

KVS BENGALURU REGION



SPLIT UP SYLLABUS

SESSION 2022-23

CLASS - XI

SUBJECT – BIOLOGY (044)

KENDRIYA VIDYALAYA SANGATHAN BENGALURU REGION
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| S.N. | MONTH | CHAPTERS | TENTATIVE NO. OF PERIODS REQUIRED | TENTATIVE NO. OF WORKING DAYS | PRACTICALS |
|------|-------|---|--|--|---|
| 1 | JULY | <p><u>UNIT-I DIVERSITY IN LIVING ORGANISMS</u></p> <p>Chapter 1. The Living World: Biodiversity; Need for classification; three domains of life, taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature.</p> <p>Chapter 2. Biological Classification: Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups: Lichens, Viruses and Viroids.</p> <p>Chapter 3. Plant Kingdom: classification of plants into major groups :Salient and distinguishing features of - Algae, Bryophyta, Pteridophyta, Gymnospermae.</p> <p>Chapter 4. Animal Kingdom: Basis of classification: Salient features and classification of animals non-chordates up to phyla level and chordates up to class level (salient features and distinguishing features of a few examples of each category). (No live animals or specimen should be displayed.)</p> | 5 6 6 6 | 25 | <p>1. Study of compound Microscope</p> <p>2. Study of specimens/slides/models and identification with reasons - Bacteria, Oscillatoria, Spirogyra, Rhizopus, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant, and one dicotyledonous plant and one lichen.</p> <p>3. Study of virtual specimens/slides/models and identification with reasons Amoeba, Hydra, Liverfluke, Ascaris, leech, earthworm, prawn, silkworm, honeybee, snail, star fish, shark, rohu, frog, lizard, pigeon and rabbit.</p> |

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| 2 | AUGUST | <p><u>UNIT-II STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS</u></p> <p>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 .</p> <p>Chapter 6. Anatomy of flowering plants Anatomy and functions of tissue systems in dicots and monocots.</p> <p>Chapter 7. Structural Organisation in Animals: Morphology, anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of FROG.</p> | 10 6 6 | 23 | <p>4. 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). Types of root (Tap and Adventitious); Stem (Herbaceous and woody); Leaf (arrangement, shape, variation, simple and compound)</p> <p>5. Different types of inflorescence (cymose and racemose).</p> <p>6. Preparation and study of T.S of dicot and monocot roots and stems (primary).</p> |
| 3 | SEPTEMBER | <p><u>UNIT-III CELL STRUCTURE AND FUNCTION</u></p> <p>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, ribosomes, Golgi bodies, lysosomes, vacuoles; mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.</p> <p>Chapter 9. Biomolecules: Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids Enzymes – types, properties, enzyme</p> | 10 7 | 23 | <p>7. Mitosis in onion root tips cells and animals cells (grasshopper) from permanent slides</p> <p>8. Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.</p> |

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| | | action . Chapter 10. Cell Cycle and Cell Division: Cell cycle, mitosis, meiosis and their significance. | 6 | | |
| 4 | OCTOBER | REVISION AND HALF YEARLY EXAMINATION | | 15 | |
| 5 | NOVEMBER | <u>UNIT -IV PLANT PHYSIOLOGY</u> 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 and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient. | 10 10 | 21 | 9. Study of osmosis by potato osmometer. 10. Study of plasmolysis in epidermal peels (e.g. Rhoeo leaves or fleshy leaves of onion bulb.) 11. Study of distribution of stomata in the upper and lower surface of leaves. |
| 6 | DECEMBER | Chapter 15. Plant - Growth and Development: Seed germination , phases of plant growth , plant growth rate; conditions for growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA . <u>UNIT -V HUMAN PHYSIOLOGY</u> Chapter 17. Breathing and Exchange of Gases: Respiratory organs in animals (Recall only) Respiratory system in humans; mechanism of breathing and its | 9 | 17 | 12. Comparative study of the rates of transpiration in the upper and lower surface of leaves. 13. Separation of plant pigments through paper chromatography. 14. Study of the rate of respiration in flower buds/leaf tissue and germinating seeds. |

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| | | regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration - asthma, emphysema, occupational respiratory disorders. | 8 | | |
| 7 | JANUARY | <p>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.</p> <p>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 transplants .</p> <p>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.</p> <p>Chapter 21. Neural Control and Coordination:</p> | 6 | 24 | <p>15.. Study of human skeleton and different types of joints.(Virtual images /models only)</p> <p>16.To test the presence of urea in urine.</p> <p>17 . To test the presence of sugar in urine.</p> <p>18. To test the presence of albumin in urine.</p> <p>19.To test the presence of bile salts in urine.</p> |

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| | | Neuron and nerves; Nervous system in humans - central nervous system, peripheral nervous system and visceral nervous system . generation and conduction transmission of nerve impulse | 6 | | |
| 8 | FEBRUARY | 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 human physiological systems to be taught in brief . REVISION PRACTICAL EXAMINATION | 6 | 22 | |
| 9 | MARCH | (SESSION ENDING EXAMINATION) | | | |

Note: Teachers have to arrange periods as per the availability of time