

**TELANGANA STATE BOARD OF INTERMEDIATE EDUCATION,  
HYDERABAD  
BOTANY - I  
SYLLABUS  
(w.e.f. 2012-13)**

**Unit-I DIVERSITY IN THE LIVING WORLD**

**30 Periods**

**CHAPTER-1**

**The living world**

What is living? - Diversity in the living world; Taxonomic categories and Taxonomic aids

**CHAPTER-2**

**Biological Classification**

Five kingdom classification - Monera, Protista, Monera, Protista, Fungi, Plantae and Animalia,  
Three domains of life (six kingdom classification), Viruses, Viroids, Prions& Lichens

**CHAPTER-3**

**Science of plants – Botany**

Origin, Development, and Branches of Botany, Scope of Botany and Branches of Botany

**CHAPTER-4**

**Plant Kingdom**

Salient features, classification and alteration of generations of the plants of the following groups  
– Algae, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms

**UNIT – II STRUCTURAL ORGANISATION IN PLANTS-MORPHOLOGY**

**20 Periods**

**CHAPTER-5**

**Morphology of flowering plants Vegetative:**

Parts of a typical Angiospermic plant; Vegetative morphology and modifications- Root, Stem and Leaf- types; Venation, Phyllotaxy.

**Reproductive:**

Inflorescence - Racemose, Cymose and special types (in brief). **Flower** : Parts of a flower and their detailed description; Aestivation, Placentation.

**Fruits** : Types- True, False and parthenocarpic fruits.

## **UNIT-III : REPRODUCTION IN PLANTS**

**25 Periods**

### **CHAPTER-6**

#### **Modes of Reproduction**

Asexual reproduction, binary fission, Sporulation, budding, fragmentation, vegetative propagation in plants, Sexual reproduction in brief, Overview of angiosperm life cycle.

### **CHAPTER-7**

#### **SEXUAL REPRODUCTION IN FLOWERING PLANTS**

Stamen, microsporangium, pollen grain. Pistil, megasporangium (ovule) and embryo sac; Development of male and female gametophytes. Pollination - Types, agents , Out breeding devices and Pollen - Pistil interaction. Double Fertilization; Post fertilisation events: Development of endosperm and embryo; development of seed, Structure of Dicotyledonous and Monocotyledonous seeds, Significance of fruit and seed. Special modes - Apomixis, parthenocarpy, polyembryony.

## **UNIT-IV: PLANT SYSTAMATICS**

**10 Periods**

### **CHAPTER-8**

#### **Taxonomy of angiosperms**

Introduction. Types of Systems of classification (In brief).Semi-Technical description of a typical flowering plant Description of Families: Fabaceae, Solanaceae and Liliaceae.

## **UNIT-V: CELL STRUCTURE AND FUNCTIONS**

**35 Periods**

### **CHAPTER-9**

#### **CELL: THE UNIT OF LIFE**

Cell- Cell theory and cell as the basic unit of life- overview of the cell. Prokaryotic cells, Ultra Structure of Plant cell (structure in detail and functions in brief), Cell membrane, Cell wall, Cell organelles: Endoplasmic reticulum, Mitochondria, Plastids, Ribosomes, Golgi bodies, Vacuoles, Lysosomes, Microbodies, Centrosome and Centriole, Cilia, Flagella, Cytoskeleton and Nucleus. Chromosomes: Number, structural organization; Nucleosome.

## **CHAPTER-10**

### **Biomolecules**

Structure and function of Proteins, Carbohydrates, Lipids and Nucleic acids.

## **CHAPTER-11**

### **Cell cycle and cell division**

Cell cycle, Mitosis, Meiosis - significance.

## **UNIT-VI : INTERNAL ORGANISATION OF PLANTS**

**25 Periods**

## **CHAPTER-12**

### **HISTOLOGY AND ANATOMY OF FLOWERING PLANTS**

Tissues - Types, structure and functions: Meristematic; Permanent tissues - Simple and Complex tissues. Tissue systems - Types, structure and function: Epidermal, Ground and Vascular tissue systems. Anatomy of Dicotyledonous and Monocotyledonous plants - Root, Stem and Leaf. Secondary growth in Dicot stem and Dicot root.

## **UNIT-VII : PLANT ECOLOGY**

**12 Periods**

## **CHAPTER-13**

### **ECOLOGICAL ADAPTATION,SUCCESSION AND ECOLOGICAL SERVICES**

Introduction. Plant communities and Ecological adaptations: Hydrophytes, Mesophytes and Xerophytes. Plant succession. Ecological services - Carbon fixation, Oxygen release and pollination (in brief).

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