

## PAPER –II PLANT ANATOMY

Max. Marks – 40+10\*

Time- 3 Hrs.

**Note:** Attempt five questions in all, selecting two questions from each unit.

**Question No. 1 is compulsory (short answer type).**

**Nine questions are to be set spread over the entire syllabus. All questions carry equal marks.**

### UNIT-I

Diversity in plant forms-annuals, biennials and perennials.

Tissues-meristematic and permanent (simple and complex).

The Shoot system-shoot apical meristem and its histological organizations (monocot and dicot stem);

Cambium-structure and functions.

Secondary growth in dicot stem; characteristics of growth rings; sap wood and heart wood, periderm;

Anomalous secondary growth (*Dracaena*, *Boerhaavia* and *Achyranthes*)

### UNIT-II

Leaf-Types of leaves (simple and compound); phyllotaxy.

Epidermis-uniseriate and multiseriate, epidermal appendages and their morphological types.

Anatomy of typical Monocot and Dicot leaf and cell inclusions in leaves; leaf abscission. Stomatal apparatus and their morphological types.

Root system- the root apical meristem; the histological organization (monocot and dicot root).

Secondary growth in dicot root.

Structural modifications in roots- storage (*Beta*), Respiratory (*Rhizophora*), Epiphytic (*Vanda*).