CBSE Class 11 Biology Updated Syllabus

CBSE Biology Class 11 Syllabus Course Structure

The table below shows the course structure and the distribution of marks in the updated CBSE Class 11 Biology Syllabus.

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

Quick Overview of CBSE Biology Class 11 Syllabus

The CBSE Biology Class 11 Syllabus provides interesting chapters and topics. It starts with the basics of living things and later into complex concepts. Check out the table below for a breakdown of what you'll be learning in each unit.

Title	Description

I - Diversity of Living Organisms	**Chapter-1: The Living World** (Biodiversity, Need for Classification, Three Domains of Life, Taxonomy & Systematics, Species Concept, Binomial Nomenclature) **Chapter-2: Biological Classification** (Five Kingdom Classification, Salient Features & Classification of Monera, Protista & Fungi, Lichens, Viruses & Viroids) **Chapter- 3: Plant Kingdom** (Classification of Plants, Salient Features of Algae, Bryophyta, Pteridophyta, Gymnospermae (Excluding Angiosperms, Plant Life Cycle & Alternation of Generations) **Chapter-4: Animal Kingdom** (Salient Features & Classification of Animals (Non-Chordates up to Phylum Level & Chordates up to Class Level)
II - Structural Organisation in Animals and Plants	**Chapter-5: Morphology of Flowering Plants** (Morphology of Root, Stem, Leaf, Inflorescence, Flower, Fruit & Seed. Description of Family Solanaceae) **Chapter-6: Anatomy of Flowering Plants** (Anatomy & Functions of Tissue Systems in Dicots & Monocots) **Chapter-7: Structural Organisation in Animals** (Morphology, Anatomy & Functions of Digestive, Circulatory, Respiratory, Nervous & Reproductive Systems of Frog)

III - Cell: Structure and Function	**Chapter-8: Cell-The Unit of Life** (Cell Theory, Prokaryotic & Eukaryotic Cells, Plant & Animal Cells, Cell Envelope, Cell Membrane, Cell Wall, Cell Organelles (Structure & Function), 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, Structure & Function of Proteins, Carbohydrates, Lipids, Nucleic Acids, Enzymes (Types, Properties, Enzyme Action) **Chapter-10: Cell Cycle and Cell Division** (Cell Cycle, Mitosis, Meiosis & their Significance)
IV-Plant Physiology	**Chapter-11: Photosynthesis in Higher Plants** (Photosynthesis as Autotrophic Nutrition, Site of Photosynthesis, Pigments Involved (Elementary Idea), Photochemical & Biosynthetic Phases, Cyclic & Non-Cyclic Photophosphorylation, Chemiosmotic Hypothesis, Photorespiration, C3 & C4 Pathways, Factors Affecting Photosynthesis) **Chapter-12: 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-13: Plant – Growth and Development (Seed Germination, Phases of Plant Growth & Plant Growth Rate, Conditions of Growth, Differentiation, Dedifferentiation & Redifferentiation, Sequence of Developmental Processes in a Plant Cell, Growth Regulators (Auxin, Gibberellin, Cytokinin, Ethylene, ABA))
V - Human Physiology	**Chapter-14: Breathing and Exchange of Gases** (Respiratory Organs in Animals (Recall Only), Respiratory System in Humans, Mechanism of Breathing & its Regulation (Gas Exchange, Transport & Regulation), Respiratory Volume, Disorders (Asthma, Emphysema, Occupational Respiratory Disorders) **Chapter-15: Body Fluids and Circulation** (Composition of Blood, Blood Groups, Coagulation, Composition of Lymph & its Function, Human Circulatory System (Structure of Heart & Blood Vessels), Cardiac Cycle, Cardiac Output, ECG, Double Circulation, Regulation of Cardiac Activity, Disorders (Hypertension, Coronary Artery Disease, Angina Pectoris, Heart Failure) **Chapter-16: Excretory Products and Their Elimination** (Modes of Excretion, Human Excretory System (Structure & Function), Urine Formation, Osmoregulation, Regulation of Kidney Function, Disorders (Uremia, Renal Failure, Renal Calculi, Nephritis), Dialysis & Artificial Kidney, Kidney Transplant) **Chapter-17: Locomotion and Movement** (Types of Movement, Skeletal Muscle, Contractile Proteins & Muscle Contraction, Skeletal System & its Functions, Joints, Disorders (Myasthenia Gravis, Tetany, Muscular Dystrophy, Arthritis, Osteoporosis, Gout)

	Chapter-18: Neural Control and Coordination (Neuron & Nerves, Nervous System (Central, Peripheral & Visceral), Generation & Conduction of Nerve Impulse) **Chapter-19: Chemical Coordination and Integration** (Endocrine Glands & Hormones, Human Endocrine System, Mechanism of Hormone Action (Elementary Idea), Role of Hormones, Disorders

Class 11 Biology Practical Syllabus

Get the latest updates about the Lab experiments! Here's the CBSE Class 11 Biology Practical Syllabus:

List of Experiments

Experiment	Description
Study of Flowering Plants	- Identify locally available flowering plants (Solanaceae preferred, substitutions allowed) - Dissect and display floral parts (whorls, anther, ovary) - Determine floral formula and diagram - Identify root type (tap/adventitious) - Identify stem type (herbaceous/woody) - Identify leaf characteristics (arrangement, shape, venation, simple/compound)
T.S. of Dicot & Monocot Roots/Stems	Prepare and study the transverse section of dicot and monocot primary roots and stems
Osmosis	Investigate osmosis using a potato osmometer

Plasmolysis	Observe plasmolysis in plant epidermal peels (e.g., Rhoeo leaves, onion bulb scales)
Stomata Distribution	Compare stomata distribution on upper and lower leaf surfaces
Transpiration Rate	Compare transpiration rates on upper and lower leaf surfaces
Biomolecule Detection	Test for sugar, starch, protein, and fat presence in plant/animal materials
Paper Chromatography	Separate plant pigments using paper chromatography
Respiration Rate	Study respiration rate in flower buds/leaf tissue/germinating seeds
Urine Analysis	- Test for urea presence in urine - Test for sugar presence in urine - Test for albumin presence in urine - Test for bile salts presence in urine

Study/observation of the following (spotting)

Study/observation of the following (spotting)
1. Study of the parts of a compound microscope.
2. 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

3. Study of virtual specimens/slides/models and identification with reasons - Amoeba, Hydra, liver fluke, Ascaris, leech, earthworm, prawn, silkworm, honeybee, snail, starfish, shark, rohu, frog, lizard, pigeon, and rabbit
4. Study of tissues and diversity in shapes and sizes of plant and animal cells (palisade cells, guard cells, parenchyma, collenchyma, sclerenchyma, xylem, phloem, squamous epithelium, muscle fibres, and mammalian blood smear) through temporary/permanent slides.
5. Study of mitosis in onion root tip cells and animal cells (grasshopper) from permanent slides
6. Study of different modifications in roots, stems, and leaves.
7. Study and identification of different types of inflorescence (cymose and racemose).

CBSE Class 11 Biology Practical Syllabus - Marking Scheme

This table explains how the 30 marks for your Class 11 Biology practical exam (lasting 3 hours) will be divided. It shows what aspects of your performance will be evaluated.

Experiments	Marks
One Major Experiment (Exp. No. 1, 3, 7, or 8)	5
One Minor Experiment (Exp. No. 6, 9, 10, 11, 12, or 13)	4
Part A: Slide Preparation (Exp. No. 2, 4, or 5)	5
Part B: Spotting	7

Part C: Practical Record & Viva Voce	4
Project Record & Viva Voce	5
Total	30

CBSE Biology Class 11 Syllabus - (044) Question Paper Design

The Central Board of Secondary Education (CBSE) has released the question paper design for the upcoming academic year. Biology exam for Class 11 (code 044). This breakdown outlines the format and types of questions you can expect for the test.

S.No.	Typology of Questions	Total Marks	% Weightage
1	Remembering (Knowledge-Based)	7	10%
2	Understanding (Comprehension)	21	30%
3	Application	21	30%
4	High Order Thinking Skills (Analysis & Synthesis)	12	17%
5	Evaluation	9	13%
Total		**70**	**100%**

Prescribed Books for Class 11 Biology

1. Biology Class-XI, Published by NCERT

2. Other related books and manuals brought out by NCERT (including multimedia).