



DELHI PUBLIC SCHOOL DHENKANAL

SESSION 2026-27

SPLIT-UP SYLLABUS FOR CLASS XI (SCIENCE)

JUNE

SUBJECT	TOPICS TO TOUGHT
ENGLISH	Hornbill • The Portrait of a Lady • A Photograph (Poem) Snapshots • The Summer of the Beautiful White Horse Reading & Writing Skills • Reading Comprehension • Classified Advertisement • Poster Writing Grammar & Language Activities • Tenses • ASL (Assessment of Speaking and Listening)
PHYSICS	Chapter-1: Units and Measurements Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. significant figures, Determining the uncertainty in result. Dimensions of physical quantities, dimensional analysis and its applications.
CHEM.	Unit I: Some Basic Concepts of Chemistry General Introduction: Importance and scope of Chemistry. Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules. Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula
MATHS	Chapter 1-Set theory Chapter 8- CELL Cell theory and cell as the basic unit of life; Structure of prokaryotic and eukaryotic cell; 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 (ultra structure and function); Nucleus –nuclear membrane, chromatin, nucleolus.
BIOLOGY	Practical- Experiment 1- Study parts of a compound microscope
COM. SC.	Unit 1: Computer system organisation 1. hardware & software 2. data representation (binary, hexadecimal, octal number system)
P. E	UNIT I: Changing Trends & Career in Physical Education • Concept, Aims & Objectives of Physical Education • Development of Physical Education in India: Post Independence • Changing Trends in Sports: Playing surface, wearable gears and sports equipment, technological advancements • Career Options in Physical Education Khelo India and Fit India Program

Continue.....

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PHYSICS	Chapter-2: Motion in a Straight Line Frame of reference, Motion in a straight line, Elementary concepts of differentiation and integration for describing motion, uniform and non- uniform motion, average speed and average velocity and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical and calculus treatment). Chapter-3: Motion in a Plane Scalar and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors, Unit vector; resolution of a vector in a plane, rectangular components, Scalar and Vector product of vectors. Motion in a plane, cases of uniform velocity and uniform acceleration- projectile motion, uniform circular motion.
CHEM.	chemical reactions, stoichiometry and calculations based on stoichiometry. Unit II: Structure of Atom : Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle concept of orbitals, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals - Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals
MATHS	Chapter -2 Relation & Function Chapter-3 Trigonometric functions

BIOLOGY	Chapter 9- BIOMOLECULES Chemical constituents of living cells: Biomolecules–structure and function of proteins, carbohydrates, lipid, nucleic acids; Enzymes–types, properties, enzyme action Chapter 10- Cell division: Cell cycle, mitosis, meiosis and their significance. Chapter 1- LIVING WORLD: What is living? Biodiversity; Need for classification; Three domain of life; Taxonomy & Systematics; Concept of species and taxonomical hierarchy; Binomial nomenclature Practical's- Experiment 2- Study of the specimens and identification with reasons- Bacteria, Oscillatoria, Spirogyra, Rhizopus, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant and one dicotyledonous plant and one lichen. Experiment 3- Study of specimens and identification with reasons- Amoeba, Hydra, Liverfluke, Ascaris, leech, earthworm, prawn, silkworm, honeybee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.
COM. SC.	1.Boolean logic (AND OR NOT XOR gates logic circuits and truth table) Unit 2: computational thinking a) problem solving (algorithm and flowcharts) 3.introduction to basics of python (interactive mode script mode, keyword, token reserve word, datatypes, operators and basic codes using operators)
P. E	UNIT II: Olympism Value Education Olympism: Concept and Olympic Values (Excellence, Friendship & Respect) • Olympic Value Education: Joy of Effort, Fair Play, Respect for Others, Pursuit of Excellence, Balance Among Body, Will & Mind • Ancient and Modern Olympics • Olympics: Symbols, Motto, Flag, Oath, and Anthem Olympic Movement Structure: IOC, NOC, IFS, Other members
AUGUST	
ENGLISH	Hornbill • We're Not Afraid to Die... If We Can All Be Together • The Laburnum Top (Poem) Snapshots • The Address Reading & Writing Skills • Note Making • Summarization • Speech Writing Grammar & Language Activities • Clauses • ASL

PHYSICS	Chapter-4: Laws of Motion Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion. Law of conservation of linear momentum and its applications. Equilibrium of concurrent forces, Static and kinetic friction, laws of friction, rolling friction, lubrication. Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road).
CHEM.	Unit III: Classification of Elements and Periodicity in Properties Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table Periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100. Unit IV: Chemical Bonding and Molecular Structure : Valence electrons, ionic bond, covalent bond, bond parameters, Lewis's structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules
MATHS	Chapter-4 Complex numbers Chapter-5 Linear inequalities
BIOLOGY	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, Bryophytes, Pteridophytes, Gymnosperm and Angiosperm (three to five salient and distinguishing features and atleast two examples of each category); Angiosperms- classification up to class, characteristic features and examples. Chapter 4- ANIMAL KINGDOM Salient features and classification of animal Practicals- Experiment 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 fibers and mammalian blood smear) through temporary/permanent slides. Experiment 5- Study of distribution of stomata in the upper and lower surface of leaves.
COM. SC.	1 Python- comment, mutable immutable datatypes, expression, user inputs, error correction 2 Flow of control (if else, for and while loop) 3 String
P. E	UNIT III: Yoga • Meaning & Importance of Yoga • Introduction to Ashtanga Yoga • Yogic Kriyas (Shat Karma) • Pranayama and its types Active Lifestyle and Stress Management through Yoga

SEPTEMBER

- ENGLISH**
- Hornbill**
- Discovering Tut: The Saga Continues
 - The Voice of the Rain (Poem)
- Snapshots**
- Mother's Day
- Reading & Writing Skills**
- Reading Comprehension
 - Debate Writing
- Grammar & Language Activities**
- Clauses
 - ASL

- PHYSICS**
- Chapter- 5:** Work, Energy and Power
Work done by a constant force and a variable force; kinetic energy, work- energy theorem, power.
Notion of potential energy, potential energy of a spring, conservative forces: non-conservative forces, motion in a vertical circle; elastic and inelastic collisions in one and two dimensions.
- Chapter-6:** System of Particles and Rotational Motion
Centre of mass of a two-particle system, momentum conservation and Centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod. Moment of a force, torque, angular momentum, law of conservation of angular momentum and its applications. Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions. Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation).

- CHEM.**
- VSEPR theory, concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea only), Hydrogen bond.
- Unit VI:** Redox Reactions : Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions.

- MATHS.**
- Chapter-6** Permutations and combinations
Chapter-7 Binomial theorem

BIOLOGY	Chapter 4- ANIMAL KINGDOM Classification of non chordates up to phyla level and chordates up to classes level (three to five salient features and at least two examples). Chapter 11- PHOTOSYNTHESIS IN HIGHER PLANTS Photosynthesis: Photosynthesis as a means of Autotrophic nutrition; Where does photosynthesis take place; How many pigments are 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 Respiration: 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. Practicals- Experiment 6- Comparative study of the rates of transpiration in the upper and lower surface of leaves. Experiment 7- Study of plasmolysis in epidermal peels (e.g. Rhoeo leaves)
COM. SC.	Python- list(function and coding using list)
	UNIT IV: Physical Education & Sports for CWSN (Children with Special Needs – Divyang) • Concept of Disability and Disorder • Types of Disability, its causes & nature (Intellectual disability, Physical disability) • Disability Etiquette • Aim & Objective of Adaptive Physical Education • Role of various professionals for children with special needs (Counsellor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist & Special Educator)
P. E	UNIT V: Physical Fitness, Health and Wellness • Meaning and Importance of Wellness, Health and Physical Fitness • Components/Dimensions of Wellness, Health and Physical Fitness • Traditional Sports & Regional Games for promoting wellness • Leadership through Physical Activity and Sports • Introduction to First Aid – PRICE

OCTOBER

ENGLISH	Hornbill • The Adventure Snapshots • Birth Reading & Writing Skills • Reading Comprehension • Classified Advertisement Grammar & Language Activities • Re-ordering of Sentences • ASL
PHYSICS	Chapter – 7: Gravitation Kepler's laws of planetary motion, universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth. Gravitational potential energy and gravitational potential, escape speed, orbital velocity of a satellite, energy of an orbiting satellite. Chapter-8: Mechanical Properties of Solids Elasticity, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear modulus of rigidity (qualitative idea only), Poisson's ratio; elastic energy. Application of elastic behavior of materials (qualitative idea only).
CHEM.	Unit V: Chemical Thermodynamics: Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics -internal energy and enthalpy, heat capacity and specific heat, measurement of ΔU and ΔH, Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction) Introduction of entropy as a state function, Gibb's energy change for spontaneous and non- spontaneous processes, criteria for equilibrium. Third law of thermodynamics (brief introduction).
MATHS	Chapter -8 Sequence & series Chapter -9 Straight Lines

BIOLOGY	Chapter 13- PLANT GROWTH AND DEVELOPMENT Plant growth and development: Seed germination; Phases of plant growth and plant growth rate; Conditions of growth; Differentiation, dedifferentiation and redifferentiation; Sequence of developmental process in a plant cell; Growth regulators–auxin, gibberellin, cytokinin, ethylene, ABA Chapter 14- BREATHING AND EXCHANGE OF GASES Breathing and Respiration: 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 volumes; 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 pectoris, Heart failure. Practicals- Experiment 8- To test the presence of urea in urine. Experiment 9- To detect the presence of sugar in urine/blood sample.
COM. SC.	Python - a) list
P. E	UNIT VI: Test, Measurement & Evaluation • Define Test, Measurement & Evaluation • Importance of Test, Measurement and Evaluation in Sports • Calculation of BMI, Waist-Hip Ratio, Skin Fold Measurement (3-site) • Somato Types (Endomorphy, Mesomorphy & Ectomorphy) Measurement of Health-related fitness
NOVEMBER	
ENGLISH	Hornbill • Childhood (Poem) Reading & Writing Skills • Reading Comprehension • Poster Writing Grammar & Language Activities • Tenses • ASL

PHYSICS	Chapter-9: Mechanical Properties of Fluids Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure. Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its simple applications (Torricelli's law and Dynamic lift). Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise. Chapter-10: Thermal Properties of Matter Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - calorimetry; change of state - latent heat capacity. Heat transfer-conduction, convection and radiation, thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law.
CHEM.	Unit VIII: Organic Chemistry -Some Basic Principles and Techniques : General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions Unit IX: Hydrocarbons : Classification of Hydrocarbons Aliphatic Hydrocarbons: Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis.
MATHS	Chapter 10 Conic sections Chapter-11 Introduction to 3D
BIOLOGY	Chapter 16- EXCRETORY PRODUCTS AND THEIR ELIMINATION 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 Chapter 17- LOCOMOTION AND MOVEMENT Types of movement – ciliary, flagellar, muscular; Skeletal muscle – contractile proteins and muscle contraction; Skeletal system and its functions (To be dealt with the relevant practical of Practical syllabus); Joints; Disorders of muscular and skeletal system- Myasthenia gravis, Tetany, Muscular dystrophy, Arthritis, Osteoporosis, Gout. 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; Reflex action Practicals- Experiment 10- To detect the presence of albumin in urine. Experiment 11- Test for the presence of sugar, starch, proteins and fats. To detect them in suitable plant and animal materials.

COM. SC.	a) Python Tuple b) Python-Dictionary
P. E	UNIT VII: Fundamentals of Anatomy, Physiology in Sports • Definition and Importance of Anatomy and Physiology in Exercise and Sports • Functions of Skeletal System, Classification of bone and types of joints • Properties and Functions of Muscles • Structure and Function of Circulatory System and Heart Structure and Function of Respiratory System
DECEMBER	
ENGLISH	Hornbill • Silk Road Reading & Writing Skills • Note Making • Summarization • Speech Writing Grammar & Language Activities • Clauses • ASL
PHYSICS	Chapter-11: Thermodynamics Thermal equilibrium and definition of temperature, zeroth law of thermodynamics, heat, work and internal energy. First law of thermodynamics, Second law of thermodynamics: Thermodynamic state variable and equation of state. Change of condition of gaseous state -isothermal, adiabatic, reversible, irreversible, and cyclic processes. Chapter-12: Kinetic Theory Equation of state of a perfect gas, work done in compressing a gas. Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.
CHEM.	Alkenes - Nomenclature, the structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition. Alkynes - Nomenclature, the structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water.

MATHS	Chapter-12 Limit & Derivatives
BIOLOGY	Chapter 19- CHEMICAL CONTROL AND COORDINATION 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 (Common disorders e.g. Dwarfism, Acromegaly, Cretinism, goiter, exophthalmic goiter, diabetes, Addison's disease). Chapter 5- MORPHOLOGY OF FLOWERING PLANTS Morphology and modifications; Practicals- Experiment 12- Preparation and study of T.S. of dicot and monocot roots and stems (primary) Experiment 13- Study of osmosis by potato osmometer
COM. SC.	1) Introduction to python module. 2) Codes using modules Unit 3: introduction to cyber crime and security
P. E	UNIT VIII: Fundamentals of Kinesiology and Biomechanics in Sports • Definition and Importance of Kinesiology and Biomechanics in Sports • Principles of Biomechanics • Kinetics and Kinematics in Sports • Types of Body Movements – Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Supination & Pronation Axis and Planes – Concept and its application in body movements
JANUARY	
ENGLISH	Hornbill • Father to Son (Poem) Snapshots • The Tale of Melon City Reading & Writing Skills • Reading Comprehension • Debate Writing Grammar & Language Activities • Re-ordering of Sentences • ASL

PHYSICS	Chapter-13: Oscillations Periodic motion - time period, frequency, displacement as a function of time, periodic functions and their applications. Simple harmonic motion (S.H.M), uniform circular motion and its equations of motion; phase; oscillations of a loaded spring- restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of expression for its time period. Chapter-14: Waves Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, Beats.
CHEM.	Unit VII: Equilibrium : Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium - Le Chatelier's principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, hydrolysis of salts (elementary idea), buffer solution, Henderson Equation, solubility product, common ion effect (with illustrative examples).
MATHS	Chapter-13 Statistics Chapter-14 Probability
BIOLOGY	Chapter 6- ANATOMY OF FLOWERING PLANTS Tissues; Anatomy and functions of different parts of flowering plants: Root, stem, leaf, inflorescence- cymose and racemose, flower, fruit and seed (To be dealt along with the relevant practical of the Practical Syllabus) Chapter 7- STRUCTURAL ORGANISATION IN ANIMALS Morphology, anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of an amphibian (frog).
COM. SC.	Unit 3 Data protection, data safety cyber law, e waste
P. E	UNIT IX: Psychology & Sports • Definition & Importance of Psychology in Physical Education & Sports • Developmental Characteristics at Different Stages of Development • Adolescent Problems & Their Management • Team Cohesion and Sports • Introduction to Psychological Attributes: Attention, Resilience, Mental Toughness UNIT X: Training and Doping in Sports • Concept and Principles of Sports Training • Training Load: Overload, Adaptation and Recovery • Warming-up & Limbering Down – Types, Method & Importance • Concept of Skill, Technique, Tactics & Strategies Concept of Doping and its Disadvantages

FEBRUARY

ENGLISH	Revision and Tests • Comprehensive Revision of Syllabus • Practice Tests and Sample Papers • Remedial and Enrichment Activities
PHYSICS	Revision and Question Practice.
CHEM.	Revision and Question Practice.
MATHS	Revision and lesson wise test
BIOLOGY	Revision and lesson wise test
COM. SC.	Revision and Question Practice.
P. E	Revision and lesson wise test