**Biology**

**Diversity in Living World**

* Diversity of Living Organism.
* Classification of the Living Organisms (Five Kingdom Classification, Major Groups Principles Of Classification Within Each Kingdom).
* Systematic And Binomial System Of Nomentlature.
* Salient Features Of Animal (Non Chlordates Up To Phylum Level, And Chlordates Up To Class Level) And Plant (Major Groups; Angiosperms Up To Subclass) Classification.
* Botanical Garden, Herbaria, Zoological Parks Museums.

**Structural Organisation In Animals And Plants**

* Tissues In Animals And Plants.
* Morphology, Anatomy And Functions Of Different Parts Of Flowering Plants : Root, Stem, Leaf, Inflorensence, Flower, Fruit And Seed.
* Morphology, Anatomy And Functions Of Different Systems Of An Annelid (Earthworm), An Insect (Cockroach) And An Amphibian (Frog.)

**Cell: Structure And Function**

* Cell : Cell Wall, Cell Membrane And Cell Organelles (Plastids, Mitochondria, Endoplasmic Reticulum, Golgi Bodies/ Dictyosomes, Ribosomes, Lysosomes, Vacuoles, Centrioles) And Nuclear Organisation.
* Mitosis, Meiosis, Cell Cycle. Basis Chemical Constituents Of Living Bodies.
* Structure And Functions Of Carbohydrates, Proteins, Lipids And Nucleic Acids.
* Enzymes : Types, Properties And Function.
* PLANT PHYSIOLOGY
* Movement Of Water, Food, Nutrients And Gases.
* Plants And Water : Mineral Nutrition Respiration Photosynthesis Plant Growth And Development

 **Human Physiology**

* Digestion And Absorption.
* Breathing And Respiration
* Body Fluids And Circulation
* Excretory Products And Elimination
* Locomotion And Movement
* Control And Coordination

**Sexual Reproduction**

* Pollination And Fertilization In Flowering Plants.
* Development Of Seeds And Fruits.
* Human Reproduction: Reproductive System In Male And Female, Menstrual Cycle.
* Production Of Gametes, Fertilization, Implantation, Embryo Development,, Pregnancy And Parturation.
* Reproductive Health-Birth Control, Contraception And Sexually Transmitted Diseases.

**Genetics and Evolution**

* Mendelian Inheritance.
* Chromosome Theory of Inheritance, Deviations from Mendelian Ratio (Gene Interaction-Incomplete Dominance, Codominance, Complementary Genes, Multiple Alleles.)
* Sex Determination In Human Beings: Xx, Xy. - Linkage and Crossing Over. - Inheritance Pattern of Haemophilia And Blood Groups In Human Beings.
* DNA: Replication, Transcription, Translation.
* Gene Expression and Regulation.
* Genome and Human Genome Project.
* DNA Fingerprinting.
* Evolution: Theories and Evidences.

**Biology and Human Welfare**

* Animal Husbandry.
* Basic Concepts Of Immunology, Vaccines.
* Pathogens, Parasites. - Plant Breeding, Tissue Culture, Food Production.
* Microbes In Household Food Processing, Industrial Production, Sewage Treatment And Energy Generation.
* Cancer And Aids.
* Adolescene And Drug/Alcohol Abuse.

Biotechnology And Its Appliations –

* Recombinant Dna Technology.
* Applications In Health, Agriculture And Industry.
* Genetically Modified (Gm) Organism; Biosafety Issues.
* Insulin And Bt Cotton.

Ecology & Environment

* Ecosystems: Components, Types And Energy Flow.
* Species, Population And Community.
* Ecological Adaptations.
* Centers of diversity and conservation of biodiversity, national parks and sanctuaries. Environmental issues.