Academic planner-2026 -2027

Class -XI Biology

Date & number of days	Topics/ Content	Assignment/ H.W	Lab activity/Practical	Interdisciplinary approach	Learning outcomes
16/4/2026 - 30/4/2026 No.of days-13	Bridge course concepts of class X & IX Biology would be revised like cell biology, physiology, tissues and life processes	Assignment containing some questions based on the topics discussed in	To study the parts of the compound microscope and its use in the biology lab	Medicine - Physiology & Genetics - cell Biology	Students will recall class IX & X concepts. .
1/5/26 - 15/5/26 No.of days-6	Chapter-1: The Living World What is living? Biodiversity; Need for classification; three domains of life; taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature.	Assignment containing NCERT and extra questions	To study the parts of the compound microscope	Geography - Distribution of species in different regions, documentation of species and endangered species.Microbiology - Study of bacteria. Protists & fungi and their diverse roles	Help Students to understand Biological Classification , concept of species and taxonomical hierarchy; binomial nomenclature

1/7/26-15/7/26 No.of days-12	Chapter-1 quick revision 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 Salient features and distinguishing features of plants into major groups - Algae, Bryophyta, Pteridophyta, Gymnospermae	Assignment containing NCERT and extra questions	Study of plant Specimens/slides/model and identifications with reasons, Bacteria, yeast, oscillatoria, spirogyra, Rhizopus, mushroom, liverwort, moss,fern, pine. One monocot, one dicot plant and lichen.	Biotechnology - Industrial use of microbes	Help students to understand Biological Classification , five kingdom classification and their Salient features
16/7/2026 - 31/7/2026 No.of days-14	Chapter-3: Plant Kingdom Salient features and distinguishing features of plants into major groups - Algae, Bryophyta, Pteridophyta, Gymnospermae	Assignment containing NCERT and extra questions	To demonstrate osmosis by potato osmometer	Medicine(Pharmacognosy) - Medicinal plants & herbal drugs Economics - Timber, fibres , oil yielding plants Environmental science afforestation, carbon sequestration and climate regulation by forests.	*Draws labelled diagrams, flow charts, concept maps *Understands process of plant reproduction in various divisions *is able to identify different plant specimens and categorise them
20 July - 25 July	UT I syllabus - Chapter 1 to 3 & half				

1/8/2026 - 15/8/2026 No.of days-11	**Chapter-4: Animal Kingdom salient features and classification of animals non-chordates up to phyla level and chordates up to chordates up to class level (three to five salient features and at least two examples of each category).**	**Assignment containing NCERT and extra questions**	**Study of virtual specimens/slides/ model and identification with reason of Amoeba ,hydra, liver fluke, honey bee, snail, ascaris, leech, earthworm, prawn, silkworm, starfish, shark, rohu(fish) frog, calotes(lizard), pigeon, and rabbit**	**Medicine-Study of parasites and vectors. Ecology - Role of animals in food chains/webs.**	***Draws labelled diagrams, flow charts, concept maps *Understands features and classification of animals non-chordates up to phyla level**
16/8/26 - 31/8/26 No.of days-11	**Chapter-5: Morphology of different flowering plants, the root, stem, leaf , inflorescence, flower, fruit, seed. Description of family Solanaceae Chapter 6: Anatomy of flowering plantsleaf , inflorescence, flower, fruit, seed. Chapter -7 Structural organisation in animals Morphology, Anatomy and functions of different systems(digestive, circulatory, respiratory, nervous and reproductive) of frog.**	**Assignment containing NCERT and extra questions**	**To Study modifications of roots, leaves and stem. Study & identify different types of inflorescences(Cymose and racemose) Preparation and study of TS of dicot and monocot roots and stems(Primary)**	**Ecology - Morhphological adaptations to habitat. Anatomy reveals adaptation to drought, aquatic life, timber quality assessment. Medicine - Identification of medicinal plant parts and detection of drugs adulteration**	***is able to make practical observation of morphology of different flowering plants, the root, stem, leaf , inflorescence *Draws labelled diagrams, flow charts, concept maps, graphs and floral diagrams & writes floral formulae in technical language based on floral diagrams * Take sections of plant material**

1/9/2026-15/9/2026 No.of days-11	Chapter- 8 Cell : The unit of life Cell theory & cell as basic unit of life, structure of prokaryotic & eukaryotic cells Plant and animal cell; cell envelope;cell membrane cell wall; the cell organelles,structure and function of endomembrane system,endoplasmic reticulum, golgi bodies, lysosomes, vacuoles mitochondria, mitochondria, plastids, ribosomes, cytoskeleton, cilia and ribosomes, plastids ,ribosomes, flagella, nucleus and types of chromosomes	Assignment containing NCERT and extra questions	Study of distribution of stomata on the upper & lower surfaces of leaf	Chemistry - Chemical nature of cell organelles like plasma membrane etc.enzymatic reactions. Physics (biophysics) - osmosis, diffusion,active transport, surface tension and fluidity in membranes. Nanotechnology- Drug delivery through cell membranes and nano carriers targeting specific cells.	*understands the contribution of various scientists and cell structure * Is able to undestand the functions of various cell organelles
16/9/26 - 30/9/26 No.of days-13	Term I examination Syllabus Chapters 1 to 8				

1/10/26-15/10/26 No.of days-11	**Chapter-9: Biomolecules Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids, enzymes, types, properties, enzyme action**	**Assignment containing NCERT and extra questions**	**To test for glucose, sucrose, starch, proteins & fats & to show their presence in suitable plant & animal materials.**	**Biochemistry-Structure of carbohydrates, proteins,lipids,nucleic acids, enzyme kinetics pH, bonding and molecular interactions**	***Draws labelled diagrams, flow charts, concept maps *Understands process of enzymatic activity *Handles laboratory tools, and apparatuses, instruments and devices properly for performing activities/ experiments/ investigations**
16/10/26 - 31/10/26 No.of days-9	**Chapter-10: Cell Cycle and Cell Division Cell cycle, mitosis, meiosis and their significance**	**Assignment containing NCERT and extra questions**	**Study of mitosis in onion root tip and animal cells from permanent slides.**	**Medicine-uncontrolled cell division & cancer Genetics - Mitosis, meiosis basis of inheritance. Agriculture-Polyploidy in crop improvement**	**Understands Cell Cycle and Cell Division , mitosis, meiosis and their significance**

1/11/26 - 15/11/26 No.of days-9	Chapter-11: Photosynthesis in Higher Plants photosynthesis as a mean 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;	Assignment containing NCERT and extra questions	To separate & study the Plant Pigments by Paper Chromatography.	Chemistry - Light and dark reactions role of chlorophyll, enzymes, ATP NADPH formation of glucose from CO2 and H2O Physics-Light absorption spectrum, wavelength	*understands photosynthesis in higher Plants * Is able to separate & study the Plant Pigments by Paper Chromatography *Analyses and interprets graphs and figures
7/12/26-14/12/26	UT II syllabus - Chapter 9, 10 &11				

16/11/26 - 30/11/26 No.of days-12	**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 Chapter 14 Breathing and exchange of gases : Breating and**	**Assignment containing NCERT and extra questions**	**To demonstrate plasmolysis & deplasmolysis in leaf peels**	**Chemistry - Glycolysis ATP generation through oxidation reactions, enzymes hormonal control of growth, flowering & fruiting, Agriculture - crop productivity and fruit ripening Environment Carbon cycle and climate link. Biotechnology - Genetic and hormonal manipulation.**	***Analyses and interprets graphs and figures such as growth versus time graphs, oxygen dissociation curve etc. * Plans and conducts investigations and experiments to arrive at and verify the facts, principles, phenomena, or to seek answers to queries on their own.**

1/12/26 - 15/12/26 No. of days - 12	**Chapter-14 Breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related 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 circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina**	**Assignment containing NCERT and extra questions**	**To compare the rate of transpiration from the upper & lower surfaces of the leaf**	**Biochemistry- Role of haemoglobin in O2 transport, pH balance via Co2 -bicarbonate system, blood ph clotting factors Physics- Diffusion of gases in alveoli pressure volume changes in lungs and ventilation mechanics , BP fluid dynamics & heart as a pressure pump. Medicine Respiratory diseases asthma & pneumonia, hypertension, heart attack ECG Oxygen therapy and ventilators & pulmonary function tests**	***Draws labelled diagrams, flow charts, concept maps *Understands causes symptoms and preventive steps of respiratory & heart diseases *is able to draw conclusions afer observing set ups**

16/12/26-31/12/26 No. of days - 13	**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 - angiotensinatrial 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**	**Assignment containing NCERT and extra questions**	**To study the rate of respiration in germinating seeds having different substances such as wheat, groundnut and gram**	**Chemistry - Actin myosin interaction , role of ATPurea formation, electrolyte & acid base balance osmoregulation, Physics & biomechanics - lever systems in bones, force ,work &movement posture & balance. Sports science/ physiotherapy Excercisen physiology, muscle fatigue & recovery. Medicine Orthopedics - Muscular disorders, arthritis & joint replacements, dialysis, & kidney transplant.**	***Draws labelled diagrams, flow charts, concept maps *Understands causes symptoms and preventive steps of diseases *is able to draw conclusions afer observing set ups**
1/1/27 - 15/1/27 No.of days-5	**WINTER BREAK**				

16/1/27 - 31/1/27 No.of days-12	**Chapter 18 Neural Control** and Coordination Neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system and visceral nervous system; generation and conduction of nerve impulse 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, goiter, exophthalmic goiter, diabetes, Addison's diseas,	Assignment containing NCERT and extra questions	To test the given sample of urine for the presence of urea, sugar, albumin & bile salts Study & identification of human bones & joints with the help of virtual images models	Chemistry - Neurotransmitters, ion exchange in nerve impulse transmission. Physics - Electrical nature of nerve impulses, action potential. Psychology Behaviour, learning, memory emotional & cognitivr functions Medicine- brain & hormonal disorders, epilepsy, neuroimaging	*Draws labelled diagrams, flow charts, concept maps *Understands causes symptoms and preventive steps of neural diseases & hormonal disorders *is able to draw conclusions afer performing tests
1/2/27 - 15/2/27 No.of days-12	Doubts and problems to be taken up	Assignment containing NCERT and extra questions	Study & description of some flowers & their parts from solanaceae		*Draws labelled diagrams, flow charts, concept maps

16/2/27 - 28/2/27 No.of days-12	**Annual Examination Syllabus Chapters 1 to 19**				
1/3/27 - 15/3/27 No.of days-11					
16/3/27 - 31/3/27 No.of days-11					