

CC – VI – ANATOMY AND EMBRYOLOGY

Unit I

Anatomy-Plant tissue- classification, Meristems, definition, differentiation, redifferentiation and dedifferentiation.

Classification of meristems- apical meristems and lateral meristems
intercalary meristem, various Concepts of apical meristem theories,
apical cell theory, Tunica – Carpus and Histogen theory

Permanent tissue – simple - Paerenchyma, collenchyma and sclerenchyma,
Laticifers, Xylem and phloem.

Epidermal tissue system, stomatal types.

Unit II

Epidermal Tissue system, stomatal types, complex permanent tissue: Xylem
– Components, Ontogeny and Phylogeny; Phloem – Components, Ontogeny
and Phylogeny. Laticifer types.

Unit - III

Primary structure of root, stem and leaf in dicots and monocots.
Secondary growth - normal in stem and root-annual rings – heart Wood,
sapwood,

Periderm formation

Anomalous secondary growth in dicot stems-Eg., Nyctanthes and
Boerhaavia and monocot stem-Dracaena.

Nodal anatomy uni-and trilacunar types.

Unit IV

Embryology- Development of anther;. Microsporogenesis;
Microgametogenesis; Ultrastructure of pollen wall-structure and
development of ovule, megasprogenesis, Megagametogenesis (Polygonum-type
of embryo-sac development), Fertilization.

Unit V

Endosperm-Nuclear, cellular and helobial and Ruminant types. Development
of embryo – dicot and Monocot. Basic concepts of apomixis, apospory,
Polyembryony and Parthenogenesis

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ANATOMY

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EMBRYOLOGY

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Publisher's Distributors, New Delhi
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Saras Publications, Nagercoil, Tamilnadu, India

Practical :

Anatomy: Preparation of Transverse sections of the following plant parts to observe and record the internal structure. Monocot and Dicot stem, and leaf (Primary structure), normal secondary thickening in dicot stem and root. . Anamalous secondary thickening in Dracaena, Nyctanthes and Boerhaavia stems. Nodal anatomy-uni-& trilacunar.

Embryology: T.S. of anther (young and mature) at various stages of development. Pollen types L.S.
Of ovule, Types of ovules-orthotropous and Anatropous. Embryo genesis, Embryo Dissection.