

SARDAR PATEL UNIVERSITY
Programme: MSC (Zoology)
Semester: IV
Syllabus with effect from: June 2011

Paper Code: PS04EZOO02	Total Credits: 4
Title Of Paper: Micro techniques	

Unit	Description in detail	Weightage (%)
1	Light microscopy: - Optical corrections, Properties and types of objectives. Oculars, Illumination. Types of light microscopes: Bright field, dark field, fluorescence, phase contrast, polarizing, differential interference contrast. Micrometry.	25 %
2	Electron microscopy: Basic components of electron microscopes. Thermionic and field emission electron guns. Types of electron microscopes: TEM, SEM, STEM, ESEM and HVEM	25 %
3	Fixation and storage: Classification of fixatives, formulas. (plant, animal and microbial samples) Factors affecting fixation. Procedures for fixation. Dehydration, infiltration and embedding. Media for embedding. Microtomes: Rotary, sliding cryostat, ultramicrotome and freezing ultra microtome. Preparation of biological samples for light and electron microscopy: Sectioning, maceration, squash and clearing technique. Freeze etching and freeze fracturing. Stains for light and electron microscopy. Staining procedures. Photomicrography.	25 %
4	Histochemistry: Histo chemical localization of metabolites:- Starch, proteins, lipids, total carbohydrates, lignin, polyphenols, nucleic acid, histones, cutin, suberin and waxes. Localization of enzymes: Peroxidase, acid phosphatase and succinic dehydrogenase. Ultra structural cytochemistry:- Localization of tannin, protein, cell wall polysaccharide, lignin and membrane. Enzymes: Peroxidase, acid phosphatase. Immunocytochemistry	25 %

Basic Text & Reference Books: -----

