

B. Sc. II (Botany) Syllabus

SEMESTER-III

Max. Marks – 40+10*

Time- 3 Hrs.

PAPER –I BIOLOGY AND DIVERSITY OF SEED PLANTS-I

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

General characters and diversity of Gymnosperms (seed plants without fruits).

Pilger and Melchior's (1954) system of classification.

Geological Time Table; Evolution of Seed Habit.

Palaeobotany-Fossils and Fossilization (Processes involved, types of Fossils and Importance of Fossils; Reconstruction of the following fossil plants:

Lyginopteris

Williamsonia

Cycadeoidea (=Bennettites).

UNIT- II

Morphology and anatomy of root, stem leaf/leaflet and reproductive parts including mode of reproduction, life-cycle and economic importance of the following:

Cycas

Pinus

Ephedra

General characters of Angiosperms including primitive angiosperms (Amentiferae, Ranales, Magnoliales).

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*).