

NEET Botany Syllabus 2025

Name of the Unit	Topics
------------------	--------

Class 11

The living world	What is living?; Biodiversity; Need for classification; Taxonomy & Systematics; Concept of species and taxonomic hierarchy; Binomial nomenclature
------------------	---

Biological classification	Five kingdom classifications: salient features and classification of Monera: Protista and Fungi into major groups: Lichens; Viruses and Viroids.
---------------------------	--

Plant kingdom	Salient features and classification of plants into major groups-Algae, Bryophytes, Pteridophytes, Gymnosperms (three to five salient and distinguishing features and at least two examples of each category) Salient features and classification of animals-nonchordate up to phyla level and chordate up to class level (three to five salient features and at least two examples).
---------------	--

Morphology of flowering plants	Morphology and modifications; Tissues; Anatomy and functions of different parts of flowering plants: Root, stem, leaf, inflorescence- cymose and racemose, flower, fruit and seed (To be dealt along with the relevant practical of the Practical Syllabus) Family (malvaceae, Cruciferae, leguminosae, compositae, gramineae).
Anatomy of flowering plants	Animal tissues; Morphology, anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of an insect (Frog). (Brief account only)
Cell the unit of life	Cell theory and cell as the basic unit of life; Structure of prokaryotic and eukaryotic cell; Plant cell and animal cell; Cell envelope, cell membrane, cell wall; Cell organelles- structure and function; Endomembrane system-endoplasmic reticulum, Golgi bodies, lysosomes, vacuoles; mitochondria, ribosomes, plastids, micro bodies; Cytoskeleton, cilia, flagella, centrioles (ultra structure and function); Nucleus- nuclear membrane, chromatin, nucleolus.

Cell cycle and cell division

Chemical constituents of living cells: Biomolecules-structure and function of proteins, carbohydrates, lipids, nucleic acids; Enzymes-types, properties, enzyme action, classification and nomenclature of enzymes B Cell division: Cell cycle, mitosis, meiosis and their significance.

Plant Physiology

Photosynthesis: Photosynthesis as a means of Autotrophic nutrition; Site of photosynthesis take place; pigments involved in Photosynthesis (Elementary idea); Photochemical and biosynthetic phases of photosynthesis; Cyclic and non cyclic and photophosphorylation; Chemiosmotic hypothesis; Photorespiration C3 and C4 pathways; Factors affecting photosynthesis. Respiration: Exchange gases; Cellular respiration-glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); Energy relations- Number of ATP molecules generated; Amphibolic pathways; Respiratory quotient. Plant growth and development: Seed germination; Phases of Plant growth and plant growth rate; Conditions of growth; Differentiation, dedifferentiation and redifferentiation; Sequence of developmental process in a plant cell; Growth regulators- auxin, gibberellin, cytokinin, ethylene, ABA.

Sexual reproduction in flowering plants	Flower structure; Development of male and female gametophytes; Pollination-types, agencies and examples; Outbreeding devices; Pollen-Pistil interaction; Double fertilisation; Post fertilisation events- Development of endosperm and embryo, Development of seed and formation of fruit; Special modes apomixis, parthenocarpy, polyembryony; Significance of seed and fruit formation.
Molecular basis of Inheritance	Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central dogma; Transcription, genetic code, translation; Gene expression and regulation- Lac Operon; Genome and human genome project; DNA fingerprinting, protein biosynthesis.
Principles and process of Biotechnology	Genetic engineering (Recombinant DNA technology)
Ecosystem	Patterns, components; productivity and decomposition: Energy flow: Pyramids of number, biomass. energy Biodiversity and its conservation: concept of Biodiversity; patterns of Biodiversity: Importance of Biodiversity; Loss of Biodiversity Biodiversity conservation; Hotspots, endangered organisms. extinction; Red Data Book. biosphere reserves, National parks and sanctuaries, Sacred Groves.