साप्ताहिक विच्छेदित पाठ्यक्रम

मई 2024-मार्च 2025

कक्षा-11

विज्ञान संकाय

एकीकृत शैक्षणिक कैलेंडर 2024 के साथ समन्वित

सम्बंधित दस्तावेज एवं शैक्षणिक सामग्री के लिए QR कोड को SCAN करें।

झारखण्ड शैक्षिक अनुसंधान एवं प्रशिक्षण परिषद्, राँची
Jharkhand Council of Educational Research and Training, Ranchi

साप्ताहिक विच्छेदित पाठ्यक्रम

2024-25

कक्षा - 11

विज्ञान

झारखण्ड शैक्षिक अनुसंधान एवं प्रशिक्षण परिषद्, राँची
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Biology

It is mandatory to conduct practical classes (As per the Syllabus) along with the respective lessons.

Month	Week	Chapter	Topics	Practicals
May (17 days) & June (16 days)	May 1st, 2nd, 3rd, 4th & 5th (17 days)	1. The Living World	Ernst Mayr and Introduction 1.2 Diversity in the Living World 1.3 Taxonomic Categories 1.3.1 Species 1.3.2 Genus 1.3.3 Family 1.3.4 Order 1.3.5 Class 1.3.6 Pylum 1.3.7 Kingdom Summary and Exercise	1. Study parts of a compound microscope. 2. Study of the specimens and identification with reasons – Bacteria, Oscillatoria, Spirogyra, Rhizopus, mushroom. Yeast, liverwort, moss, fern, Pinus, one monocotyledon and one dicotyledon and one lichen. 3. Study of specimens and identification with reasons – Amoeba, Hydra, Liverfluke, Ascaris, leech, earthworm, prawn, silk worm, honeybee, snail, star fish, shark, rohu, frog, lizard, pigeon and rabbit.
	June 1st, 2nd, 3rd, 4th & 5th (16 days)	2. Biological Classification	Introduction 2.1 Kingdom Monera 2.1.1 Archaebacteria 2.1.2 Eubacteria 2.2 Kingdom Protista 2.2.1 Chrysophytes 2.2.2 Dinoflagellates 2.2.3 Euglenoids 2.2.4 Slime Moulds 2.2.5 Protozoans 2.3 Kingdom Fungi 2.3.1 Phycomycetes 2.3.2 Ascomycetes 2.3.3 Basidiomycetes 2.3.4 Deuteromycetes 2.4 Kingdom Plantae 2.5 Kingdom Animalia 2.6 Viruses, Viroids, Prions and Lichens Summary and Revision	
July (25 days)	1st (6 days)	3. Plant Kingdom	"Introduction 3.1 Algae 3.1.1 Chlorophyceae 3.1.2 Phaeophyceae 3.1.3 Rhodophyceae 3.2 Bryophytes 3.2.1 Liverworts 3.2.2 Mosses 3.3 Pteridophytes 3.4 Gymonsperm Summary and Exercise"	
	2nd & 3rd (10 days)	4. Animal Kingdom	Introduction 4.1 Basis of Classification 4.1.1 Levels of Organisation 4.1.2 Symmetry 4.1.3 Diploblastic and Triploblastic organisation 4.1.4 Coelom 4.1.5 Segmentation 4.1.6 Notochord 4.2 Classification of Animals 4.2.1 Phylum- Porifera 4.2.2 Phylum - Coelenterata (Cnidaria) 4.2.3 Phylum- Ctenophora 4.2.4 Phylum - Platyhelminthes 4.2.5 Phylum- Aschelminthes	

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Month	Week	Chapter	Topics	Practicals
July (25 days)	4th & 5th (9 days)	4. Animal Kingdom	4.2.6 Phylum - Annelida 4.2.7 Phylum- Arthropoda 4.2.8 Phylum - Mollusca 4.2.9 Phylum- Echinodermata 4.2.10 Phylum- Hemichordata 4.2.11 Phylum- Chordata 4.2.11.1 Class- Cyclostomata 4.2.11.2 Class-Chondrichthyes 4.2.11.3 Class-Osteichthyes 4.2.11.4 Class- Amphibia 4.2.11.5 Class- Reptilia 4.2.11.6 Class-Aves 4.2.11.7 Class-Mammalia Summary and Exercise	
August (24 days)	1st (3 days)	5. Morphology of Flowering Plants	Katherine Esau and Introduction 5.1 The Root 5.1.1 Regions of the Root 5.2 The Stem 5.3 The Leaf 5.3.1 Venation 5.3.2 Types of Leaves 5.3.3 Phyllotaxy 5.4 The Inflorescence 5.5 The Flower 5.5.1 Parts of a Flower 5.5.1.1 Calyx 5.5.1.2 Corolla 5.5.1.3 Androecium 5.5.1.4 Gynoecium	7. Study and identify different types of inflorescences.
	2nd (6 days)	5. Morphology of Flowering Plants	5.6 The Fruit 5.7 The Seed 5.7.1 Structure of Dicotyledonous Seed 5.7.2 Structure of Monocotyledonous Seed 5.8 Semi-Technical Description of a typical flowering plant 5.9 Description of Some Important Families 5.9.2 Solanaceae Summary and Exercise	8. Study and describe three common flowering plants (Solanaceae).
	3rd (5 days)	6. Anatomy of Flowering Plants	Introduction 6.2 The Tissue System 6.2.1 Epidermal Tissue System 6.2.2 The Ground Tissue System 6.2.3 The Vascular Tissue System 6.3 Anatomy of Dicotyledonous and Monocotyledonous Plants 6.3.1 Dicotyledonous Root 6.3.2 Monocotyledonous Root 6.3.3 Dicotyledonous Stem 6.3.4 Monocotyldeonous Stem 6.3.5 Dorsiventral Dicotyledonous Leaf 6.3.6 Isobilateral (Monocotyledonous) Leaf Summary and Exercise	4. Study of tissues, and diversity in shapes and sizes of plant and animal cells (e.g. palisade cells, guard cells, parenchyma, collenchyma, sclerenchyma, xylem, phloem, squamous epithelium, muscle fibres and mammalian blood smear) through temporary/ permanent slides. 9. Preparation and study of t.s dicot and monocot roots and stems (normal).

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August (24 days)	4th (5 days)	7.Structural Organisation in Animals	Introduction 7.2 Organ and Organ System 7.5 Frogs 7.5.1 Morphology 7.5.2 Anatomy Summary and Exercise	10. Study external morphology of frog through models.
		8. Cell: The Unit of Life	G N Ramchandran and Introduction 8.1 What is a Cell? 8.1 Cell Theory 8.3 An overview of Cell 8.4 Prokaryotic cells 8.4.1 Cell Envelope and its Modifications 8.4.2 Ribosomes and Inclusion Bodies 8.5 Eukaryotic cells 8.5.1 Cell Membrane 8.5.2 Cell Wall	
	5th (5 days)	8. Cell: The Unit of Life	8.5.3 Endomembrane System 8.5.3.1 The Endoplasmic Reticulum 8.5.3.2 Golgi Apparatus 8.5.3.3 Lysosomes 8.5.3.4 Vacuoles 8.5.4 Mitochondria 8.5.5 Plastids 8.5.6 Ribosomes 8.5.7 Cytoskeleton 8.5.8 Cilia and Flagella 8.5.9 Centrosome and Centriole 8.5.10 Nucleus 8.5.11 Microbodies Summary and Revision	
September (20 days)	1st & 2nd (5 days)	9. Biomolecules	Introduction 9.1 How to analyse chemical composition? 9.2 Primary and Secondary Metabolites 9.3 Biomacromolecues 9.4 Proteins 9.5 Polysaccharides	16. Test for the presence of sugar, starch, proteins and fats. Detect them in suitable plant and animal materials.
		9. Biomolecules	9.6 Nucleic Acids 9.7 Structure of Proteins 9.12 Enzymes 9.12.1 Chemical Reactions 9.12.2 How do Enzymes bring about such High Rates of chemical conversions?	
	3rd (5 days)	9. Biomolecules	9.12.3 Nature of Enzyme Action 9.12.4 Factors affecting Enzyme activity 9.12.5 Classification and Nomenclature of Enzymes 9.12.6 Co-Factors Summary and Exercise	
		10. Cell Cycle and Cell Division	Introduction 10.1 Cell Cycle 10.1.1 Phases of Cell cycle 10.2 M Phase 10.2.1 Prophase 10.2.2 Metaphase 10.2.3 Anaphase 10.2.4 Telophase 10.2.5 Cytokinesis 10.3 Significance of Mitosis	5. Study of mitosis in onion root tip cells and animal cells (grasshopper) (permanent slides).

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Biology

Month	Week	Chapter	Topics	Practicals
September (20 days)	4th (3 days)	10. Cell Cycle and Cell Division	10.4 Meiosis 10.4.1 Meiosis I 10.4.2 Meiosis II 10.5 Significance of Meiosis & Summary	
		11. Photysynthesis in Higher Plants	Introduction What de we know? Early Experiments Where does Photosynthesis takes place? How many types pigments are involved in Photosynthesis?	17. Separate plant pigments through paper chromatography.
	5th & 6 th (7 days)	11. Photysynthesis in Higher Plants	What is Light Reaction? The Electron Transport Splitting of Water Cyclic and Non Cyclic Photophosphorylation Chemiosmotic hypothesis	
		11. Photysynthesis in Higher Plants	Where are the ATP and NADPH used? The Primary Acceptor of CO2 The Calvin Cycle The C4 Pathway Photorespiration Factors Affecting Photosynthesis Light Carbon dioxide concentration Temperature Water Summary and Exercise	
October (21 days)	1st , 2nd & 3rd (12 days)	12. Respiration in Plants	Introduction Do plants breathe? Glycolysis Fermentation Aerobic Respiration Tricarboxylic Acid Cycle	18. Study rate of respiration in flower buds/leaf tissue and germinating seeds. 19. Observation and comments on the experimental set up on: (a) Anaerobic respiration.
		12. Respiration in Plants	Electron Transport System (ETS) and Oxidative phosphorylation The Respiratory balance sheet Amphibolic pathwary Respiratory Quotient Summary and Exercise	
		13. Plant Growth and Development	Introduction Growth Plant Growth Generally is Indeterminate Growth is measurable Phases of Growth Growth rates Conditions for Growth Differentiation, Dedifferentiation and Redifferentiation	

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Month	Week	Chapter	Topics	Practicals
October (21 days)	4th & 5th (9 days)	13. Plant Growth and Development	Development Plant Growth Regulators Characteristics The Discovery of Plant Growth Regulators Physiological Effects of Plant Growth Regulators Auxins Gibberellins Cytokinins Etylene Abscisic Acid Summary and Exercise	19. Observation and comments on the experimental set up on (b) Phototropism. (c) Apical bud removal.
		14. Breathing And Exchange of Gases	Introduction Respiratory Organs Human Respiratory System Mechanism of Breathing Respiratory Volumes and Capacities Exchange of Gases Transport of Gases Transport of oxygen Transport of Carbon Dioxide Regulation of Respiration Disorders of Respiratory System & Summary	
November (21 days)	1st & 2nd (5 days)	15. Body Fluids and Circulation	Introduction Blood Plasma Formed Elements Blood Groups ABO grouping Rh grouping Coagulation of Blood Lymph (Tissue fluid) Circulatory Pathways	
	3rd (5 days)	15. Body Fluids and Circulation	Human Circulatory System Cardiac Cycle Electrocardiograph (ECG) Double Circulation Regulation of Cardiac Activity Disorders of Circulatory System & Summary	22. To detect the presence of sugar in urine/blood sample.
	4rth (6 days)	16. Excretory Products and Their Elimination	Introduction Human Excretory System Urine Formation Function of the Tubules Mechanism of Concentration of The Filtrate Regulation of Kidney Function Micturition Role of Other Organs in Excretion Disorders of Excretory System Summary, Revision and Exercise	21. To test the presence of urea in urine. 23. To detect the presence of albumin in urine. 24. To detect the presence of bile salts in urine.
	5th (5 days)	17. Locomotion and Movement	Introduction Types of Movement Muscle Structure of Contractile Proteins Mechanism of Muscle Contraction Skeletal System Joints Disorders of Muscular and Skeletal System & Summary Summary, Revision and Exercise	25. To study human skeleton and different types of joints.

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Month	Week	Chapter	Topics	Practicals
December (19 days)	1st & 2nd (6 days)	18. Neural Control and Coordination	Introduction Neural System Human Neural System Neuron and Structural and Functional Unit of Neural System Generation and Conduction of Nerve Impulse Transmission of Impulses Central Nervous System Forebrain Midbrain Hindbrain Summary, Revision and Exercise	
	3rd (6 days)	19. Chemical Control and Integration	Introduction Endocrine Glands and Hormones Human Endocrine System The Hypothalamus The Pituitary Gland The Pineal Gland Thyroid Gland Parathyroid Gland	
	4th, 5th & 6th (8 days)	19. Chemical Control and Integration	Thymus Adrenal Gland Pancreas Testis Ovary Hormones of Heart, Kidney and Gastrointestinal Tract Mechanism of Hormone Action & Summary Summary, Revision and Exercise	
January (20 days) February (20 days) March (21 days) till board examination		Revision & Test		
Total Working Days - 224 Days (Tentative)				