

SRI A.S.N.M. GOVERNMENT COLLEGE (A), PALAKOLLU
(Accredited with NAAC “B” Grade with 2.61 CGPA points)

DEPARTMENT OF BOTANY

II B. Sc - BOTANY SYLLABUS THEORY

PAPER –III; SEMESTER –III

(W.e.f. 2017-18 Admitted Batch)

(Paper-III: Plant Taxonomy and Embryology)

Total hours of teaching 60 hrs @ 4 hrs per week

UNIT – I: Introduction to PLANT TAXONOMY (12 hrs)

1. Fundamental components of taxonomy (identification, nomenclature, classification types and phylogeny)
2. Salient features and comparative account of Bentham & Hooker and Engler & Prantl classification
3. Role of chemotaxonomy, cytotaxonomy and taximetrics in relation to Taxonomy

UNIT –II: SYSTEMATIC TAXONOMY (12 hrs)

1. Nomenclature and Taxonomic resources: An introduction to International code of Botanical Nomenclature; Principles, Rules and Recommendations.
2. Systematic study and economic importance of plants belonging to the following families
Annonaceae, Caparidaceae, Rutaceae, Curcubitaceae, and Apiaceae

UNIT –III: SYSTEMATIC TAXONOMY (12 hrs)

1. Systematic study and economic importance of plants belonging to the following families
Asteraceae, Sapotaceae, Asclepiadaceae, Verbenaceae, Lamiaceae, Euphorbiaceae
Orchidaceae and Poaceae.

UNIT – IV: EMBRYOLOGY (12hrs)

1. Introduction: History and Importance of Embryology.
2. Anther structure, Microsporogenesis and development of male gametophyte.
3. Ovule structure and types; Megasporogenesis; Monosporic; Bisporic and Tetrasporic types of female gametophyte/embryosac development
3. Pollination -Types, Fertilization.

UNIT –V: EMBRYOLOGY AND PALYNOLOGY (12 hrs)

1. Endosperm Development and types.
2. Embryo - development and types:
3. Polyembryony and Apomixis - an outline.
4. **Palynology**: Introduction and pollen grains of Hibiscus, Acacia, Grass species.

Additional Inputs: Herbarium.

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DEPARTMENT OF BOTANY

II B.Sc - BOTANY PRACTICAL SYLLABUS

SEMESTER-III

(W.e.f. 2017-18 Admitted Batch)

Practical – III: Plant Taxonomy and Embryology

Total hours of laboratory Exercises 45 hrs @ 3 per week

Suggested Laboratory Exercises:

1. Systematic study of locally available plants belonging to the families prescribed in theory Syllabus.
2. Demonstration of herbarium techniques
3. Structure of pollen grains using whole mounts (*Catharanthus, Hibiscus, Acacia, Grass*).
4. Demonstration of Pollen viability test using *in-vitro* germination (*Catharanthus*).
5. Study of ovule types and developmental stages of embryo sac using permanent slides / Photographs.
6. Structure of endosperm (nuclear and cellular); Developmental stages of dicot and monocot Embryos using permanent slides / Photographs
7. Isolation and mounting of embryo (using *Symopsis / Senna / Crotalaria*)
8. Field visits
9. Preparation and submission of 25 herbarium specimens for evaluation during the practical Examination.