL (Based on theory papers BOT-608 and BOT-609) 100 MARKS

PRACTICAL LABORATORY

1. Field observation of local vegetable.
2. Study of structure of a plant community by random & belt transect methods.
3. Determination of density and abundance of vegetation in a community by using minimum size of quadrat.
4. Determination of physical characteristics of soil like pH, Temperature and moisture.
5. Water analysis determination of chlorine dissolved CO_2 in water and measurement of pH).
6. Determination of dissolved oxygen and biochemical oxygen demand (BOD) in unpolluted and polluted water.
7. Determination of stomata frequently using leaf epidermal peeling/impression.
8. Separation of plant pigment by paper chromatography technique and chemical method.
9. Isolation of chloroplast and demonstration of Hill's activity.
10. Estimation of starch by photosynthesizing leaf.
11. Estimation of protein by Bradford method.
12. Paper chromatography separation of amino acids.
13. Measurement of pH of beet, carrot, potato, tuber, Amaranth leaves and sap of water hyacinth.
14. Study of cell structure from onion leaf peels; demonstration of staining and mounting methods.
15. Comparative study of cell structure in Onion cells, Hydra and Spirogyra. Study of cyclosis in Tradescantia stamens/cells hairs.
16. Study of plastids to examine pigment distribution in plants, (e.g. Cassia, Lycopersicon, Capsicum).
17. Examination of electron micrographs of eukaryotic cell with special reference to organelles.

18. Study of various stage of mitosis and meiosis using appropriate plant material (e.g. root tips, flower buds of onion/pea/broad/bean).
19. Determination of chromosome counts from dividing pollen mother cells, root tips and pollen grains.
20. Preparation of chromosome maps from 3-points test cross data.
21. Correlation of floral structure with pollination system (e.g. Salvia, Sesamini, Triticum, oriza, Ricinus).
22. Field exploration for detection of male sterile plants and estimation of their pollen for locally grown crops plants e.g. tomato, lemon etc.
23. Estimation of pollen ovule ratios and its bearing on pollination system.
24. Emasculation and bagging of flowers of Brassicaceae, Poaceae, Malvaceae etc. Pollination them manually and estimating fruits and seed set.
25. Preparation of tissue culture media, sterilization and inoculation of plant materials.
26. Demonstration of technique of in vitro culture of various explains.
27. Isolation of plant protoplasts (e.g. tobacco, petunia) using enzymes available commercially and estimation of their yield.
28. Separation of DNA fragments through gel electrophoresis.
29. Isolation of plasmids for Bacillus/pseudomonas.
30. Hybridization experiments - F1 and available F2 material analysis for specific character.
31. Determination of mean, standard deviation using MS EXCEL/SPSS.
32. Preparation of presentation of cell organelles using MS PowerPoint or similar packages.
33. Retrieving the Botanical articles from internet.