

Biology Syllabus for NEET 2025

<u>Chapter/Unit Name</u>	<u>Topics</u>
<u>Class 11th Syllabus</u>	
Diversity of Living Organisms Change	<p>What is a living organism? Biodiversity; Need for classification;; Taxonomy & Systematics; Concept of species and taxonomic hierarchy; Binomial nomenclature;</p> <p>Five kingdom classifications: salient features and classification of Monera; Protista and Fungi into major groups: Lichens Viruses and Viroids.</p> <p>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);</p> <p>Salient features and classification of animals non-chordate up to phyla level and chordate up to classes level (three to five salient features and at least two examples)'</p>
Structural Organization in Plants & Animals Change	<p>Morphology and modifications; Tissues; Anatomy and functions of different parts of flowering plants: Root, stem, leaf, inflorescence-cymose and racemose, flower' fruit and seed 1 To be with alt along with the relevant practical of the Practical Syllabus) Family (malvaceae, Cruciferae, leguminosae, compositae, gramineae)'</p> <p>Animal tissues; Morphology, anatomy, and functions of different systems (digestive, circulatory, respiratory, nervous, and reproductive) of an insect (Frog)' (Brief account only)</p>
Cell Structure and Function No Change	<p>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 organelle structure and function; Endomembrane system-endoplasmic reticulum' Golgi bodies' lysosomes, vacuoles; mitochondria, ribosomes, plastids, microbodies; Cytoskeleton' cilia flag centrioles (ultrastructure and function); Nucleus-nuclear membrane' chromatin, Chemical.</p> <p>chemical constituents of living cells: Biomolecules-structure and function of proteins, carboLipidses. lipids, nucleic acids; Enzymes-types,</p>

	<p>properties' enzyme action' classification and nomenclature of enzymes</p> <p>B Cell division: Cell cycle, mitosis, meiosis, and their significance</p>
Plant Physiology	<p>Photosynthesis: Photosynthesis as a means of Autotrophic nutrition; Site of photosynthesis takes 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.</p> <p>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.</p> <p>Plant growth and development: Seed germination; phases of plant growth and plant growth rate; Conditions of growth; Differentiation, differentiation, and redifferentiation; Sequence of developmental process in a plant cell; Growth regulators auxin, gibberellin, cytokinin, ethylene, ABA;</p>
Human Physiology	<p>Breathing and Respiration: Respiratory organs in animals (recall only); Respiratory system in humans; Mechanism of breathing and its regulation in humans, transport of gases and regulation of respiration Respiratory volumes; Disorders related to respiration-Asthma Emphysema, Occupational respiratory disorders.</p> <p>' Body fluids and circulation: composition of blood, blood groups, coagulation of blood; composition of lymph and its function; Human circulatory system-structure of human heart and blood vessels; cardiac cycle, cardiac output. ECG. Double circulation; Regulation of cardiac activity; Disorders of circulatory system-Hypertension, coronary artery disease, Angina pectoris, Heart failure.</p> <p>Excretory products and their elimination: Modes of excretion-Ammonotelism, ureotelism, uricotelism; Human excretory system structure and function; Urine formation, osmoregulation; Regulation of kidney function-Renin-angiotensin, Atrial Natriuretic Factor' ADH and Diabetes insipidus; Role of other organs in excretion; Disorders; Uraemia, Renal failure, Renal calculi, Nephritis; Dialysis and artificial kidney.</p> <p>Locomotion and Movement: Types of movement- ciliary, flagellar, muscular; Skeletal muscle- contractile proteins and muscle contraction; Skeletal system and its functions (To be dealt with in the relevant practical of practical syllabus); Joints; Disorders of muscular and skeletal system-Myasthenia gravis, Tetany, Muscular dystrophy, Arthritis, Osteoporosis, Gout.</p> <p>Neural control and coordination: Neuron and nerves; Nervous system in human central nervous system, peripheral nervous system, and visceral nervous system; Generation and conduction of nerve impulses;</p>

	<p>chemical coordination and regulation: Endocrine glands and hormones; Human endocrine system, pituitary, pineal, Thyroid, parathyroid, Adrenal, Pancreas, Gonads; Mechanism of hormone action (Elementary idea); Role of hormones as messengers and regulators, Hypo-and hyperactivity and related disorders (common disorders e.g. Dwarfism, Acromegaly, Cretinism, goitre, exophthalmic goitre, diabetes, Addison's disease). Brief about the diseases mentioned above</p>
<u>Class 12th Syllabus</u>	
Reproduction	<p>Sexual reproduction in flowering plants: Flower structure; Development of male and female gametophytes; Pollination-types, agencies, and examples; Outbreeding devices; Pollen-Pistil interaction; Double fertilization; Post fertilization events- Development of endosperm and embryo, Development of seed and formation of fruit; Special modes apomixis, parthenocarpy, polyembryony; Significance of seed and fruit formation.</p> <p>Human Reproduction: Male and female reproductive systems; Microscopic anatomy of testis and ovary; Gametogenesis-spermatogenesis & oogenesis; Menstrual cycle; Fertilisation, embryo development up to blastocyst formation, implantation: Pregnancy and placenta formation (Elementary idea); Parturition (Elementary idea); Lactation (Elementary idea).</p> <p>Reproductive health: Need for reproductive health and prevention of sexually transmitted diseases (STD); Birth control and Methods, Contraception and Medical Termination of Pregnancy (MTP); Amniocentesis; infertility and assisted reproductive technologies – IVF, ZIFT, GIFT (only general ideas)</p>
Genetics & Evolution	<p>Heredity and variation: Mendelian inheritance; Deviations from Mendelism Incomplete dominance, Codominance, Multiple alleles, and Inheritance of blood groups, Pleiotropy; Elementary idea of polygenic inheritance; Chromosome theory of inheritance; Chromosomes and genes; Sex determination in humans' birds, honey bee; Linkage and crossing over; Sex-linked inheritance-Haemophilia colour blindness; Mendelian disorders in humans-Thalassemia; chromosomal disorders in humans; Down's syndrome, Tumer's and Klinefelter's syndromes.</p> <p>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 finger printing, protein biosynthesis.</p> <p>Evolution: Origin of life; Biological evolution and evidence for biological evolution from Paleontology, comparative anatomy, embryology, and molecular evidence); Darwin, 's contribution, modern synthetic theory of</p>

	Evolution; Mechanism of evolution Variation (Mutation and Recombination) and Natural Selection with examples, types of natural selection; gene flow and genetic drift; Hardy-weinberg's principle; Adaptive Radiation; Human evolution.
Biology and Human Welfare	Health and Disease; Pathogens; parasites causing human diseases (Malaria, Filariasis, Ascariasis. Typhoid, Pneumonia, common cold, amoebiasis, ring worm, dengue, chikungunya); Basic concepts of immunology-vaccines; Cancer, HIV and AIDS; Adolescence, drug, and alcohol abuse.Tobacco abuse Microbes in human welfare: In household food processing, industrial production, sewage treatment, energy generation, and as biocontrol agents and biofertilizers.
Biotechnology and its Applications	Principles and process of Biotechnology: Genetic engineering (recombinant DNA technology). Application of Biotechnology in Health and Agriculture: Human insulin and vaccine production, gene therapy Genetically modified:organisms-Br crops: Transgenic Animals Biosafety issues-Biopiracy;r and patents.
Ecology and Environment	Organisms and environment intentions-mutualism, competition Predationion, parasitism Population attributes-growtBirthrth rate and death rate, age distribution. 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 extinction, Red DBiosphere biosphere reserves, National parks, and sanctuaries, Sacred Groves

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