ANNUAL SYLLABUS (2025-26)
CLASS-XI, SUBJECT:-BIOLOGY (044)

Unit	Title	Marks
I	Diversity of Living Organisms	15
II	Structural Organization in Plants and Animals	10
III	Cell: Structure and Function	15
IV	Plant Physiology	12
V	Human Physiology	18
	TOTAL	70

Orientation and Recapitulation

Discussion on importance of biology, scope of biology and other topics of interest

Unit-I Diversity of Living Organisms.
Marks 15

Chapter-1: The Living World

Biodiversity; Need for classification; three domains of life; taxonomy and systematics; concept of speciesand taxonomicalhierarchy; binomialnomenclature.

Chapter-2: Biological Classification

Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups: Lichens, Viruses and Viroids.

Chapter-3: Plant Kingdom

Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta, Gymnospermae and Angiosperms.

Chapter-4: Animal Kingdom

Salient features and classification of animals; non-chordates upto phyla level and chordates upto Class level (Salient features and at a few examples of each category).

(No live animals or specimen should be displayed.)

Practicals (Practicals should be conducted alongside the concepts taught in theory classes.)

- Study of the parts of a compound microscope.
- Study of the specimens/slides/models and identification with reasons - Bacteria, *Oscillatoria*, *Spirogyra*, *Rhizopus*, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant, one dicotyledonous plant and one lichen.
- Virtual specimens/slides/models and identifying features of - *Amoeba*, *Hydra*, Liverfluke, *Ascaris*, Leech, Earthworm, Prawn, Silkworm, Honey bee, Snail, Starfish, Shark, Rohu, Frog, Lizard, Pigeon and Rabbit. (No live animals or specimen should be displayed.)

Unit-II Structural Organization in Plant and Animals
Marks 10

Chapter-5: Morphology of Flowering Plants

Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of 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 (digestive, circulatory, respiratory, nervous and reproductive) of frog.

Practicals (Practicals should be conducted alongside the concepts taught in theory classes.)

- Study and describe locally available common flowering plants, from family Solanaceae (Poaceae, Asteraceae or Brassicaceae can be substituted in case of particular geographical location) including dissection and display of floral whorls, anther and ovary to show number of chambers (floral formulae and floral diagrams), type of root (tap and adventitious); type of stem (herbaceous and woody); leaf (arrangement, shape, venation, simple and compound).
- Preparation and study of T.S. of dicot and monocot roots and stems (primary).
- Different types of inflorescence (cymose and racemose).

Unit-III Cell: Structure and Function,
Marks 15

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 - structure and function; endomembrane system, endoplasmic reticulum, golgi bodies, lysosomes, vacuoles; mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultra-structure and function); nucleus.

Note:-

- **The above mentioned syllabus should be completed by September 6, 2025.**
- **Revision**

❖ **Mid Term Examination, 2025**

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 and their significance

Practicals (Practicals should be conducted alongside the concepts taught in theory classes.)

- Mitosis in onion root tip cells and animal cells (grasshopper) from permanent slides
- Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.

Unit IV : Plant Physiology, Marks: 12

Chapter-11: 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-12: Respiration in Plants:

Exchange of gases; cellular respiration- glycolysis, fermentation (anaerobic), TCA cycle and Electron Transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.

Chapter-13: Plant - Growth and Development

Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA;

Practicals (Practicals should be conducted alongside the concepts taught in theory classes.)

- Study of osmosis by potato osmometer
- Study of plasmolysis in epidermal peels (e.g. *Rhoeo*/lily leaves or fleshy scale leaves of onion bulb).
- Separation of plant pigments through paper chromatography.
- Study of distribution of stomata in the upper and lower surface of leaves.
- Study of the rate of respiration in flower buds/leaf tissue and germinating seeds.
- Comparative study of the rates of transpiration in the upper and lower surfaces of leaves
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Unit – V : Human Physiology
Marks: 18

Chapter-14: Breathing and Exchange of Gases

Respiratoryorgans inanimals (recall only); Respiratorysysteminhumans; mechanismof breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disordersrelated to respiration - asthma, emphysema, occupational respiratory disorders.

Chapter-15: Body Fluids and Circulation

Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatorysystem - Structure of human heart andblood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system- hypertension, coronary artery disease, angina pectoris, heart failure.

Chapter-16: 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, kidney transplant.

Chapter-17: Locomotion and Movement

Types of movement - ciliary, flagellar, muscular; skeletal muscle, contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.

Chapter-18: Neural Control and Coordination

Neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system andvisceralnervoussystem; generationandconductionofnerveimpulse.

Chapter-19: 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); role of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goitre, exophthalmic goitre, diabetes, Addison's disease.

Note: Diseases related to all the human physiological systems to be taught in brief.

Practicals (Practicals should be conducted alongside the concepts taught in theory classes.)

- Test for presence of urea in urine.
- Test for presence of sugar in urine.
- Test for presence of albumin in urine.
- Test for presence of bile salts in urine.
- Human skeleton and different types of joints with the help of virtual images/models only.

- **Investigatory project and its submission**

Note:

- **All the syllabus should be completed by January 31, 2026.**
- **REVISION of whole syllabus for Final Practical Exam and CASE .**

For more information kindly visit to CBSE Academic:

https://cbseacademic.nic.in/web_material/CurriculumMain26/SrSec/Biology_SrSec_2025-26.pdf

- **COMMON ANNUAL SCHOOL EXAMINATION(CASE)-2026**

PRACTICALS

Time: 3 Hours **Max.Marks:30**

Evaluation Scheme	Marks
One Major Experiment Part A	5
One Minor Experiment Part A	4
Slide Preparation Part A	5
Spotting Part B	7
Practical Record + Viva Voce	4
Project Record + Viva Voce	5
Total	**30 Marks**