



Chapter 1 : Cell : Structure and Function

Cell concept, Cell theory, Types of cell, Ultrastructure of plant and animal cells, Cell wall, Cell membrane, Protoplasm, Plastids (Chloroplast), Mitochondria, Endoplasmic reticulum, Golgi complex, Ribosome, Lysosome, Peroxisomes, Glyoxysomes, Centrosome, Microtubules, Nucleus, Comparison in between plant and animal cells, Principal compounds of cell: Carbohydrates, Lipids, Proteins, Nucleic acids (DNA and RNA).

Chapter 2 : Molecular Transmission of Genetic Information

Morphology of chromosome, Structure and function of chromosome, Cell division: Cell cycle, Interphase, Mitosis, Cytokinesis, Meiosis, Comparison in between mitosis and meiosis, Gene concept, Central Dogma, Replication of DNA, Genetic code, Mendelian principle (Mendelism), Law of inheritance, Deviation from Mendelian Principle, Sex determination.

Chapter 3 : Micro-organisms and their Importance

Structure, function and importance of micro-organisms: Virus, Bacteria, Algae, Fungi, Lichen, Amoeba, Malaria Parasite, Penicillium, AIDS.

Chapter 4 : Health and Diseases

Primary health care, Food and sanitation, Food and hygiene, Diseases: Transmission of diseases, Contagious and Infectious diseases, Classification of diseases on the basis of modes of

transmission, immunisation, Some diseases and their symptoms: Measles, Chicken pox, Scarlet fever, Whooping cough, Cholera, Dysentery, Enteric fever, Mumps, Tetanus, Malaria.

Chapter 5 : Ecology

Ecology, Ecosystem, Ecological factors, Climatic factors: Lights, Temperature, Water, Wind, Humidity, Atmospheric gases, Edaphic factors: Soil, Formation of soil, Maturation, Soil erosion, Soil conservation, Biotic factor, Limiting factors, Laws of Limiting factors, Concept of ecosystem, Biotic components, Abiotic components, Ponds an ecosystem, Energy flow in ecosystem, Food chain, Food web, Ecological Pyramids, Productivity.

Chapter 6 : Environmental Pollution and its Consequences

Pollutants, Types of pollutants, Agents causing pollution, Classification of pollution, Effects of pollution, Air pollution, Water pollution, Terrestrial pollution, Noise pollution, Radiation pollution, Thermal pollution, Industrial pollution, Chemical pollutants, Ozone layer depletion, Green house effect, Smog, Acid rain.

Chapter 7 : Biochemistry : Characteristics and Metabolism of Some Biomolecules

Carbohydrates : Classification of carbohydrates, Structure and metabolism of sucrose and starch, Protein: Classification of proteins, Synthesis of protein (Role of DNA in protein synthesis). Fats : Fat synthesis, Breakdown of fats, Breakdown of glycerol, oxidation of fatty acids (α -oxidation and β -oxidation) Enzymes : Nomenclature and classification, Characteristic functions, Chemical nature, Photosynthesis, Site of photosynthesis, Photosynthetic pigments, Photosynthetic assemblies, Hill reaction, Mechanism of photosynthesis, Respiration: Respiratory substrates. Types of respiration, Anaerobic respiration, Glycolysis, Aerobic respiration, Krebs cycle, Nitrogen, Metabolism: Nitrogen assimilation, Nitrogen fixation, Amino acid and its synthesis, Nitrogen cycle in nature.

Chapter 8 : Conservation of Natural Resources

Forest : A renewable resource, Forest cover, Deforestation, Conservation of forest, Afforestation, Social forestry, Biodiversity. Wild life : A renewable resource, Wild life conservation, Water resources and their conservation, Soil resources and their conservation, Energy resources and their conservation, National parks and sanctuaries.

Chapter 9 : Economic Importance of some Plants and Animals

Forests : Some locally available forest plants, Agricultural plants
: Fibre yielding plants, Oil yielding plants, Medicinal plants,
Beneficial insects: Silk moth, Honey bee, Earth worm.

Chapter 10 : Chemical Phenomenon in Biology

Interactions in Biomolecules, Hydrophobic Interactions,
Functional Groups in Biomolecules, Energy and its Different
Forms, Law of Thermodynamics, Concept of Entropy, Concept
of Free Energy, Redox Reaction, Bio-Chemical Reactions,
Energy Ric Compounds.

Chapter 11 : Organic Evlution

Introduction, Theories of Organic Evolution, Evidences of
Organic Evolution, Origin of Life, Modern Concepts of Origin
of Life,

Chapter 12 : Classification of Living Organisms

History, Systems of Classification, Units of Classification,
Nomenclature, Kingdoms of Life.

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