

TERMWISE SYLLABUS	
SESSION 2018-19	
CLASS-XI	
SUBJECT-BIOLOGY	
MONTH	CONTENTS
July 2018 to September 2018	Unit-I Diversity of Living Organisms
	Orientation and Recapitulation:
	Discussion on importance of biology, scope of biology and other topics of interest.
	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; tools for study of taxonomy-museums, zoological parks, herbaria, botanical gardens.
	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 classification of plants into major groups - Algae, Bryophyta, Pteridophyta, Gymnospermae and Angiospermae (three to five salient and distinguishing features and at least two examples of each category); Angiosperms - classification upto class, characteristic features and examples.
	Practical-1
	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.
	3. Study of the specimens/slides/models and identification with reasons - liverwort, moss, fern, pine, one monocotyledonous plant, one dicotyledonous plant and one lichen.
	YUVA Session: 3.2 'Choice' not 'chance', determines destiny.
	Chapter-4: Animal Kingdom
	Salient features and classification of animals non-chordates up to phyla level and chordates up to class level (three to five salient features and at least two examples of each category). .(No live animals or specimen should be displayed.)
	Unit-II Structural Organisation in Animals and Plants
	Chapter-5: Morphology of Flowering Plants
	Morphology and modifications: Internal Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed (to be dealt along with the relevant experiment of the Practical Syllabus).
Chapter-6: Anatomy of Flowering Plants: Anatomy and functions of different tissues.	
Chapter-7: Structural Organisation in Animals	
Animal tissues; Morphology, anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of an insect (cockroach). (a brief account only)	
Practical-1: Study of virtual specimens/slides/models and identification with reasons - Amoeba, Hydra, liverfluke, Ascaris, leech, earthworm, prawn, silkworm, honeybee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.	
Practical-2: Study of different modifications in roots, stems and leaves.	
Practical-3: Study and identification of different types of inflorescence (cymose and racemose).	

	<p>Practical-4: Study and description of three locally available common flowering plants, one from each of the families Solanaceae, Fabaceae and Liliaceae (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).</p>
	<p>YUVA Session 11.10- Respect and care</p>
	<p style="text-align: center;">Unit-III Cell: Structure and Function</p>
	<p>Chapter-8: Cell-The Unit of Life</p>
	<p>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 (ultrastructure and function); nucleus.</p>
	<p style="text-align: center;">REVISION OF MID TERM SYLLABUS</p>
	<p>Practical-1: Preparation and study of T.S. of dicot and monocot roots and stems (primary).</p>
	<p>Practical-2: 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 fibers and mammalian blood smear) through temporary/permanent slides.</p>
	<p>Practical-3: Study of external morphology of cockroach through virtual images/models.</p>
	<p>YUVA Session How can I be Assertive?</p>
	<p style="text-align: center;">MID TERM EXAMINATION 2018-19</p>
	<p style="text-align: center;">SECOND TERM</p>
OCTOBER 2018 TO FEBRUARY 2019	<p>Chapter-9: Biomolecules</p>
	<p>Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids; Enzymes- types, properties, enzyme action.</p>
	<p>Chapter-10: Cell Cycle and Cell Division: Cell cycle, mitosis, meiosis and their significance</p>
	<p style="text-align: center;">Unit-IV Plant Physiology</p>
	<p>Chapter-11: Transport in Plants</p>
	<p>Movement of water, gases and nutrients; cell to cell transport, diffusion, facilitated diffusion ,active transport; plant-water relations, imbibition, water potential, osmosis, plasmolysis; long distance transport of water - Absorption, apoplast, symplast, transpiration pull, root pressure and guttation;transpiration, opening and closing of stomata; Uptake and translocation of mineral nutrients -Transport of food,phloem transport,massflow hypothesis</p>
	<p>Practical-1: Study of osmosis by potato osmometer.</p>
	<p>Practical -2: Test for the presence of sugar, starch, proteins and fats. Detection in suitable plant and animal materials.</p>
	<p>Practical-3: Study of mitosis in onion root tip cells and animals cells (grasshopper) from permanent slides.</p>
	<p>Practical-4: Study of plasmolysis in epidermal peels (e.g. Rhoeo leaves).</p>
	<p>Practical 5: Observation and comments on the experimental set up for showing:</p>
	<p>a) Anaerobic respiration</p>
	<p>b) Suction due to transpiration</p>
	<p>YUVA Session No. 11.8 Hearty Kaathi Rolls!</p>

Chapter-12: Mineral Nutrition
Essential minerals, macro- and micronutrients and their role; deficiency symptoms; mineral toxicity; elementary idea of hydroponics as a method to study mineral nutrition; nitrogen metabolism, nitrogen cycle, biological nitrogen fixation.
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; C ₃ and C ₄ pathways; factors affecting photosynthesis.
Chapter-14: 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-15: 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; seed dormancy; vernalisation; photoperiodism
Practical1: Separation of plant pigments through paper chromatography.
Practical2: Comparative study of the rates of transpiration in the upper and lower surface of leaves.
Practical 3: Study of the rate of respiration in flower buds/leaf tissue and germinating seeds.
Practical 4: Observation and comments on the experimental set up for showing: a) Phototropism. b) Effect of apical bud removal
Practical 5: Study of imbibition in seeds/raisins.
Practical 6: Study of distribution of stomata in the upper and lower surface of leaves.
YUVA Session 3.6 If there was a Bomb Threat!
Chapter-16: Digestion and Absorption
Alimentary canal and digestive glands, role of digestive enzymes and gastrointestinal hormones; Peristalsis, digestion, absorption and assimilation of proteins, carbohydrates and fats; calorific values of proteins, carbohydrates and fats; egestion; nutritional and digestive disorders - PEM, indigestion, constipation, vomiting, jaundice, diarrhoea.
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 and 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 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 - uraemia, renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant.	
Practical 1: Preparation and study of T.S. of dicot and monocot roots and stems (primary).	
Practical 2: Test for presence of urea, sugar,albumin and bile salts in urine.	
Practical 3: Study of human skeleton and different types of joints with the help of virtual images/models only.	
WINTER BREAK	
Chapter-20: 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 system - 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 and visceral nervous system; generation and conduction of nerve impulse; reflex action; sensory perception; sense organs; elementary structure and functions of eye and ear	
Practical 1: Comparative study of the rates of transpiration in the upper and lower surface of leaves.(Repeat Experiment)	
Revision of Practicals	
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); role of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goiter, diabetes, Addison's disease.	
Note: Diseases related to all the human physiological systems to be taught in brief.	
REVISION: 2nd term syllabus and final practical exam.	
NOTE:	COMPLETION OF THE SYLLABUS :31ST JANUARY2019
COMMON ANNUAL SCHOOL EXAMINATION- 2019	