AMARCHAND SINGHVI INTERNATIONAL SCHOOL

CLASS XI SCIENCE (2024-25)

SYLLABUS BREAK UP - TERM 1

PRE MID TERM	MID TERM
English Core (301)	

Literature:
    Hornbill - The Portrait of a Lady, A Photograph
    Snapshots - The Summer of the Beautiful White Horse
R**eading**: Unseen Pasasge
    Writing: Advertisement and Speech Writing
 Grammar: Tenses
	Literature
	  Hornbill
	 1.The Portrait of a Lady, 2. We're not afraid to Die
	 3. Discovering Tut
	      Poem
	 1. A Photograph, 2. Laburnum top, 3. Voice of the Rain
	Snapshots
	 1 The Summer of a Beautiful Horse, 2. The Address
	Writing
	 Classified Advertisement and Speech Writing
	Grammar
	     Gap filling, Transformation, Reordering of the sentence
	   Reading
	Reading Comprehension, Note Making

PHYSICS (042)	
Chapter–1: Units and Measurements Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. significant figures. Dimensions of physical quantities, dimensional analysis and its applications.	**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.
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 nonuniform motion, and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical treatment).	**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–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.	**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).
	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.
	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.

CHEMISTRY (043)

Unit I: Some Basic Concepts of Chemistry	**Unit II: Structure of Atom**
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, chemical reactions, stoichiometry and calculations based on stoichiometry.	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.
Unit III: Classification of Elements and Periodicity in Properties	**Unit IV: Chemical Bonding and Molecular Structure**
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.	Valence electrons, ionic bond, covalent bond, bond parameters, Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, 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 VII: 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.

MATHEMATICS (041)

Chapter 1.	**Chapter 3 Trigonometric Functions**
Sets Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations). Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement	Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity $\sin^2 x + \cos^2 x = 1$, for all x. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing $\sin(x\pm y)$ and $\cos(x\pm y)$ in terms of sinx, siny, cosx & cosy and their simple applications. Deducing identities like the following: $\tan(x \pm y) = \dfrac{\tan x \pm \tan y}{1 \mp \tan x \tan y}$, $\cot(x \pm y) = \dfrac{\cot x \cot y \mp 1}{\cot y \pm \cot x}$ $\sin\alpha \pm \sin\beta = 2\sin\frac{1}{2}(\alpha \pm \beta)\cos\frac{1}{2}(\alpha \mp \beta)$ $\cos\alpha + \cos\beta = 2\cos\frac{1}{2}(\alpha + \beta)\cos\frac{1}{2}(\alpha - \beta)$ $\cos\alpha - \cos\beta = -2\sin\frac{1}{2}(\alpha+\beta)\sin\frac{1}{2}(\alpha-\beta)$ Identities related to sin2x, cos2x, tan2 x, sin3x, cos3x and tan3x.
Chapter 2. Relations & Functions	**Chapter 4 Complex Numbers and Quadratic Equations**
Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself (upto R x R x R).Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions, with their graphs. Sum, difference, product and quotients of functions.	Need for complex numbers, especially$\sqrt{-1}$, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane

Chapter 8 Sequence and Series Sequence and Series. Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M.	**Chapter 5 Linear inequalities** Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line.
	Chapter 6 Permutations and Combinations Fundamental principle of counting. Factorial n. (n!) Permutations and combinations, derivation of Formulae for nPr and nCr and their connections, simple applications.

BIOLOGY (044)

Chapter-1: The Living World The Living World Biodiversity; Need for classification; three domains of life; taxonomy and systematics; conceptof species and taxonomical hierarchy; binomial nomenclature	**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
Chapter-2: Biological Classification Biological Classification Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids.	**Chapter-6: Anatomy of Flowering Plants** Anatomy and functions of tissue systems in dicots and monocots.
Chapter-3: Plant Kingdom Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta, Gymnospermae (Topics excluded – Angiosperms, Plant Life Cycle and Alternation of Generations)	**Chapter-7: Structural Organisation in Animals**Morphology, Anatomy and functions of different systems (digestive, circulatory,respiratory, nervous andreproductive) of frog.

Chapter-4: Animal Kingdom
   Animal Kingdom Salient features and classification of animals, non-chordates up to phyla level and chordates upto class level (salient features and at a few examples of each category). (No live animals or specimen should be displayed.)
	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, golgi bodies, lysosomes, vacuoles, mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.

INFORMATICS PRACTICES (065)

Unit 1: Introduction to Computer System	Unit 2: Introduction to Python
Unit 1: Introduction to Computer System Introduction to computer and computing: evolution of computing devices, components of a computer system and their interconnections, Input/output devices. Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns. Software: purpose and types – system and application software, generic and specific purpose software.	**Unit 2: Introduction to Python** Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and built-in functions – len(),list(),append(),insert(), Count(),index(),remove(), pop(), reverse(), sort(), min(),max(),sum()
Unit 2: Introduction to Python Basics of Python programming, execution modes: - interactive and script mode, the structure of a program, indentation, identifiers, keywords, constants, variables, types of operator, precedence of operators, data types, mutable and immutable data types, statements, expression evaluation. comments, input and output statements, data type conversion, debugging. Control Statements: if-else, if-elif-else, while loop, for loop	

PHYSICAL EDUACTION (048)

Chapter 1- Changing Trends and Careers in Physical Education	Chapter 3- Yoga
Chapter 1- Changing Trends and Careers in Physical Education 　　　1. Concept, Aims & Objectives of Physical Education　　2.Development of Physical Education in India – Post Independence 　　　　　3. Changing Trends in Sports- playing surface, wearable gear and sports equipment, technological advancements 　　　　4. Career options in Physical Education　　　　5. Khelo-India Program and	**Chapter 3- Yoga** 　　　1. Meaning and importance of Yoga 2. Introduction to Astanga Yoga 3. Yogic Kriyas (Shat Karma) 4. Pranayama and itstypes. 5. Active Lifestyle andstress management through Yoga
Chapter 2- Olympism Value Education 　1. Olympism – Concept and Olympics Values (Excellence, Friendship & Respect) 2. Olympic Value Education – Joy of Effort, Fair Play, Respect for Others, Pursuit of Excellence, Balance Among Body, Will & Mind 3. Ancient and Modern Olympics 4. Olympics - Symbols, Motto, Flag, Oath, and Anthem 5. Olympic Movement Structure - IOC, NOC, IFS, Other members	**Chapter 4- Physical Education and Sports for Children with Special Needs** 　　　1. Concept of Disability and Disorder 　　2. Types of Disability, its causes & nature (Intellectual disability, Physical disability). 　3. Disability Etiquette 　　4. Aim and objectives of Adaptive Physical Education. 5. Role of various professionals forchildren with special needs (Counselor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist, and Special Educator
	Chapter 5- Physical Fitness, **Wellness, and Lifestyle** 　　　1. Meaning & importanceof Wellness, Health, and Physical Fitness. 2. Components/Dimensions of Wellness, Health, and Physical Fitness 3. Traditional Sports & Regional Games for promoting wellness 4. Leadership through Physical Activity and Sports　　　5. Introduction to First Aid – PRICE

FOOD NUTRITION & DIETETICS (834)	
Chapter-1: Nutritional status and Primary Health Care	Chapter 6- Nutrition during Infancy (0-1 years) and Preschool years (1-6 years)
Chapter-2: Food: Basic Concept	Chapter 7: Nutrition during Childhood and Adolescent
Chapter-3: Nutrition	Chapter 8: Nutrition during Adulthood and old age
Chapter-4: Recommended Dietary Allowances	Chapter 9: Nutrition during pregnancy and lactation
Chapter-5: Concepts of meal planning	

ENTREPRENEURSHIP (055)	
Unit 1 - Entrepreneurship Concept and Functions • Entrepreneurship – Concept, Functions and Need • Why Entrepreneurship for You • Myths about Entrepreneurship • Advantage and Limitations of Entrepreneurship • Process of Entrepreneurship • Entrepreneurship – The Indian Scenario	**Unit 2- An Entrepreneur** Why be an Entrepreneur • Types of Entrepreneurs • Competencies and characteristics • Entrepreneurial Values, Attitudes and Motivation • Intrapreneur: Meaning and Importance
Unit 6 - Business Finance and Arithmetic • Unit of Sale, Unit Price and Unit Cost - for single product or service • Types of Costs - Start up, Variable and Fixed • Break Even Analysis - for single product or service	**Unit 3: Entrepreneurship Journey** • Idea generation. • Feasibility Study and opportunity assessment • Business Plan: meaning, purpose and elements • Execution of Business Plan

HINDI CORE (302)	
आरोहः <u>गद्य खंडः</u> पाठ– 1 नमक का दारोगा – प्रेमचंद, पाठ–2 मियां नसीरुद्दीन–कृष्णा सोबती **पद्य खंडः** पाठ 2 – हम तो एक–एक करि जानां – कबीर, **वितानः** पाठ – 1 भारतीय गायिकाओं में बेजोड.ःलता मंगेशकर –कुमार गंधर्व **अभिव्यक्ति और माध्यमः** अपठित गद्यांश, अपठित पद्यांश, पाठ 1–जनसंचार माध्यम, पाठ 2–औपचारिक पत्र लेखन	**आरोहः** <u>गद्य खंडः</u> पाठ–4 विदाई संभाषण–बाल मुकुंद गुप्त, पाठ–3अपू के साथ ढाई साल–सत्यजित राय **पद्य खंडः** पद्य–मेरे तो गिरधर गोपाल दूसरो न कोई –मीराबाई, –पद्य घर की याद–भवानी प्रसाद मिश्र, पद्य–चंपा काले काले अच्छर नहीं चीन्हती–त्रिलोचन **वितानः**, पाठ2 – राजस्थान की रजत बूँदे – अनुपम मिश्र **अभिव्यक्ति और माध्यमः** अपठित गद्यांश, अपठित पद्यांश, पाठ 2–पत्रकारिता के विविध माध्यम, पाठ 2–डायरी लेखन, कथा–पटकथा