

CBSE Syllabus for Class 11 Biology 2024-25

Unit	Title	Marks
I	Diversity of Living Organisms	15
II	Structural Organization in Plants & Animals	10
III	Cell: Structure and Function	15
IV	Plant Physiology	12
V	Human Physiology	18

Unit-I Diversity of Living Organisms

Chapter 1: The Living World

- Biodiversity
- Need for classification
- Three domains of life
- Taxonomy and systematics
- Concept of species and taxonomical hierarchy
- Binomial nomenclature

Chapter 2: Biological Classification

- Five kingdom classification
- Salient features and classification into major groups
 - Monera
 - Protista
 - Fungi
 - Lichens
 - Viruses
 - Viroids

Chapter 3: Plant Kingdom

- Classification of plants into major groups
- Salient and distinguishing features and a few examples of
 - Algae
 - Bryophyta
 - Pteridophyta
 - Gymnospermae

(Topics excluded – Angiosperms, Plant Life Cycle, and Alternation of Generations)

Chapter 4: Animal Kingdom

- Salient features and classification of
- Animals, non-chordates up to phyla level
- Chordates up to class level
- (salient features and a few examples of each category).

(No live animals or specimens should be displayed.)

Unit-II Structural Organization in Plants and Animals

Chapter 5: Morphology of Flowering Plants

- Morphology of different parts of flowering plants
- Root, stem, leaf, inflorescence, flower, fruit, and seed.
- Description of the family Solanaceae

Chapter 6: Anatomy of Flowering Plants

Anatomy and functions of tissue systems in dicots and monocots.

Chapter 7: Structural Organisation in Animals

- Morphology, Anatomy, and functions of different systems of frogs.
 - Digestive
 - Circulatory
 - Respiratory
 - Nervous
 - Reproductive systems

Unit-III Cell: Structure and Function

Chapter 8: Cell-The Unit of Life

- Cell theory and cell as the basic unit of life
- Structure of prokaryotic and eukaryotic cells
- Plant cell and animal cell
- Cell envelope; cell membrane, cell wall
- Cell organelles - ultrastructure and function of
 - Endomembrane system
 - Endoplasmic reticulum
 - Golgi bodies
 - Lysosomes
 - Vacuoles,
 - Mitochondria
 - Ribosomes
 - Plastids
 - Microbodies
 - Cytoskeleton
 - Cilia
 - Flagella
 - Centrioles
 - Nucleus.

Chapter 9: Biomolecules

- Chemical constituents of living cells
- Biomolecules structure and function of
 - Proteins
 - Carbohydrates
 - Lipids
 - Nucleic acids
- Enzyme - types, properties, enzyme action.

(Topics excluded: Nature of Bond Linking Monomers in a Polymer, Dynamic State of Body Constituents Concept of Metabolism, Metabolic Basis of Living, The Living State)

Chapter 10: Cell Cycle and Cell Division

- Cell cycle
- Mitosis
- Meiosis
- Their significance

Unit-IV Plant Physiology

Chapter 13: Photosynthesis in Higher Plants

- Photosynthesis as a means of autotrophic nutrition
- Site of photosynthesis
- Pigments involved in photosynthesis (elementary idea)
- Photochemical and biosynthetic phases of photosynthesis
- Cyclic and non-cyclic photophosphorylation
- Chemiosmotic hypothesis
- Photorespiration
- C₃ and C₄ pathways
- Factors affecting photosynthesis.

Chapter 14: Respiration in Plants

- Exchange of gases
- Cellular respiration
- Glycolysis
- Fermentation (anaerobic)
- TCA cycle
- Electron transport system (aerobic)
- Energy relations - number of ATP molecules generated
- Amphibolic pathways
- Respiratory quotient.

Chapter 15: Plant - Growth and Development

- Seed germination
- Phases of plant growth
- Plant growth rate
- Conditions of growth
- Differentiation, dedifferentiation, and redifferentiation
- Sequence of developmental processes in a plant cell
- Plant growth regulators
 - Auxin
 - Gibberellin
 - Cytokinin
 - Ethylene
 - ABA.

Unit-V Human Physiology

Chapter 17: Breathing and Exchange of Gases

- Respiratory organs in animals (recall only)
- Respiratory system in humans
- Mechanism of breathing and its regulation in humans
- Exchange of gases
- Transport of gases
- Regulation of respiration
- Respiratory volume
- Disorders related to respiration - asthma, emphysema,
- Occupational respiratory disorders.

Chapter 18: 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 the circulatory system
 - Hypertension
 - Coronary artery disease
 - Angina pectoris
 - Heart failure

Chapter 19: 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 - uremia
 - Renal failure
 - Renal calculi
 - Nephritis
 - Dialysis
- Artificial kidney
- Kidney transplant.

Chapter 20: Locomotion and Movement

- Types of movement
 - Ciliary movement
 - Flagellar movement
 - Muscular movement
 - Skeletal muscle movement
 - Contractile proteins
 - Muscle contraction
- Skeletal system and its functions
- Joints
- Disorders of muscular and skeletal systems
 - Myasthenia gravis
 - Tetany
 - Muscular dystrophy
 - Arthritis
 - Osteoporosis
 - Gout.

Chapter 21: Neural Control and Coordination

- Neuron and nerves
- Nervous system in humans
 - Central nervous system
 - Peripheral nervous system
 - Visceral nervous system
- Generation and conduction of nerve impulse

Chapter 22: Chemical Coordination and Integration

- Endocrine glands and hormones
- Human endocrine system
- Hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads
- Mechanism of hormone action (elementary idea)
- The role of hormones as messengers and regulators
- Hypo - and hyperactivity-related disorders
 - Dwarfism
 - Acromegaly
 - Cretinism
 - Goiter
 - Exophthalmic goiter
 - Diabetes,
 - Addison's disease.