

NEET Syllabus 2021 for Biology

Class 11

- Diversity in Living World
 - The Living World
 - Biological Classifications
 - Plant Kingdom
 - Animal Kingdom
- Structural Organisation in Animals and Plants
- Cell Structure and Function
- Plant Physiology
- Human physiology

Class 12

- Reproduction
- Genetics and Evolution
- Biology and Human Welfare
- Biotechnology and Its Applications
- Ecology and environment

NEET chapter-wise weightage for Biology

Name of the chapter	Number of questions asked (Approx.)	Weightage in percentile
Anatomy of Flowering Plants	0-1	2
Animal Kingdom	2	7
Biodiversity and Conservation	1	3
Biological Classification	0-1	2
Biomolecules	1	4
Biotechnology and its Applications	1	3
Biotechnology: Principles and Processes	1	3
Body Fluids and Circulation	0-1	1
Breathing and Exchange of Gases	0-1	2
Cell Cycle and Cell Division	0-1	2

Cell: The Unit of Life, Biomolecules	0-1	2
Chemical Coordination and Integration	1	4
Digestion and Absorption	1	3
Ecosystem	0-1	2
Environmental Issues	0-1	2
Evolution	0-1	2
Excretory Products and their Elimination	0-1	2
Human Health and Disease	1	3
Human Reproduction	1	3
Locomotion and Movement	0-1	2
Microbes in Human Welfare	0-1	2
Mineral Nutrition	0-1	1
Molecular Basis of Inheritance	2	6
Morphology of Flowering Plants	1	5
Neural Control and Coordination	0-1	2
Organisms and Populations	0-1	2
Photosynthesis in Higher Plants	0-1	2
Plant Growth and Development	0-1	1
Plant Kingdom	1	4
Principles and Inheritance and Variation	1	5

Reproduction in Organisms	0-1	1
Reproductive Health	0-1	2
Respiration in Plants	0-1	1
Sexual Reproduction in Flowering Plants	1	5
Strategies for Enhancement in Food Production	0-1	2
Structural Organisation in Animals	0-1	2
The Living World	0-1	2
Transport in Plants	0-1	1
Total	90	100

Best books for NEET biology

1. 40 Days Biology for NEET by S Chakravarty
2. Exploring Biology (Vol 1 & 2) by Sanjay Sharma & Sudhakar Banerjee (Arihant Publications)
3. GR Bathla publications for Biology
4. Medical Entrances Biology (Vol 1, 2 & 3) by Mamta R Solanki & Lalita Ghotik (Target Publications)
5. Moderns ABC of Biology for XI & XII (B B Arora and A K Sabharwal - Modern Publishers)
6. Objective Biology (Vol 1, 2 & 3), Dinesh Publications
7. Objective Botany by Ansari
8. Pradeep's Publication Biology
9. True man's Objective Biology for NEET by M P Tyagi

Neet Biology Syllabus 2021(Botany)

Unit - Diversity in Living World

1. The Living World

Biology, Characteristics Of Living Organism, Growth, Reproduction, Cellular Organization, Metabolism, Consciousness, Diversity In Living World, Nomenclature, Binomial Nomenclature, Rules Of Nomenclature, Significance Of Scientific Nomenclature, Classification, Taxonomy, Types Of Taxonomy, Chemotaxonomy, Cytotaxonomy, Karyotaxonomy, Significance Of Taxonomy, Systematics, Taxonomic Categories, Species, Genus, Family, Order, Class, Phylum / Division, Kingdom, Species Concept, Biological Concept, Taxonomical Aids, Herbarium, Steps Of Herbarium Technique, Key For Plant Identification, Flora, Manuals, Monographs And Catalogues.

2. Biological Classification

Kingdom System, Three Kingdom Classification, Four Kingdom Classification, Five Kingdom Classification, Six Kingdom/Three Domain, Kingdom – Monera, Main Characteristic Of Monerans, Nutrition In Bacteria, Autotrophs, Photosynthetic Autotrophs (Photoautotrophs), Chemosynthetic Autotrophs (Chemoautotrophs), Heterotrophs, Saprotrophic, Parasitic, Symbiotic, Respiration, Aerobic Bacteria, Obligate Aerobic, Facultative Anaerobic, Anaerobic Bacteria, Obligate Anaerobic, Facultative Aerobic, Reproduction Asexual Reproduction, Genetic Recombination, Asexual Reproduction Binary Fission, Endospore, Structure Of Endospore, Genetic Recombination/Sexual Recombination, Transformation (Griffith - 1928), Griffith's Experiment, Conjugation: Lederberg And Tatum (1946), Conjugation Between F+ And F-, Conjugation Between Hfr (Male) And F- (Female), Transduction, Harmful Activities, Denitrification - Denitrifying Bacteria, Food Poisoning, Water Pollution, Biological Weapons, Beneficial Activities, Antibiotics, Industries, Production Of Vitamins, Archaeobacteria, Cell Wall, Cell Membrane, Methanogens, Halophiles, Thermo Acidophiles, Cyanobacteria [Blue Green Algae], Structural Organization, Reproduction, Economic Importance Of Bga, Spirulina (Single Cell Protein Scp), Nitrogen Fixation, Harmful Activities, Mycoplasma, Mycoplasma Structure, Reproduction In Mycoplasma, Symptoms Of Plant Diseases, Culture Of Mycoplasma, Kingdom – Protista, Nutrition, Absorptive, Reproduction, Sexual Reproduction, Anisogamy, Oogamy, Biological Classification Dinoflagellates, Noctiluca: It Is An Exception In Dinoflagellates Because, Reproduction, Special Features Of Dinoflagellates, Diatoms, Structure, Reproduction, Use Of Diatoms, Euglenoids, Structure, Stored Food- Paramylum And Fat, Reproduction, Slime Moulds, Structure, Reproduction, Kingdom- Mycota, Structure, Reproduction, Asexual Reproduction, Types Of Spores, Sexual Reproduction, Methods Of Sexual Reproduction, Gametangial Contact, Gametangial Copulation, Somatogamy, Spermatization, Different Forms Of Mycelium, True Fungi, Phycomycetes, Oomycetes, Zygomycetes (Conjugation Fungi), Ascomycetes, Types Of Fruiting Bodies, Aspergillus, Yeast, Special Type Of production, Economic Importance, Basidiomycetes: „„Club Fungi“, Sexual Reproduction, Spermatization, Puccinia, Stage Of Life Cycle On Wheat (Primary Host), Telia And Teliospores, Basidia And Basidiospores, Stage Of Life Cycle On Berberry (Ulternate Host), Bracket Or Shelf Fungi, Puff Balls, Mushrooms, Agaricus, Deuteromycetes, Mycelium, Sexual Reproduction, History Of Virus, Characteristic Features Of Viruses, Non-Living Characters Of Viruses, Living Characters Of Viruses, Morphology And Structure Of Viruses, Shape, Structure Of Bacteriophages, Function Of Tail Fibers, Life Cycle Of Bacteriophage, Viroids, Prion Or Slow Viruses, Plant Diseases Caused By Viruses, Character Of Viral Diseases In Plant, Important Point,

3. Plant Kingdom

Plant Kingdom, The Systems Of Classification, Natural System Of Classification, Drawbacks, Phylogenetic/Cladistic System Of Classification, Ostwald Tippo, Algae, Chlorophyceae, Phaeophyceae, Rhodophyceae, Economic Importance, Bryophyta, General Characters, Teridophytes

Unit - Structural Organisation in Plants

Morphology of Flowering Plants

General Introduction Root, Stem, Leaf, Introduction, Classification Of Plants, Root, Types Of Roots, Root System, Region Of Roots, Function Of Root, Stem, Forms Of System, Types & Modification Of System, Leaf (Phyllopodium), Venation Of Lamina, Type Of Leaf, Modification Of Leaves, Inflorescence, Cymos, Special Type Of Inflorescence, Flower, Some Words Related To Flower, Insertion Of Floral Leaves, Calyx, Duration Of Sepals, Corolla, Gamopetalous, Zygomorphic Polypetalous Corolla, Zygomorphic Gamopetalous Corolla, Aestivation, Perianth, Androecium, Gynoecium (Pistil), Cohesion Of Carpel, Placentation, Fruit, Classification Of Fruit, Aggregate Fruit, Composite Fruit, Dispersal Of Fruits And Seed, Wind (Anemochory), Water (Hydrochory), Animal (Zoochory), Plant, Morphology, Function Of Root, General Characters, Regions Of Roots, Modification Of Root, Fusiform Roots, Conical Roots, Napiform, Tuberos Root, Nodulated Root, Respiratory Roots, Modification Of Adventitious Roots, Tuberculated Root, Fasciculated, Nodulose, Annulated, Prop Root Or Pillar Roots, Butteress Root, Foliar Roots Or Epiphyllous Roots, Climbing Roots, Stem, Forms Of Stem, Types & Modification Of Stem, Tendril Climbers, Twiners, Sub-Aerial Modification, Sucker, Offset, Underground Modification, Tuber, Rhizome, Corn, Bulb, Special Stem Modification, Thorn, Cladode, Stem Tendrill, Bulbils, Angiospermic Seed Structure Of Seed, Seed Coat, Cotyledons (Seed Leaves), Structure Of Seed, Germination Of Seed, Epigel Germination, Hypogeal Germination, Significances Of Seed, Vaibility Of Seeds, Factors Affecting Seed Germination,

Anatomy of Flowering Plants

Primary Structure Of Plants Plant Anatomy, Plant Tissue, Meristematic Tissue, Characteristics Of Meristematic Tissues, Classification Of Meristematic Tissue [A] Meristematic Tissue Based On Origin And Development, [B] Meristematic Tissues Based On Location (Position) In Plant Body, [C] Classification Based On Plane Of Division, [D] Classification Based On Rate Of Division, Composition Of Apical Meristem In Different Plants, Apical Cell Theory, Histogen Theory, Quiescent Centre, Tunica Corpus Theory, Mantle Core Theory, Newman's Theory, Korper-Kappe Theory, Permanent Tissues, Simple Tissues, Main Characteristics, Occurance, Type Of Collenchyma, Functions, Main Features, Type Of Sclerenchyma, Sclerenchymatous Fibres, Special Points, Complex Permanent Tissues, Special Tissues Or Secretory Tissue, Tissue System, Ground Tissue Culture, Vascular Bundles / Vascular Tissue System, Stele, Type Of Stele, Siphonstele Solenstel, Dictyostele Or Polystele, Eustele, Atactoste, Internal Structure Of Stems, Roots & Leaves, Internal Structure Of Dicot Stem, Internal Structure Of Monocotyledon Stem, Internal Structure Of Typical Dicotyledon – Root, Internal Structure Monocotyledon – Root, Internal Structure Of Orchid Root, Internal Structure Of Leaf, Difference Between Dicot Leaf (Dorsiventral) & Monocot (Isobilateral), Internal Structure Of Dorsiventral Leaves, Internal Structure Of Isobilateral Leaves, Vascular Bundles Of Leaves, Special Points, Anomalous Primary Structure, [1] Anomalous Structure In Dicotyledon Stem, Anoumalous Strucute In Monocot Stem, Special Point, (Ii) Anatomy – Secondary Growth, Secondary Growth In Dicot Stem, Special Point, Iii. Formation Of Annual Rings (Springs Wood And Autumn Wood), B] Secondary Growth In Extra Stelar Region (Clork Cambium), Kinds Of Bark, Function, Secondary Growth In Dicot Root, Wound Healing, Abcisssion, Anomalous Secondary Growth In Dicot Stem, Anomalous Secondary Growth In Monocot Stem, Types Of Wood, Special Point, Important Comparison Tables,

Unit - Cell Biology

Cell: The unit life

Cell theory, Types of cells, Structure organization of a cell, Cell wall, Structure of the cell wall, Secondary wall (absent in meristem cell), Plasmodesmata, Lignification's, Growth of cell wall, Functions, points to be remembered always, Cell coat (glycalyx), Plasma membrane, Plasma Membrane, Unit membrane model [1959) A.D.], Fluidity of the cell membrane, Intrinsic proteins (70%), Chemical composition, Flip –flop concept in fluid mosaic model, Lomasomes/border Body, Diffusion, Endosmosis, Endocytosis (Bulk transport), Points to be Remembered always, Cytoplasm, Cell organelles. Mitochondria, detailed structure of crista, Function of mitochondria, plastids, Leucoplast, Amyloplast, Chromoplast, Chromoplast, contains following types of pigments, chloroplast, Chloroplast. Endoplasmic reticulum, Types of E. R, Microsomes, Golgi complex, Chemical composition, lysosome, Autophagic lysosomes (Auto phagosomes or cytolysomes). Ribosome, chemical composition of ribosomes, Centrosome, cilia and Flagella, Rootlet Rhizoplast, vacuole, Functions of vacuole, Mircobodies, peroxisomes or Uricosomes, Spherosome, Glyoxysome, Microtubules, microfilaments, Cell inclusions, Starch Grains, Calcium oxalate –two types of crystals, Reserve material, Nucleus, nucleoplasm or karyolymph:- (Tern by strasburger 1882), Euchromatin, Chromosomes, Types of coiling in Chromonema, Centromere/kinetochore:- (Primary constriction), type of chromosomes on basis of position of centromere, Special type of chromosomes (giant chromosomes), Supernumerary/ B-chromosomes/Accessory chromosome, G-banding, R-Banding, New techniques for ideogram preparation, Flow cytometry, ideogram,

Cell Cycle and division

Cell Cycle,

Unit - Plant Physiology

Transport in plant

Plant water relation, diffusion pressure, signification of diffusion, Osmosis, Types of membrane, Selective permeable membrane or differentially permeable membrane, hypertonic solution, osmotic pressure (O.P.), the formula of Vont hoff for measuring O. P., Turgor pressure (T. P.). Diffusion pressure deficit (DPD) or suction pressure, water potential or YW, Plasmolysis, imbibitions, Long Distance transport of water, Mechanism of water absorption, water movement up a plant, transpiration pull, Transpiration, types of transpiration, Structure of stomata, opening of stomata in light, Plant factors, Demonstration of transpiration, Transpiration and photosynthesis –A compromise, uptake and transport of mineral nutrients, Phloem transport: Flow from source to sink, the pressure flow or mass flow hypothesis

Mineral Nutrition

Nutrition, Essential mineral Elements, Classification of Essential Elements, Classification of Essential Elements, micronutrients of trace elements, Macronutrients, Structural elements, Enzyme Activators or inhibitors, Maintaing osmotic potential, Deficiency symptoms of essential elements, Necrosis, Toxicity of micronutrients, Excess of MN causes, Mechanism of Absorption of Elements, Soil: As reservoir of essential elements, N₂metabolism, nitrogen fixation, Symbiotic N₂ Fixation (Diazotrophy) Mechanism of biological N₂ Fixation Nitrogenase

Photosynthesis in higher plants

Where does photosynthesis take place? Cyclic photophosphorylation, Chemiosmotic hypothesis. The C_4 Pathway (Hatch and Slack Pathway), importance of C_4 plants.

Respiration in plants

Cell Respiration, Glycolysis, Krebs's cycle, Electron Transport System (ETS), Oxidation of Fatty Acids (β -Oxidation)

Plants Growth and Development

Arithmetic growth, Absolute growth rate, Auxin, Gibberellin (GA), Abscission. Phytochrome, Vernalization, Plant movements.

Unit - Reproduction in Plants

Reproduction in organism

Life Span, Basic features of reproduction, Duplication of cellular apparatus, Types of reproduction, Asexual reproduction, Binary fission, Budding, Sporulation Zoospores, Conidia, Fragmentation, Regeneration, Vegetative reproduction/propagation, There are two types of vegetative reproduction. Natural methods of vegetative reproduction, Stems, Underground stem, Rhizome, Bulb Subaerial stem, Sucker, Runner, Aerial shoots, Bulbils, Leaves, Roots, Artificial methods of vegetative reproduction, Cuttings, Stem Cuttings, Leaf Cuttings, Root Cuttings, Layering Tip layering, Trench layering, Gootee (Air layering), Grafting, Tongue (Slice or whip) Grafting Wedge Grafting, Crown Grafting, Approach Grafting, Bud Grafting, Micro propagation, Sexual reproduction, Phases in life cycle, Reproductive Phase, Categories of Gametes, Heterogametes Gamete transfer, Fertilization, External fertilization, internal fertilization.

Reproduction in organism

Life Span, Basic features of reproduction, Duplication of cellular apparatus, Types of reproduction, Asexual reproduction, Binary fission, Budding, Sporulation Zoospores, Conidia, Fragmentation, Regeneration, Vegetative reproduction/propagation, There are two types of vegetative reproduction. Natural methods of vegetative reproduction, Stems, Underground stem, Rhizome, Bulb Subaerial stem, Sucker, Runner, Aerial shoots, Bulbils, Leaves, Roots, Artificial methods of vegetative reproduction, Cuttings, Stem Cuttings, Leaf Cuttings, Root Cuttings, Layering Tip layering, Trench layering, Gootee (Air layering), Grafting, Tongue (Slice or whip) Grafting Wedge Grafting, Crown Grafting, Approach Grafting, Bud Grafting, Micro propagation, Sexual reproduction, Phases in life cycle, Reproductive Phase, Categories of Gametes, Heterogametes Gamete transfer, Fertilization, External fertilization, internal fertilization.

Sexual Reproduction in flowering plants

Plants, Reproduction –in flowering plants, Sexual reproduction, Male reproductive organ –Androecium, Tapetum of two types. Microsporogenesis, Structure of microspore or Pollen grain, Function of pollen kitt, Micro –Gametogenesis or development of male gametophyte, Pre Pollination Development, Post Pollination Development, Female reproductive organ –gynoecium, Structure of ovule or mega sporangium, Caruncle or Strophiole, Types of ovules, Hemitropous or hemi –anotropous ovule, Campylotropous ovules, Anotropous ovule, Amphitropous ovule, Circinotropous ovule. Megasporogenesis, Mega gametogenesis, Type of Embryo sacs, Pollination, Self-pollination or autogamy, Cross pollination or allogamy, Self-Sterility or self-incompatibility or intraspecific incompatibility, Self-incompatibility or intraspecific incompatibility Fertilization, Entry of pollen tube into ovule, Entry of pollen tube into Embryo sac, Fusion of gametes, Development of endosperm Development of embryo in monocotyledon Asexual reproduction, Androgenic haploid plants,

Angiospermic seed structure of seed, Non endospermic or Ex –Albuminous seed, Endospermic or Albuminous seed, Germination of seed, Factors Affecting seed germination

Unit - Genetics

Heredity and Variation

Somatogenic, Blastogenic variations, Discontinuous Variations, Early speculations (Premendelian), Pangenesis theory, Theory of germplasm Mendelism, Reasons for Mendel's success Inheritance of one gene, Concept of 'Factors'. Homozygous and heterozygous, Genotype and phenotype, Domination and recessive Concept of segregation, Punnett Square, Test cross, Law of Dominance, Law of segregation. Exceptions to Mendelian principles, Explanation of the concept of dominance, Multiple Allelism Inheritance of two genes. Complementary genes, Duplicate Genes. Polygenic inheritance or Quantitative inheritance, Chromosomal theory of inheritance. Linkage and recombination, Dihybrid crosses conducted by Morgan, Chromosomal mapping Sex determination. Sex determination in humans, Female heterogamety, Sex –Determination in honey bee Gynandromorphs, Sex linked inheritance Mutation, Gene mutation, Frame –shift mutation, Insertion or addition, Substitution, Transition, Trans version, Chromosomal Aberrations, Deletion, Duplication, Translocation, Inversion, Genomatic mutation, Aneuploidy. Mutagens, Genetic disorders, Mendelian disorders

Molecular Basis of inheritance

The DNA, DNA Structure The structure for genetic material, Properties of genetic material (DNA versus RNA), RNA world Replication, Messelson and Stahl's experiment Transcription, Template strand and coding strand, Types of RNA and Process of transcription Genetic Code, Salient features of Genetic code, Mutations and genetic code, tRNA –the adapter molecule, there are three loops in tRNA, Translation. Regulation of Gene expression, Operon Concept, Lac operon Genes, Human genome Project (HGP), Methodologies, A representative diagram of human genome project, Salient features of human genome.

Unit - Biology and Human Welfare

Strategies for Enhancement in Food Production

Main Steps In Plant Breeding, Collection Of Germplasm, Evaluation And Selection Of Parents, Common Methods Of Crop Improvement, Dwarf Wheat, Hybrid Vigour (Heterosis), Plant Breeding For Disease Resistance, Plant Breeding For Developing Resistance To Insect/Pests, Plant Breeding For Improved Food Quality/Biofortification, Examples, Single Cell Proteins (Scp), Tissue Culture, Callus And Suspension Culture, Shoot Tip Culture Or Production Of Disease Free Plants, Somatic Embryo Regeneration, Embryo Cultures, Haploid Culture/Androgenic Haploid Culture/Pollen Grain Culture, Application Of Tissue Culture.

Microbes in Human Welfare

Microbes In Household Products, Microbes In Industrial Products, Enzymes, Cyclosporin, Statins, Microbes In Sewage Treatment, Activated Sludge Method Of Sewage Treatment, Anaerobic Sludge Digester, River Action Plans, Microbes In Production Of Biogas, Microbes As Biocontrol Agents, Insect Hormones (Pheromones), Biofertilizer

Unit - Ecology and Environment

Organisms and its Population

Organisms And Its Environment, Major Biomes Of India, Major Abiotic Factors Temperature, Water, Light, Light Zonation Of Lakes, Zonation In A Lake, Soil, Eluviations And Illuviation, Soil Texture, Response To Abiotic Factors, Adaptations, Populations, Population Attributes/Group Attributes, Population Density, Age Ratio Pyramids, Population Growth, Emigration, Change The Color Combination Of This Figure Growth Models, Exponential (Geometric) Growths, Logistic Growth, Population Interactions.

Ecosystem

Important Facts About Ecosystemk, Aquatic Ecosystem, Incomplete Ecosystem, Artificial Ecosystem, Structure Of Ecosystem, Abiotic, Biotic Components, Consumers, Decomposers, Scavengers, Stratification, Boundaries Of Ecosystems, Productivity Of Ecosystem, Standing State Or Standing Quality, Standing Crop Or Standing Biomass, Gross Primary Productivity (Gpp), Net Primary Productivity (Npp), Secondary Productivity, Community Productivity, Decomposition, Decomposition Processes:Fragmentation Of Detritus, Leaching, Catabolism, Humification, Mineralization, Energy Flow, Food Chains, Types Of Food Chain Grazing Food Chain (Gfc), Detritus Food Chain (Dfc), Parasitic Food Chain / Auxillary Food Chain, Parasitic Food Chain, Food Web, Ecological Pyramids, Pyramid Of Number, Pyramid Of Biomass, Pyramid Of Energ, Limitations Of Ecological Pyramid, Nutrient Cycling, The Carbon Cycle, Phosphorus Cycle, Ecological Succession (By Hult), Process Of Succession, Major Trends During Succession, Contents Of Ecological Succession Lithosere (Stages): (Succession On Desert Or Rock), Hydrosere: (Succession On Pond), Ecosystem Services.

Biodiversity and Conservation

Important Facts About Ecosystemk, Aquatic Ecosystem, Incomplete Ecosystem, Artificial Ecosystem, Structure Of Ecosystem, Abiotic, Biotic Components, Consumers, Decomposers, Scavengers, Stratification, Boundaries Of Ecosystems, Productivity Of Ecosystem, Standing State Or Standing Quality, Standing Crop Or Standing Biomass, Gross Primary Productivity (Gpp), Net Primary Productivity (Npp), Secondary Productivity, Community Productivity, Decomposition, Decomposition Processes:Fragmentation Of Detritus, Leaching, Catabolism, Humification, Mineralization, Energy Flow, Food Chains, Types Of Food Chain Grazing Food Chain (Gfc), Detritus Food Chain (Dfc), Parasitic Food Chain / Auxillary Food Chain, Parasitic Food Chain, Food Web, Ecological Pyramids, Pyramid Of Number, Pyramid Of Biomass, Pyramid Of Energ, Limitations Of Ecological Pyramid, Nutrient Cycling, The Carbon Cycle, Phosphorus Cycle, Ecological Succession (By Hult), Process Of Succession, Major Trends During Succession, Contents Of Ecological Succession Lithosere (Stages): (Succession On Desert Or Rock), Hydrosere: (Succession On Pond), Ecosystem Services.

Environmental Issues

Pollution and Its Types, Air Pollution And Its Control, Primary Air Pollutants, Secondary Air Pollutants, Photochemical Smog (Los Angles Smog), Acid Rain: Corrosion Of Taj Mahal, Air Pollution Control, Controlling Vehicular Air Pollution, Noise Pollution, Effects Of Noise Pollution, Control Of Noise Pollution, Water Pollution And Its Control, Sources Of Water Pollution, Effects, Bio-Magnification, Eutrophication, Water Born Disease And Other, A Case Study Of Integrated Waste Water Treatment, Solid Wastes, A Case Study Of Solid Waste, Soil Pollution, Agrochemicals And Their Effects, Case Study Of Organic Farming, Radioactive Wastes, Green House Gases And Global Warming, Global Environment Change, Effects Of Green House Gases, Ozone Depletions, Deforestation, Water-Logging And Soil Salinity, Case Study Of People's Participation In Conservation Of Forests, Environmental Laws For Controlling Pollution, International Initiative.

Neet Biology Syllabus 2021(Zoology)

Unit - Animal Kingdom

Kingdom Animalia

Taxonomy, Organization Of Animal Body Levels Of Organization, Body Plan, Symmetry, Germ Layers, Cephalization, Segmentation, Respiratory System (Modes Of Respiration), Circulatory System, Excretory System, Nervous System, Skeleton, Body Temperature, Notochord, Reproduction, Birth, Development Direct Indirect And Metamorphosis Classification Of Animal Kingdom, Phylum, Phylum Porifera, Characters, Classification Of Porifera, Classification, Phylum Coelenterate, Classification, Trick Coelenterata (Cnidaria), Phylum Ctenophora, Phylum Platyhelminthes, Classification Of Platyhelminthes (Three), Fasciola Hepatica, Schistosoma (Blood Flukes), Phylum Nematelminthes Or Aschelminthes, Phylum Annelida, Classification Of Annelida, Phylum- Mollusca, Classification Of Mollusca, Phylum Arthropoda, Five Types Of Metamorphosis In Insects, Classification Phylum Echinodermata, Classification, Class Asteroidea (Gr. Aster = Star; Eoids = Form), Class Ophiuroidea, Class Echinoidea, Class Holothuroidea, Class Crinoidea, Phylum Hemichordata Or Stomochordata, Phylum Chordate, Other Chordate Characters Are, Sub-Phylum Urochordata (Tunicata), Sub-Phylum Cephalochordata, Sub-Phylum Vertiorata Or Craniata, Sub-Phylum Vertebrata Or Craniata, Agnathostomata, Characters, Superclass Pisces, Class Chondrichthyes, Class Osteichthyes – Bony Fishes, Super-Class Tetrapoda, Class-Amphibians, Class Reptilia, Class Aves, Class Mammalia, Prototherians (Monotremes), Subclass 2. Theria Metatherians (Pouched Mammals), Eutheria

Unit - Animal Tissues and Structural Organization in Animals

Tissue & Types of Tissue

Tissue & Types Of Tissues, Epithelial Tissues, Characters, General Position, Steriocilia, Microvilli, Cilia Or Kinocilia, General Functions, Type Of Epithelial Tissues, Squamous Epithelium, Cuboidal Epithelium, Type Of Cuboidal Epithelia, Columnar Epithelium, Type Of Columnar Epithelia, Compound Epithelia, Stratified Squamous Epithelium, Transitional Or Plastic Epithelium, Three Special Types Of Epithelia, Myoepithelial Cells, Glandular Epithelia, Glands & Their Secretions, On The Basis Of Number Cells, Saccular (Acinal Or Alveolar) Glands, Muscular Tissues, General Structure, General Functions Of Muscular Tissue, Striated Muscles, Structure, Smooth Muscle Fibres, , Structure, Cardiac Muscles, Structure, Connective Tissue, Basic Structure, General Functions, Connective Tissue Proper, Adipose Connective Tissue, Sheaths, Connective Tissue Proper, Areolar (Loose Fibrous) Connective Tissue, Fibre Types, Cell Types, Function Adipose Tissue, White Fibrous Connective Tissue, Skeletal Tissue General Functions, Two Types Of Skeletal Tissue, Structure, Matrix, Bone, Matrix Of Bone, Structure Of Bone, Parts Of Bone, On The Basis Of Treatment: Bones Are Of Two Types, On The Basis Of Origin Of Bone, Vascular Tissue, Types Of Vascular Tissues, Blood, Number, Colour, Structure, Formation, Life Span, Types, Granulocytes, Blood Platelets, Thrombocytes, Lymph, Composition, Functions, Nervous Tissue, Nerve Processes, Neurons, Types Of Neurons, Motor (Efferent Neurons), Types Of Nerve Fibres, Number Of Sheaths, Axis Cylinder, Neurilemma, Structure, Schwann Or Sheath Cells, Neuroglia Or Glial Cells, Functions, Ependymal Cells, Neurosecretory Cells.

Cockroach

Systematic Position, Habitat, Habits, Morphology, Shape, Size Colour And Symmetry, Exoskeleton, Head, Exoskeleton Of Head, Sense Organs, Compound Eyes, Antennae, Fenestrae Or Ocellar Spots, Mouth – Cervicum, Thorax, Sclerites, Appendages, Abdomen Scleritis, Anal Styles, Gonapophyses Or External Genitalia, Apertures, Internal Morphology (Anatomy), Body Wall, Digestive System, Mesenteron Or Ventriculus Or Midgut, Respiratory System, Excretory Organs, Central Nervous System, Circum-Oesophageal Nerve Ring, Endocrine Glands, Reproductive Male Reproductive System, Vasa Deferentia, Female Reproductive System, Copulation, Ootheca, Formation, Fertilization And Development, Interaction With Mankind, Harmful Activities, Useful Activities.

Frog

Systematic Position, Difference Between Frogs And Toads, Natural History, Habitat, Habit, External Morphology, Hind Limbs, Anatomy, Coelom (Body Cavity) Alimentary Canal, Mouth, Buccopharyngeal, Digestive Glands, Respiratory Organs, Heart, Blood, Sense Organs.

Earthworm

Systematic Position, Habitat, Habits, Locomotion, External Morphology, Shape, Size, Colour And Symmetry, Segmentation Metameric Segmentation, Clitellum (Or Cingulum), Apertures, Mouth, Anus, Female Gonopore, Male Gonopores, Genital Or Copulatory Papillae, Spermathecal Pores, Nephridiopores, Dorsal Pores, Internal Morphology (Anatomy) Body Wall, Setae, Coelom, Alimentary Canal, Anus, Respiration, Circulatory System, Hearts, Excretory System, Nervous System, Circum-Pharyngeal Nerve Ring, Reproductive System, Copulation And Development, Interaction With Mankind.

Unit - Bio-Molecules

Biomolecules

Introduction, These Biomolecules Occur In Two Forms, Micro Molecules In Cells, Carbohydrates, Monosugars, Functions Of Monosaccharides, Oligosaccharides, Differences Between Reducing And None Reducing Sugars, Functions, Lipids, Simple Lipids, Neutral Or True Fats, Glycerol, Fatty Acids, Differences Between Saturated And Unsaturated Fatty Acids, Differences Between Essential And Non-Essential Fatty Acids, Waxes, Compound Or Conjugated Lipids, Glycolipids, Lipoproteins Cutin And Suberin Derived Lipids, Steroids, Cholesterol, Ergosterol, Functions Of Lipids, Amino Acids, Zwitter Ionic Nature, Pvt. Tim. Hall, Composition Of Protein Amino Acids Functions Of Amino Acids, Nucleotides, Nucleosides And Nucleotides Of Dna And Rna, Functions Of Nucleotides, Differences Between Primary Metabolites And Secondary Metabolites, Macromolecules In Cell Polysaccharide, Structural Classification, Homopolysaccharids, Glycogen, Starch, Cellulose (Cellulin), Heteropolysaccharides, Molecular Structure Of Starch, Hyaluronic Acids, Chitin, Peptidoglycan, Function, Proteins, Four Structure Models Of Proteins, Tertiary Structure, Difference Between A-Helix And B-Pleated Sheet Model, Types Of Proteins Shape Of Molecules Fibrous Proteins, Globular Proteins, Components Of Molecules Simple Proteins, Conjugated Proteins, Functions, Nucleic Acids, Dna, Functions Of Dna, Rna:- Ribose Nucleic Acid (Rna), Differences Between Dna And Rna, Ribosomal Rna, Messenger Rna, Transfer Rna, Dynamic State-Concept Of Metabolism, Differences Between Anabolic And Catabolic Pathways, Role Of Enzymes In Metabolism, Role Of Enzymes In Metabolism, Enzymes, Properties Of Enzymes, Difference Between Inorganic Catalysis And Enzymes, Mechanism Of Enzyme Action Lock And Key Mechanism, Induced Fit Mechanism, Michaelis-Menton Hypothesis, Factors Affecting Enzyme Activity Temperature, Substrate Concentration, Presence Of Inhibitors, Non-Competitive Inhibition, Classification Of Enzymes, International System Of Enzyme- Classification, Naming Of Enzymes, Cofactors, Three Categories Of Cofactors.

Unit - Human Physiology

Digestion and Absorption

Human Digestive System, Mouth, Vestibule, Buccal (Oral) Cavity, Palate, Tongue Or Lingua, Teeth, Structure Of Teeth, Pharynx, Oesophagus, Small Intestine, Differences Between Jejunum And Ileum, Anus, Histology Of Gut, Human Digestive Glands, Pancreas, Intestinal Glands, Digestion Of Carbohydrate, Digestion In Oral Cavity, Digestion In Caecum, Digestion Of Cellulose Digestion Of Proteins, Small Intestine, Digestion Of Fat, Digestion Of Nucleic Acids, Role Of Gastrointestinal Hormones In Digestion, Absorption Of Digested Products, Length Of Intestine, Mechanism, Assimilation, Disorders Of Digestive System.

Breathing & Gases Exchange

Respiration, Respiratory Surface, Direct And Indirect Respiration, Respiratory Medium, Respiratory Structure For The Exchange Of Gases Indifferent Groups Of animals, Human Respiratory System Respiratory System In mammals, Respiratory Tract, Eicm, Ilicm, External Nares (Nostrils), Nasal Chambers, Vestibular Part, Respiratory Part, Olfactory Part, Importance Of Nasal Breathing Internal Nares, Pharynx, Larynx Voice Box, Trachea, Primary Bronchi, Respiratory Organs, Mechanism Of Breathing Inspiratory Phrenic (Radial) Muscles Of Diaphragm, Pulmonary Air Volumes And Lung Capacities, Tidal Value (Tv), Inspiratory Reserve Volume (Irv), Expiratory Reserve Volume (Erv), Vital Capacity (Vc) Of Lungs, Residual Volume (Rv), Inspiratory Capacity(Ic), Functional Residual Volume (Frc), Total Lung Capacity (Tlc), Respiratory Quotient (Rq) Composition Of Inspired, Expired And Alveolar Airs Exchange Of Gases, Partial Pressures, Lung, Uptake Of Oxygen By The Pulmonary Blood, Release Of Carbon Dioxide By Blood Tissues Transport Of Gases In Blood, Oxygen Transport, Oxyhemoglobin, Factors Affecting Oxygen Dissociation Curve Of Hemoglobin, Bohr Effect, Carbon Dioxide Transport, Physical Solution, Bicarbonate Ions, Chloride Shift/Hamburger Shift, As Carbaminohaemoglobin, Haldane Effect, Control Of Respiration, Nervous Control, Dorsal Respiratory Group Of Neurons, Ventral Group Of Neurons, Expiratory Centre, Pneumotaxic Centre, Apneustic Centre, Chemical Control, Disorders Of Respiratory System Hypoxia, Artificial hypoxia, Anaemic Hypoxia, Asphyxia/Suffocation, Bad Cold, Rhinitis, Sinusitis, Pharyngitis, Laryngitis, Bronchitis, Bronchial Asthma, Pneumonia, Emphysema, Occupational Respiratory Diseases.

Body Fluids and Circulation

Functions Of Circulatory System, Blood Vessels, Artery Or Vein, Capillaries, Regulation Of Blood Flow Arterial Musculature: Muscles Present In Arterial Walls Pre Capillary Sphincters, Arterio-Venous Anastomoses, Different Type Of Blood Groups, Abo Blood Groups, Rh (Rhesus) System, Blood Clotting & Coagulation, Formation Of Prothrombin Activator, Intrinsic Pathway, Extrinsic Pathway, Conversion Of Prothrombin Into Thrombin, Conversion Of Fibrinogen Into Fibrin, Human Heart, Septum, Human Heart, Internal Structure, Histology, Artificial Pacemaker, Electrocardiogram (Ecg), Heart Rate Heart Output (Cardiac Output), Blood Pressure Stages, Cardiovascular Diseases, Lymphatic Capillaries, Lymphatic Capillaries, Functions Of Lymph Or Lymphatic System.

Excretory Waste and Their Elimination

Nitrogenous Waste Materials, Other Wastes, Meaning Of Homeostasis, Osmoregulation And Excretion Excretion, Excretory Organs In Other Animals, Human Excretory Organs, Kidneys, Ureters, Urinary Bladder, Urethra, Nephrons, Types, Differences Between Cortical Nephron And Juxta-Medullary Nephron, Structure, Renal Corpuscle, Renal Tubule, Loop Of Henle, Dct:-Distal Convoluted Tubule (Dct), Collecting Duct, Physiology Of Excretion, Table 11. Summary Of Physiology Of Urine Formation, Pct Dct, Ct, Collecting Duct, Tubular Secretion, Countercurrent Mechanism Of Urine Concentration, Role Of Countercurrent Mechanism, Components Of Countercurrent Mechanism, Urine, Conduction Of Urine And Micturition, Regulation Of Kidney Function, Role Of Renin Angiotensinogen System In Osmoregulation, Atrial Natriuretic Factor (Anf), Functions Of Kidneys/Nephron Other Disorders Of Excretory System, Kidney Disorders, Artificial Kidney: Already Discussed. Kidney (Renal) Transplantation, Additional Excretory Organs.

Locomotion and Movements

Locomotion, Movements Non-Muscular Movements Protoplasmic Movements, Pseudo-Podial Movement, Flagellar Movements, Ciliary Movement, Ciliary Movement, Muscle System, Striated Muscle, Primary Myofilaments, Secondary Myofilaments (Myosin), Muscle Contraction Motor Unit, Innervation Of Skeletal Muscle All-Or-None Principle, Threshold Stimulus, Muscle Tonus (Tone), Summation, Muscle Contraction, Mechanism Of Muscle Contraction, Sliding Filament Theory, Electrical And Biochemical Event In Muscle Contraction, Energy For Muscle Contraction, Cori's Cycle, Muscle Fatigue, Oxygen Debt, Red And White Skeletal Muscles Fibres, Skeleton (Skeletal System), Cartilage, Bone Functions, Human Skeleton, Axial Skeleton, Skull, Cranium, Cranium = Pest Of, Face, Trick Facial Bone – Vain Mm Plz, Hyoid Bone, Vertebral (Spinal) Columns, Cervical Vertebrae, Thoracic Vertebrae, Lumbar Vertebrae, Sacral Vertebrae, Coccygeal Vertebrae, Ribs, Appendicular Skeleton, Girdles, Pelvic (Hip) Girdle, Humerus, The Radius & Ulna, Carpal Bones, Carpal Bone-8 (Wrist Bone), Bone Of Hind Limb, Femur, Fibula, Tarsals, Phalanges, Tarsal, Summary Of Total Bones, Joints: Types Of Joints, Skeletal And Muscular Disorders, Arthritis (Aching Joints), Gout Or Gouty Arthritis, Fractures, Muscular Dystrophy.

Neural Control and Corrdination

Neural Tissue, Nervous System In Invertebrates, Division Of Human Nevous System, Functions Of Nervous System, Central Nervous System, Fore Brain:- Forebrain (Prosencephalon, Olfactory Lobes, Cerebrum Fissures, Functions, Other Important Nuclei Are, Mid-Brain, Tier, Hind Brain, Cerebellum (Little Brain, Functions, Medulla Oblongata, Pons Varolii, Brain Stem, Cerebrospinal Fluid, Blood-Brain-Barrier (Bbb), Meninges, Spinal Cord, Histology, Cranial Nerves, Spinal Nerves, Spinal Nerves, Reflex Actions, Reflex Arc, Conditioned Reflexes, Parasympathetic Nervous System, Differences Between Sympathetic And Para-Sympathetic Nervous System, Autonomic (Visceral) Nervous System, Nerve Impulse, Neurotransmitters Neurotransmitters Or Neurohormone, Disorders Of Nervous System, Sensory Organs, Skin Receptors, Organs Of Taste, Organs Of Sight, 3rd Structure Of Eye, 2d Structure Of Eye, Structure, Iridial Part, Working Of Eye, Mechanism Of Vision, Common Eye Defects, Organs Of Hearing And Equilibrium, Structure:- External Ear, Middle Ear, Structure Of Macula, Semicircular Ducts, Cochlea Cross Section, Internal Ear.

Chemical Coordination and Intergration

Glands, Endocrine Glands And Hormones, Hormones, Definition, Chemical Nature (Classification): Chemical Nature Of Harmones, Coordination Between Endocrine And Nervous Systems Sympathetic Nervous System, Human Endocrine Gland, Hypothalalmus, Structure, Neurohormones, Pituitary (Hypophysis), Two Parts: Adenohypophysis And Neurohypophysis, Hormones Of Adenohypophysis, Their Physiological Effects And Disorders Due To Their Imbalanced Level, Hormones-Melatonin, Pineal (Epiphysis), Structure Hormones-Melatonin, Thyroid, Origin & Location, Structure, Hormones, Disorders Hypothyroidism, Cretinism, Myxedema, Parathyroid, Hypoparathyroidism- Parathyroid Tetany, Hyperparathyroidism- Osteoporosis, Thymus, Thymosine - A Polypeptide Hormone, Structure Hormone, Adrenals (Suprarenals), Adrenals (Suprarenals), Structure, Adrenal Cortex, Mineralocorticoids, Glucocorticoids, Sexcorticoids, Disorders, Adrenal Medulla: Hormones Of Adrenal Medulla, Role Of Epinephrine, Pancreas, Origin & Location, Structure, Hormones, All The Pancreatic Hormones Are Polypeptides, Gonads, Ovaries, Progesterone Relaxin, Placenta, Kidneys, Mucous Membrane Of The Elementary Canal (Gastrointestinal Mucosa), Placenta Estrogens, Progesterone And Hcghuman Chorionic Gonadorophin, Other Endocrine Glands Heart, Liver, Mechanism Of Hormone Action, Role Of Hormones In Homeostasis, Insect Endocrine Glands.

Unit - Reproduction

Reproductions in Human

Organs Of Male Reproductive System In Human, Gametogenesis, Male Reproductive System, Scrotum, Primary Sex Organs, Testes, Functions Of Sertoli Cells, Interstitial (Leydig's) Cells, Secondary Sex Organs, Vasa Efferentia, Epididymis, Ejaculatory Duct, Urethra, Penis, Accessory Sex Glands, Prostate Gland, Cowper's Glands Or Bulbourethral Glands, Semen, Spermatogenesis, Structure Of Spermatozoon, Hormonal Control Of Spermatogenesis, Disorders Of Male Reproductive System, Female Reproductive System, Primary Sex Organ, Ovaries, Secondary Sex Organs, Fallopian Tubes Or Oviduct, Uterus, Vagina, External Genitalia, Vestibular Glands, Mammary Glands, Oogenesis, Structure Of Ovum, Comparison Of Egg And Sperm, Menstrual Cycle, Follicle Stage, Ovulation, Corpus Luteum, Menstruation, Hormonal Control During Puberty, Estrous Cycle, Disorders Of Female Reproductive System, Fertilisation And Implantation, Capacitation Of Sperms, Penetration Of Sperms, Acrosome Reaction- Hyaluronidase, Corona Penetrating Enzyme, Zona Lysine Or Acrosin, Fertilizing-Antifertilizin Reaction, Cortical Reaction And Zona Reaction, Cleavage, Blastulation, Implantation, Gastrulation Or Formatin Of Germ Layers, Formation Of Primary Germ Layers, Foetal Membranes, Organogenesis, Placenta, Types Of Placenta, Functions Of Placenta, Parturition, Lactation, Development Disorders.

Reproductive Health

Definition, Reproductive Health-Problems And Strategies, Human Population Explosion, Human Population Explosion, Population Control, Birth Control, Intrauterine Device (Iuds), Physiological (Oral) Devices Saheli, Mini Pill Or Progestin Only Pill (Pop), Morning After Pill Or Emergency Contraceptive Pills, Injections Or Implants, Permanent Methods (Surgical Method) Vasectomy And Tubectomy, Medical Termination Of Pregnancy (Mtp) Or Induced Abortion- Significance, Drawbacks, Sexually Transmitted Diseases (Std), Gonorrhoea, Syphilis, Trichomoniasis, Chancroid, Genital Warts:, Genital Herpes, Aids, Infertility, Infertility In Females: The Main Reasons Of Infertility In Female Are, Assisted Reproduction Technologies (Art), Amniocentesis.

Unit - Evolution

Evolution

Origin Of Life- Biopoesis, Theory Of Catastrophism-George Cuvier, The Father Of Modern Paleontology 1796, Cosmozoic Or Interplanetary Theory Or Panspermia-richtert 1865, Theory Of Eternity:-Proposed By Preyer (1880), Abiogenesis (Theory Of Spontaneous Generation)-Von Helmont, Redi's Experiments, 1668, Spallanzani's Experiment, 1767, Louis Pasteur's Experiment, 1867, Origin Of Earth & Evolution Of Earth, Haldane -Oparin Theory Of Origin Of Life, Urey Miller's Experiment, Evidences Of Evolution Morphological And Anatomical Evidences, Homology, Vertebrate Forelimbs, Brain And Heart Cervical Vertebrae In Mammals Insect Mouth Parts, Analogy Insect And Bird Wings Fins And Flippers Cephalopods And Vertebrate Eyes, Leaves And Cladodes, Tuberous Root And Potato, Stings Of Honeybee And Scorpion, Stem Tendrils Of Passiflora And Leaf Tendrils Of Pisum Sativum, Connecting Links Vestegial Organs, Atavism E.G. Multinippled Condition In Man, Embryological Evidences-Biogenetic Law By Ernst Haeckel, Palaeontological Evidences, Kinds Of Fossils, Determination Of Age Of Fossils Relative Dating Methods, Absolute Dating Method-Based On Half Life (T_{1/2}) Of Radioactive Substance, Geological Time Scale, Missing Links Archaeopteryx Lithographica Ichthyostega Seymouria-Amphibian And Reptile, Biogeographical Evidences, Physiological And Biochemical Evidences, Classification Of Evolution, Microevolution, Macroevolution, Mega-Evolution, Convergent Evolution, Parallel Evolution, Adaptive Radiation, Co-Evolution, Retrogressive Evolution, Progressive Evolution:- Origin Of Chordates From Echinoderms, Lamarck's Theory Of Evolution, Inheritance Of Acquired Characters, Criticism Of Theory, Darwinism, Neo-Lamarckism, Darwin's Theory Of Natural Selection, Rapid Multiplication, Struggle For Existence, Intraspecific, Environmental, Variations, Natural Selection/Survival Of Fittest, Inheritance Of Useful Variations, Formation Of New Species, Criticism Of The Theory, Neo Darwinism, De Vries Mutation Theory, Mutational

Theory Of Hugo De Vries And The Modern Concept, Modern Concept Of Evolution, Genetic Variation In Population, Hardy Weinberg Law, Genetic Drift, Founder Effect, Selection- Industrial Melanism, Natural Selection Stabilizing Or Normalizing Selection, Directional Or Progressive Selection, Disruptive Or Diversifying Selection, Speciation, Phyletic Speciation, Autogenous Transformation, Allogenuous Transformation, True Speciation, Pattern Of Speciation, Reproductive Isolation, Population Genetics: Hardy Weinberg Law, Species Concept Morphological Species Concept-Morphological Species Or Morphospecies, Biological Species Concepts-Biological Species Or Biospecies, Sibling Species, Cohesive Concept Species Ecological Species Concept Evolutionary Species Concept, Human Evolution Early Primates And Apes, Human Evolution, Similarity Between Apes And Humans, Differences Between Apes And Humans, Process In Human Evolution, Fossils Of Man, Dryopithecus Oreopithecus Ramapithecus Australopithecus, Homo Erectus, Human Races.

Unit - Biology and Human Welfare

Human Health & Disease

Human Health Is Affected By, Important Terminology, Diseases, Some Communicable Diseases In Human (Table), Human Health & Disease. Bacterial Disease, Trick To Remember Disease Caused By Protozoa, Trick To Remember Disease Caused By Fungus, Tricques For Autonomic Dominant Disease, Some Non-Communicable Diseases In Man, Hypersensitive Diseases, Cardiovascular Diseases, Atherosclerosis, Hypertension, Coronary Heart Diseases, Myocardial Infarction, Angina Pectoris, Heart Block, Heart Failure, Rheumatic Heart Disease, Arthritis, Osteoarthritis, Rheumatoid Arthritis, Septic Arthritis, Cancer, Classification Of Cancer, Immunity (Disease Resistance), Innate Or Inborn Immunity, Acquired Immunity, Cellular Barrier, Acquired Or Adaptive Immunity, Active Immunity, Passive Immunity, Non Specific Immune Response, Specific Immune Response, Disorders Of Immune System Allergy, Aids, Vaccination, History, Principle Of Vaccination, Types, Drugs And Their Abuse, Sedatives, Opiates – Narcotics, Stimulants, Structure Of Hiv, Target Cells Infection By Hiv, Target Cells Of Hiv, Transmission Of Hiv, Diagnosis Of Hiv Infection, Hallucinogenic Drugs (Psychedelic), Drug Addiction Tobacco Alcoholism And Cigarette Smoking.

Animal Husbandry

Live Stock, Breeds Of Indian Cows, Breeds Of Indian Buffaloes, Breeds Of Indian Horses, Breeds Of Pigs, Breeds Of Indian Sheep, Breeds Of Indian Goat, Animal Breeding, Method Of Animal Breeding, Inbreeding, Outbreeding, Outcrossing, Cross-Breeding, Inter Specific Hybridization, Controlled Breeding Experiments Artificial Insemination, Multiple Ovulation Embryo Transfer (Moet), Management Of Livestock, Cattle Management, Pisciculture, Steps Used In Pisciculture, Poultry, Indigenous Breeds, Exotic Breeds, Poultry Feed, Sericulture, Species Of Silkworm, Silk, Process Of Sericulture, Apiculture, Species Of Honeybees, Methods Of Bee-Keeping, Typical Movable Beehive, Products Of Bees, Beewax, Lac Culture.

Unit - Biotechnology

Biotechnology Principle and Processes

Biotechnology, Two Types, Two Main Principles, Principles Of Biotechnology, Basic Steps In Biotechnology, Chemical Engineering, Genetic Engineering, Tools Of Recombinant Dna Technology, Enzymes, Two Types Of Cleaving Enzymes Present Naturally In Cells, Restriction Endonuclease Enzyme, Types Of Restriction Endonuclease, Pallindromic Sequence, (i) Synthesing Enzymes, (ii) Joining Enzymes, (iii) Other Enzymes, Nomenclature, Recognition Sites And Types Of Cut, Types Of Restriction Enzymes, End Modification Enzymes, Dna Ligase, Lyases, Synthetases, Cloning Vectors (Vehicle Dna), Essential Features Of Vector, Origin Of Replication, Marker Gene, Recognition Site, Types Of Vectors, Different Types Of Artificial Cloning Vectors, Plant And Animal Virusartificial Vector, Artificial Chromosome, Transposons, Bacteriophage Virus (λ -Phage), Bacterial Artificial Chromosome (Bac), Gene Of Interest Alien Gene/Passenger Dna, Complementary Dna, Synthetic Dna, Dna Probes, Other Tools, Shotgun, Antisense Genes Techniques Used In Recombinant Dna Technology Gene Synthesis, Gene Synthesis-Artificial Synthesis Of Genes, Electrophoresis, Polymerase Chain Reaction (Pcr), Requirements And Steps, Applications, Southern Blotting, Northern Blotting, Western Blotting, Replica Plating, Process Of Recombinant Dna Technology, Isolation Of Genetic Material (Dna), Cutting Of Dna

At Specific Locations, Amplification Of Gene Of Interest Using Pcr Insertion Of Gene Of Interest (Goi) Into Vector, Insertion Of Rdna Into Host Cell, Gene Transfer, Indirect Gene Transfer, Plant Tumours, Viruses, Bacteriophage, Adenovirus, Retrovirus, Directs Gene Transfer Physical Methods Of Gene Transfer Heat Shock, Electroporation, Biolistic, Microinjection, Liposomes, Chemical Methods Of Direct Gene Transfer Polyethylene Glycol Medicated Transfer, Calcium-Phosphate Co-Precipitation, Selection And Screening Of Transformed Cells, Immunological Method, Nucleic Acid Hybridization, Insertional Inactivation, Obtaining Foreign Gene Product, Bioreactor, Simple Stirred-Tank Sparged Stirred-Tank, Downstream Processing.

Biotechnology and Its Application

Application Of Biotechnology, Application In Agriculture, Biotechnology Application In Medicine. Medicinal Gene Products, Insulin Production, Gene Therapy, Human Growth Hormone (Hgh), Antitrypsin (Aat), Stem Cell Technology, Transgenic Animals, Study Of Physiology And Development, Vaccine Production, Monoclonal Antibodies, Ethical Issues In Biotechnology, Biopatent, A Patent Granted For, Biopiracy.