

**BACHELOR OF SCIENCE in BOTANY (HONS)
SEMESTER – V**

Paper Code: BOT-507(P)-VII

BOT-507(P)/BOTANY - VII PRACTICAL (Based on theory paper BOT-505 and BOT-506) 100 MARKS

PRACTICAL LABORATORY

1. Preparation of culture media for bacteria and fungi (nutrient agar and PDA).
2. Isolation of microorganisms (bacteria and fungi) from soil/water/air.
3. Pure culture maintenance of bacteria and fungi.
4. Staining of bacteria and fungi.
5. Microscopic study of Bacillus, Coccus, Staphylococcus, Spirillum, Eschirichia, Nostoc, Anabaena Sacharomyces, Candida, Aspergillus, Trichoderma.
6. Morphological and anatomical studies of different types of root nodules (pea, broad bean Mimosa, Sestania).
7. Demonstration of Koch's postulates.
8. Symptoms, causal organisms and microscopic studies of diseased plant segment theory syllabus.
9. Demonstration of commercial fungicides and equipment's for field application.
10. Demonstration studies of thallus and reproductive structures of Riccia, Anthoceros and Polygomtan.
11. Demonstration studies of morphological and anatomical structures of Lycopodium. Selaginella and Marshilea in relation to stellar evolution and heterospory.
12. Gymnosperm and palaeobotany: Ginkgo and Taxus - Temporary mounts of transverse sections of young and mature stems, radial section and maturation secondary wood; transverse and vertical sections of needle, whole mounts of mature microspores, young and mature embryo. Ephedra- T.S. of node and internode of stem, whole mount of epidermal peel, L.S. of Leaf microspores and embryos , permanent preparation of anther and ovule.
13. Examination and classification of specimen/slides of the fossil plants as per syllabus.

14. Advance plant Taxonomy; Description and classification up to genus of a representative Magnoliaceae: Michelia. Brassicaceae: Brassica/Cardamine Rutaceae : Citrus. Fabaceae: Crotalaria/Vigna/Cassia/Caesalpinia/Mimosa/Acacia. Myraceae: Vallistemon/Eucalyptus. Anardaceae: Mangifera Cucurbitaceae: Luffa. Rubiaceae: Mussaenda

Apocynaceae: Vinca Asclepiadaceae: Calotropis/Asclepius Acanthaceae: Justicia/Adhatoda Verbinaceae: Duranta/Lantana Polygonaceae: Polygonum Orchidaceae: Vanda/Dendrobium Scitamineae: Musa/Canna/Maranta/Zingiber Araceae: Phoenix Cyperaceae: Cyperus.

15. Utilization of plants and Ethnobotany: Collection and identification of five plants each used as a source of carbohydrate, protein, wood, oil-seed, spice and condiment and drug. Preparation of charts containing the percentage of carbohydrate contain, protein contain, oil contain, from five different species each from internet data.

16. Anatomy: Preparation of permanent/semi-permanent slides for the study of anomalous secondary growth in plants included in the theory paper (Double Staining).

17. Embryology and Palynology: Examination of cleared and dissected whole mount permanent preparation of various structure mentioned in theory paper.

Preparation of stained slide for endosperm and embryo.

To study the germination percentage of pollen grains.

Preparation of pollen slides by acetolysis method.

Description and illustration of six selected pollen /spore types.

18. Identification and preparation of field notes of 50 plant species in the field.

19. An external field study tour to nationally important botanical garden/herbaria/sanctuaries/research laboratories, etc. and submission of the study report is compulsory.
