ANNAMALAI UNIVERSITY
Department of Botany
(UGC-SAP & DST-FIST Sponsored Department)

M.Phil - BOTANY &
M.Phil - PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

Paper I (Methodology)

UNIT – I


MICROMETRY: Stage and Ocular Micrometers, Haemocytometer, Camera Lucida.

MICROTOMY: Paraffin Microtomy – Rotary and Rocking microtomes, Sledge microtome, hand microtome, Ultra microtome, Freezing edge microtome.

CYTOLOGICAL TECHNIQUES: Pre treatment, Fixation, Staining, Mounting, Detailed schedule for making permanent slides of microtome sections, Procedures for making permanent slides of hand sections, Detailed schedule for making root tip squash, Detailed procedure for making smear of anthers.

UNIT – II


CENTRIFUGE: Ultracentrifugation – Ultracentrifuge, refrigerated centrifuge, Cell fractionation.

UNIT – III


UNIT – IV

ELECTROANALYTICAL METHODS


CONDUCTIMETRY:  Conductimetric measurements, Application of conductimetric measurements.


ECOLOGICAL INSTRUMENT:  Uses of Luxmeter, Anemometer, Rain gauge, Air samplers and Bomb Colorimeter.

UNIT – V


ESTIMATION OF ACTIVITIES OF:  Catalase, Peroxidase, Polyphenol oxidase and Amylases.

TISSUE CULTURE TECHNIQUES:  Explant preparation, Sterilization, Media preparation, Various types of media, Cell culture, Cell suspension culture, Isolation of protoplasts, Protoplast culture, Protoplast fusion, Haploid production, Anther culture, Pollen culture, Embryo Culture, Somatic embryogenesis, Callus induction, Micropropagation.

REFERENCE BOOKS

UNIT - I


UNIT – II


UNIT – III


UNIT – IV


UNIT – V

SCIENTIFIC WRITTING:

REFERENCE BOOKS