ST. NICHOLAS PUBLIC SCHOOL, GARHBETA

SYLLABUS FOR THE SESSION 2026- 27

CLASS: XI SUB:MATHEMATICS NAME OF THE TEACHER: SANTANU DAS

CHAPTER NO.	CHAPTER NAME	TOPIC	SUB TOPIC	NAME OF EXAMINATION	DIGITAL RESOURCES
1	SETS	• Introduction Sets and their Representations • The Empty Set • Finite and Infinite Sets • Equal Sets • Subsets • Universal Set • Venn Diagrams • Operations on Sets • Complement of a Set	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.	PD-I + MID-TERM + ANNUAL	https://youtu.be/F_7WUK7htRg?si=fRap_7lIE_WPvbCJ
2	RELATIONS AND FUNCTIONS	• Introduction • Cartesian Product of Sets • Relations • Functions	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 (up to R x R x R). Definition of relation, pictorial diagrams, domain, co-domain and range	PD-I + MID-TERM + ANNUAL	https://youtu.be/4VXUlNRlT3c?si=UCw5wfd1mZqpdbge

			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.		
3	**TRIGONOMETRIC FUNCTIONS**	• Introduction • Angles • Trigonometric Functions • Trigonometric Functions of Sum and Difference of Two Angles	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 $sin^2x + cos^2x = 1$, for all x. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing $sin\,(x \pm y)$ and cos	**PD-I** **+** **MID-TERM** **+** **ANNUAL**	https://youtu.be/bEfK_lJhazM?si=SPoqh1Wra5Fm_Dkz

			$(x \pm y)$ in terms of $sinx, siny, cosx\&cosy$ and their simple applications.		
4	**COMPLEX NUMBERS AND QUADRATIC EQUATIONS**	• Introduction • Complex Numbers • Algebra of Complex Numbers • The Modulus and the Conjugate of a Complex Number • Argand Plane and Polar Representation	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.	**PD-II + MID-TERM + ANNUAL**	https://youtu.be/7tu6_GH5qAw?si=GwTH75yoJ8bCDXer
5	**LINEAR INEQUALITIES**	• Introduction • Inequalities • Algebraic Solutions of Linear Inequalities in One Variable and their Graphical Representation	Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line.	**PD-II + MID-TERM + ANNUAL**	https://youtu.be/Kdcd7m0jme0?si=YQ_F4gZEQUYCh_dF
6	**PERMUTATION AND COMBINATIONS**	• Introduction • Fundamental Principle of Counting • Permutations • Combinations	Fundamental principle of counting. Factorial n. (n!) Permutations and combinations, derivation of Formulae for n Pr ,nCr and their connections, simple applications.	**PD-II + MID-TERM + ANNUAL**	https://youtu.be/Y1X_zLptX_E?si=VQom4CVZlsodf_qg
7	**BINOMIAL THEOREM**	• Introduction • Binomial Theorem for	Historical perspective,	**MID-TERM**	https://youtu.be/hxPoUsmq7Xs

		Positive Integral Indices	statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications.	+ ANNUAL	?si=iXfNCNMlb34R5Wbr
8	SEQUENCE AND SERIES	• Introduction • Sequences Series • Geometric Progression (G.P.) • Relationship Between A.M. and G.M.	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	PD-III + ANNUAL	https://youtu.be/pVX8_vNbta4?si=_oGF4rENqR4o6WAn
9	STRAIGHT LINES	• Introduction • Slope of a Line • Various Forms of the Equation of a Line • Distance of a Point From a Line	Brief recall of two-dimensional geometry from earlier classes. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point -slope form, slope-intercept form, two-point form, intercept form. Distance of a point from a line.	PD-III + ANNUAL	https://youtu.be/lRrHW6hfAiA?si=1PJ3_qyY1NSVKG0c
10	CONIC SECTIONS	• Introduction • Sections of a Cone • Circle • Parabola • Ellipse • Hyperbola	Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section.	PD-III + ANNUAL	https://youtu.be/5w2tWzcsiy4?si=gkEb2ekVWZerYfIv

			Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.		
11	**INTRODUCTION TO THREE DIMENTIONAL GEOMETRY**	• Introduction • Coordinate Axes and Coordinate Planes in Three Dimensional Space • Coordinates of a Point in Space • Distance between Two Points	Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points.	**PD-III + ANNUAL**	https://youtu.be/iTV5LP5j17s?si=I6o-t2b-GKzhPFmo
12	**LIMITS AND DERIVATIVES**	• Introduction • Intuitive Idea of Derivatives • Limits • Limits of Trigonometric Functions • Derivatives	Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition of derivative relate it to scope of tangent of the curve, derivative of sum, difference, product and quotient of functions of polynomial and trigonometric functions.	**ANNUAL**	https://youtu.be/CHWhaAlo_ms?si=lL8N2PzL5-b7tkGh

13	STATISTICS	• Introduction • Measures of Dispersion • Range • Mean Deviation • Variance and Standard Deviation	Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data.	ANNUAL	https://youtu.be/4LxrzD-MRBk?si=yGJnnCXyFHkmyrvA
14	PROBABILITY	• Event • Axiomatic Approach to Probability	Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events.	ANNUAL	https://youtu.be/5Ok1AkHBsnw?si=tRSq63dVHGJDAxBh

ST. NICHOLAS PUBLIC SCHOOL, GARHBETA

SYLLABUS FOR THE SESSION 2026- '27

CLASS: XI SUB: chemistry

NAME OF THE TEACHER: Soumi Karmakar

CHAPTER NO.	CHAPTER NAME	TOPIC	SUB TOPIC	NAME OF EXAMINATION	DIGITAL RESOURCES
1	Unit 1: Some Basic Concepts of Chemistry.	Nature of matter Chemical combinations. Dalton's atomic	General Introduction: Importance and scope of Chemistry, Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and	PD1+MT+AT	https://youtu.be/BB43j3fu1E4?si=8V_trFz3n8uiccF5

		theory. Molar mass and atomic mass.	molecules, atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.		
2	Unit 2: Structure of Atom.	Rutherford' atomic modeland it's limitations. Thomson model merits and	Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its	PD1+ MT	https://youtu.be/JC3IguOuekk?si=AGwqaTKNo9MkCCAq

		demerits. Bohr's atomic model and its limitations. Subshell and electron distribution . Debrogli's hypothesis s,p,d,f orbitals.	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,		
3	Unit 3: Classification of Elements and Periodicity in Properties.	Classification of periodic table. Modern periodic law. Ionic and atomic radii. Enthalpy, Electronegativity of elements.	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, valiancy, Nomenclature of elements with atomic number.	PD2+ MT+AT	https://youtu.be/oQjijl-n8y4?si=bSDrVnGhbMzBuUfN
4	Unit 4:	VBT , CFT -	Valence electrons,	PD2+ MT	https://youtu.

	Chemical Bonding and Molecular Structure.	Theory. Ionic , covalent and metalic bond. VSEPR Theory. Shapes and hybridizatio n of compounds .	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		be/5aNVglGW7Dc?si=0wWsJ03USnh4b50V

		Homo and Hetero nuclear molecules.	molecules (qualitative idea only), Hydrogen bond.		
5	Unit 5: Chemical Thermodynamics	First law of thermodynamics. U, G, H, S-Relationship. Different types of thermodynamical system and their equation. Work done	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,	MT+AT	https://youtu.be/NzB2YwNndZw?si=QoZ4nWp2IHfV-7PD

		by reversible and irreversible process. Spontaneity and equilibrium.	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).		
6	Unit 6: Equilibrium	Law of mass action.	Equilibrium in physical and chemical	PD3+AT	https://youtu.be/A4Ab8xZmTU4?si=f53fM

		Le chatelier principal. Factors effecting equilibrium . Ionic , covalent equilibrium . Acid base equilibrium .	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,		Mz2MR13JmOV

		Buffer solution Common ion effects.	Henderson Equation, solubility product, common ion effect (with illustrative examples).		
7	Unit 7: Redox Reactions.	Oxidation Reduction Oxidation number. Electron gain or lass by oxidation	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.	PD3+AT	https://youtu.be/X86UraGJtNk?si=HLxW6lq7pKtYoU7L

		and reduction			
8	Unit 8: Organic Chemistry – Some Basic Principles and Techniques	Quantitative and Qualitative Analysis. Classification of Organic compounds. IUPAC NOMENCLATURE	General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electrometric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent	AT	https://youtu.be/solba7r34ZM?si=cfWdXuZWv3jyiCTa

			bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.		
9	Unit 9: Hydrocarbons	Aliphatic Hydrocarbon. Alkanes, Alkenes, Alkynes - IUPAC nomenclature Properties Reactions	Aliphatic Hydrocarbons Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis.	AT	https://youtu.be/SW98bpLnRIk?si=qZx5STdzJ4WDbnBp

			Alkenes - Nomenclature, 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, 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.** **Aromatic Hydrocarbons** **Introduction, IUPAC nomenclature, benzene:**		

			resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation.		

ST. NICHOLAS PUBLIC SCHOOL, GARHBETA

SYLLABUS STRUCTURE

for

STD. XI| SESSION: 2026-27 | SUBJECT: PHYSICS| TEACHERS: SMU

CHPATER NO.	CHAPTER NAME	TOPIC	SUBTOPIC	EXAM	DIGITAL RESOURCES
PART-I					
1	Units and Measurements	• Introduction • International system of Units • Significant figures • Dimensions of physical quantities • Dimensional formulae and equations • Dimensional analysis and applications	✚ 7 fundamental quantities and their units, dimensions ✚ Rules of arithmetic operations with significant figures ✚ Rounding off uncertain digits ✚ Using dimensional analysis to find out dimension of unknown quantities ✚ Derivation of formulae using dimensional analysis ✚ Dimensional consistency of mathematical equations ✚ Numerical problems	MT + AT	https://youtu.be/8UdbJrlp47I?si=vpQRB_r9GUqs3P01
2	Motion in a Straight Line	• Introduction • Instantaneous quantities • Average values • Definition of straight line (rectilinear)	✚ Definition of instantaneous velocity, acceleration using limits ✚ Average velocity ✚ Rectilinear motion defined using the projection between acceleration and	PD-I + MT + AT	https://youtu.be/Tf_NDFEPiEQ?si=_PdlgWs-Eb7gFoSF

		motion • **Kinematics of motion** • **Equations describing the motion of a particle executing rectilinear motion** • **Uniform and non-uniform acceleration** • **Motion of particle under uniform acceleration** • **Graphical representation** • **Numerical problems**	velocity - The three fundamental equations of kinematics - Graphical method: $v-t$ graph, $s-t$ graphs. - Motion of particle under free fall - Numerical problems		
3	Motion in a Plane	• **Introduction** • **Scalar and vector quantities defined** • **Arithmetic operations of vectors** • **Component resolution of vectors** • **Vector products** • **Projectile motion** • **Uniform circular motion**	- Definition and difference between scalar and vector quantities - Resultant of a vector: Vector addition and subtraction - Resolving vectors into components along x and y axis - Dot and Cross product - Kinematics of a projectile: Time of flight, half time of flight, horizontal range, equation of motion - Uniform circular motion - Numerical problems	PD-I + MT + AT	Motion in Plane: https://youtu.be/8wA2B_5-fBc?si=eROFVQFJ5E53kEhG Vectors: https://youtu.be/d3LKALPGhZc?si=kNXOgXXZ583NjtUk
4	Laws of Motion	• **Introduction** • **Aristotle's fallacy**	- What is inertia of a mechanical body	PD-I+ MT +	Friction and Circular

		• **Law of Inertia** • **Newton's laws of motion** • **Conservation of linear momentum** • **Equilibrium of a particle** • **Circular motion**	✦ Frames of reference ✦ Inertial and non-inertial frames of reference ✦ Newton's three laws of motion: statement and mathematical expression ✦ 2nd law of motion and the measurement of force ✦ 3rd law of motion and the perception of force ✦ How 3rd law leads to the conservation of linear momentum ✦ Friction – its origin and effect on the dynamics of a body ✦ Numerical problems	AT	Motion: https://youtu.be/DxluH5eazSE?si=hh314F2uw-MLinti Laws of Motion: https://youtu.be/FAc6PUTcHCk?si=Yqur3bhc6kNWfPIW
5	Work, Energy and Power	• **Introduction** • **Mechanical energy** • **Work-Energy Theorem for constant and variable forces** • **Conservation of total mechanical energy** • **Handling variable forces** • **Definition of power** • **Collisions**	✦ Vectorial definition of work done ✦ Kinetic and Potential energy: Mechanical Energy ✦ Equivalency of Work-Energy Theorem and conservation of total mechanical energy ✦ Potential energy of a spring ✦ Rate of change of energy (Power) ✦ Collisions in 1D ad 2D	PD-II + MT + AT	https://youtu.be/dhNhg9t3Lhw?si=YbkQBRbx2j16jVf0
6	System of Particles and Rotational Motion	• **Introduction** • **Rotational quantities** • **Centre of Mass** • **Motion of center of mass**	✦ Rotational quantities and its relation to linear quantities ✦ Translational and rotational motion ✦ Precession	PD-II + MT + AT	https://youtu.be/nwV_ADaD1Dk?si=vSq_S9ubUJGI9pfy

		• **Linear momentum of a system of particles** • **Torque and angular momentum** • **Equilibrium of a rigid body** • **Moment of Inertia** • **Rotational motion about a fixed axis**	✦ Center of mass for symmetric objects ✦ Parallel and perpendicular axis theorem ✦ Conservation of angular motion ✦ Centre of gravity ✦ Moment of Inertia calculation for certain symmetric objects ✦ Work done by torque and equilibrium of bodies ✦ Numerical Problems		
7	Gravitation	• **Introduction** • **Gravitational force and gravitational field** • **Universal gravitational constant** • **Acceleration due to gravity** • **Effect of height, depth and diurnal motion of Earth on gravitational acceleration** • **Gravitational potential energy and gravitational potential** • **Kepler's laws of planetary motion** • **Energy and Stability of satellites** • **Escape velocity**	✦ Newton's law of gravity and the inverse square force model ✦ Vectorial description of gravitational force ✦ Unit and Dimension of universal gravitational constant ✦ Gravitational acceleration and its variation ✦ Gravitational potential energy and potential: definition and mathematical derivation ✦ Ubiquity of Conservation of total mechanical energy ✦ Kepler's laws: statement and mathematical description (wherever necessary) ✦ Mathematical analysis of stability of a satellite in an orbit around a planet ✦ Derivation of escape velocity (using Calculus	PD-II+MT + AT	https://youtu.be/-jJgjcF3TVI?si=QDOyh0ExfmzHb2AI

			and Work-Energy Theorem) Numerical problems		
PART-II					
8	Mechanical properties of Solids	• Introduction • Definition of Stress and Strain • Hooke's law • Elastic moduli • Application of elastic behavior	Definition and mathematical description of stress and strain Stress-Strain curve Hook's law: statement and mathematical expression Young's modulus, Bulk modulus, shear modulus Poisson's ratio Elastic potential energy in a stretched wire Numerical problems	PD-III + AT	https://youtu.be/ZwD4CoXKEUk?si=iyHGQaJ-4TWa_5hl
9	Mechanical properties of Fluids	• Introduction • Defining pressure for fluids • Streamline flow and turbulent flow • Bernoulli's theorem • Viscosity • Surface Tension	Pressure and Pascal's law Variation of pressure with depth within fluids Atmospheric pressure and gauge pressure Hydraulic machines Equation of continuity Torricelli's law Dynamic lift Coefficient of viscosity Stoke's law Terminal velocity Surface energy Adhesion and Cohesion Angle of Contact Bubbles and Drops Capillary action Numerical Problems	PD-III + AT	https://youtu.be/6aS6LcLU8hM?si=fukRk8p2Ed7Eh49k
10	Thermal Properties of Matter	• Introduction • Concept of Temperature and Heat	Introduction to understanding of temperature Thermometers and	PD-III + AT	https://youtu.be/43KARHMMW_w?si=TBqejm8

		• **Temperature scales and its mathematical foundation** • **Calorimetry** • **Thermal expansion of materials** • **Methods of heat transfer**	temperature scales: Kelvin, Celsius, Fahrenheit etc. - Calorimetry: specific heat capacity, latent heat (with mathematical expression for each) - Coefficient of thermal expansion - 1D, 2D and 3D expansion - Anomalous expansion of water - Methods of Heat Transfer: Conduction (quantitative), Convection (qualitative description) and Radiation (quantitative) - Black body radiation - Kirchhoff's law, Wien's displacement law, Stefan-Boltzmann law		DgYhfeCWM
11	Thermodynamics	• **Introduction** • **Thermal equilibrium** • **Zeroth's law of thermodynamics** • **1st law of Thermodynamics** • **Thermodynamic equation of state** • **Second law of Thermodynamics** • **Thermodynamic processes**	- Heat and Internal energy - Specific heat capacity - Reversible and irreversible processes - Quasi-static processes - Isothermal, adiabatic processes - Isobaric and Isochoric processes - Cyclic processes - Carnot's engine and refrigerator (with mathematical derivation) - Numerical problems	PD-III + AT	https://youtu.be/IECrv03wjP0?si=CBEFo6Nq-nOqcFgy
12	Kinetic Theory of Gases	• **Introduction** • **Molecular nature of matter**	- Mathematical derivation of pressure exerted on the wall of a container by a	AT	https://youtu.be/k4Fv0pHU0jo?si=

		• **Kinetic motion and temperature** • **Law of equipartition of energy** • **Theory of Ideal gases** • **Behavior of ideal gases** • **Mean free path**	gas Idea of volume of a gas Degrees of freedom Mean, RMS and Most Probable velocity of gas molecules Numerical problems		KgqCTCb6yBPMxb7H
13	Oscillation	• **Introduction** • **Oscillatory motion** • **Simple Harmonic Motion (SHM)** • **Simple Pendulum**	Introduction to the mechanics of SHM Force law Detailed analysis of SHM Time period of an SHM Mathematical equation of an SHM Kinetic, Potential and total Energy of SHM Energy Graph Numerical problems	AT	https://youtu.be/nOcEcXWPFCU?si=35D5yldTq8_FYXbR
14	Waves	• **Introduction** • **Various kind of waves** • **Principle of superposition of waves** • **Reflection of waves**	Qualitative and quantitative introduction to waves Types of waves: longitudinal and transverse waves Properties of waves: Time period, angular frequency, wavelength etc. Standing and Progressive waves Beat formation Numerical problems	AT	https://youtu.be/p3vMfyGjfcM?si=zMGdEcMtpTWLrF9D

ST. NICHOLAS PUBLIC SCHOOL, GARHBETA

SYLLABUS FOR THE SESSION 2026- '27

CLASS: XI **SUB: HPE** **NAME OF THE TEACHER: SR/SN**

Theory + Practical= 70+30= 100

Theory (70)

CHAPTER NO.	CHAPTER NAME	TOPICS	NAME OF EXAMINATION	DIGITAL RESOURCES
1	Changing Trends & Career in Physical Education	Concept, aims and objectives of physical education; development of physical education in India post-independence; changing trends in sports, playing surface, wearable gear and technology; career options; Khelo India and Fit India Program.	PD-1 + Mid-term + Annual	1. https://youtu.be/UfEG8U7ybB8?si=KFTV8b2it4HH8atL 2. https://youtu.be/UfEG8U7ybB8?si=DjvVWfwv_nNf-baX
2	Olympic Value Education	Concept, aims and objectives of physical education; development of physical education in India post-independence; changing trends in sports, playing surface, wearable gear and technology; career options; Khelo India and Fit India Program.[	PD-1 + Mid-term + Annual	1. https://youtu.be/uU-cOqYabgg?si=WHvKUSiwbevUVxJT

3	Yoga	Meaning and importance of yoga; introduction to Astanga Yoga; yogic kriyas (Shat Karma); pranayama and its types; active lifestyle and stress management through yoga.	PD-1 + Mid-term + Annual	1. https://youtu.be/dtdXiXWy050?si=9qLNmqtdm5AtThvr
4	Physical Education & Sports for CWSN	Concept of disability and disorder; types of disability, causes and nature; disability etiquette; aims and objectives of adaptive physical education; role of professionals for children with special needs.[2]	PD-2 + Mid-term + Annual	1. https://youtu.be/IHWTyODINVQ?si=94vHn1SZGRNOQnCb
5	Physical Fitness, Wellness	Meaning and importance of wellness, health and physical fitness; components of wellness and fitness; traditional sports and regional games; leadership through physical activity and sports; first aid and PRICE	PD-2 + Mid-term + Annual	1. https://youtu.be/9K71r2XfYX4?si=gFf24U_sSvB-1xe3
6	Test, Measurements & Evaluation	Definitions and importance of test, measurement and evaluation; calculation of BMI, waist-hip ratio and 3-site skinfold; somatotypes; measurements of health-related fitness.	PD-2 +Mid-term + Annual	1. https://youtu.be/VBbSrESrEpA?si=0YsjrOJZ2zcZRr_i
7	Fundamentals of Anatomy and Physiology in	Definition and importance of anatomy and physiology; skeletal system, bones and	PD-3 + Annual	1. https://youtu.be/zCnufAv1ktw?si=yZWa8vswodq-7-_b

	Sports	joints; properties and functions of muscles; circulatory system and heart; respiratory system		
8	Fundamentals of Kinesiology and Biomechanics in Sports	Definition and importance of kinesiology and biomechanics; principles of biomechanics; kinetics and kinematics; body movements; axis and planes and their application.	PD-3 + Annual	1. https://www.youtube.com/live/ONdXDQwliqA?si=xK9jX8J65Zq96qzl
9	Psychology and Sports	Definition and importance of psychology in sports; developmental characteristics; adolescent problems and management; team cohesion; psychological attributes such as attention, resilience and mental toughness.	PD-3 + Annual	1. https://youtu.be/iy3ztalxt5s?si=BtR7-Fj4BnknMHIB
10	Training & Doping in Sports	Concept and principles of sports training; training load, overload, adaptation and recovery; warming up and limbering down; skill, technique, tactics and strategies; concept of doping and its disadvantages	Annual +Annual	1. https://youtu.be/uQ51JiDwNWs?si=2qPNJroRCAkscoSb

Internal Assessment (Practical)-30

component	marks
Physical Fitness Test: SAI Khelo India Test / Brockport Physical Fitness Test	6
Proficiency in Games and Sports	7
Yogic Practices	7
Record File	5
Viva Voce	5
Total	30

ST. NICHOLAS PUBLIC SCHOOL, GARHBETA

SYLLABUS FOR THE SESSION 2026- '27

CLASS: XI SUB: BIOLOGY NAME OF THE TEACHER: SL

CHAPTER NO.	CHAPTER NAME	TOPIC	SUB TOPIC	NAME OF EXAMINATION	DIGITAL RESOURCES
1	Unit I: Diversity of Living Organisms	Chapter 1: The Living World. Chapter 2: Biological Classification. Chapter 3: Plant Kingdom. Chapter 4: Animal Kingdom.	Basic definition of life, taxonomy Five-kingdom system, Monera, Protista, Fungi, Viruses. Classification, Algae, Bryophytes, Pteridophytes. on-chordates and chordates classification)	PDI+ MT+ AT (CH. 1 + CH. 2) PD2+MT+AT (CH. 3 + CH. 4)	Living World: https://youtu.be/Z7sJjW0fpYo?si=8jahH_uEk29txxoV Biological classification: https://youtu.be/8otprppDQr8?si=brCjwpRMMuuT3cjB
2	Unit II: Structural	Chapter 5: Morphology	Root, stem, leaf, flower, fruit	PD2+	Structural organization is

	Organization in Plants and Animals	of Flowering Plants. Chapter 6: Anatomy of Flowering Plants. Chapter 7: Structural Organisation.	structure. Tissues, tissue systems, dicot/monocot anatomy. Animal tissues, anatomy of frog.	MT+AT (CH. 5 + CH. 6) PD2+MT (CH. 5 + CH. 6) MT+AT (CH. 7)	Animals: https://youtu.be/oTUBhbGDOzQ?si=OS5-yQQwrrOTglK3 Structural organization in plants: https://youtu.be/RQQ8z8-sGCk?si=4B5IzP42FwrIlMjY
3	Unit III: Cell: Structure and Function	Chapter 8: Cell The Unit of Life. Chapter 9: Biomolecules. Chapter 10: Cell Cycle and Cell Division.	Prokaryotic/eukaryotic cells, cell organelles. Proteins, carbohydrates, lipids, enzymes. Mitosis, meiosis.	PD3+AT (CH. 8 + CH. 9 + CH. 10)	https://youtu.be/hTBA-pQqctQ?si=_TX_52mqYph4yx-F
4	Unit IV: Plant Physiology	Chapter 11: Photosynthesis in Higher	Light/dark reactions. Glycolysis,	AT	https://www.youtube.com/live/vAkC-HkEql4?si=XNLmb

		Plants. Chapter 12: Respiration in Plants. Chapter 13: Plant Growth and Development	Krebs cycle. Growth regulators, photoperiodism .		0J7YM9As307
5	Unit V: Human Physiology	Chapter 14: Breathing and Exchange of Gases. Chapter 15: Body Fluids and Circulation. Chapter 16: Excretory Products. Chapter 17: Locomotion and Movement. Chapter 18: Neural Control and coordination.	Blood, heart structure. Human excretory system, urine formation. Neuron, CNS, PNS . Endocrine system.	MT+AT AT AT	https://youtube.com/playlist?list=PLbNSDQtN6Di5i4d5XHZndH2hELsxlrZVW&si=L82ul3lpCPlwcgis

		Chapter 19: Chemical Coordination and integration.		**AT**	

ST. NICHOLAS PUBLIC SCHOOL, GARHBETA

SYLLABUS FOR THE SESSION 2026- '27

CLASS: XI SUB: ARTIFICIAL INTELLIGENCE

NAME OF THE TEACHER: SUMANA MANDAL & SUVAS LOHAR

EMPLOYABILITY SKILLS					
CHAPTER NO.	CHAPTER NAME	TOPIC	SUB TOPIC	NAME OF EXAMINATION	DIGITAL RESOURCES
1	Communication Skills – III	• Introduction to Communication Skills • Verbal Communication • Non-Verbal Communication • Listening Skills • Effective Communication Techniques • Communication in Workplace	Types of Communication (Formal & Informal) Verbal & Non-Verbal Communication Presentation Skills Public Speaking Skills Group Discussion Skills Interview	PD-I+MT+AT	https://youtu.be/UycRq4reWR8?si=BP4-rOqndiShjmKR

			Skills Workplace Communication Email & Business Letter Writing Communication Etiquette		
2	Self-Management Skills – III	• Introduction to Self-Management • Self-Awareness • Time Management • Stress Management • Self-Motivation • Goal Setting	Self-Awareness Personality Development Stress Management Techniques Time Management Matrix Goal Setting (SMART Goals) Emotional Intelligence Positive Thinking Adaptability	PD-I+MT+AT	https://youtu.be/UycRq4reWR8?si=BP4-rOqndiShjmKR

			& Resilience		
3	ICT Skills – III	• Introduction to ICT • Digital Devices and Applications • File Management and Organization • Internet Safety and Cyber Security • Digital Communication (Email, Online Tools) • Basic ICT Tools and Services	▯ Advanced Digital Documentation ▯ Advanced Spreadsheets (Formulas, Charts) ▯ Database Basics ▯ Cyber Safety & Cyber Security ▯ Cloud Computing Basics ▯ Digital Collaboration Tools ▯ Online Research Skills ▯ Data Protection & Privacy	PD-II+MT+AT	https://youtu.be/UycRq4reWR8?si=BP4-rOqndiShjmKR
4	Entrepreneurial Skills – III	• Introduction to Entrepreneurship • Characteristics	▯ Entrepreneurship vs	PD-III+AT	https://youtu.be/UycRq4reWR8?si=BP4-

		of an Entrepreneur • Business Opportunity Identification • Business Planning • Risk Management • Role of Entrepreneurship in Economy	Employment □ Qualities of Successful Entrepreneurs □ Business Opportunity Identification □ Market Survey □ Business Plan Components □ Sources of Finance □ Marketing Strategies □ Cost & Profit Calculation □ Startup Ecosystem in India		rOqndiShjmKR .
5	Green Skills – III	• Introduction to Green Skills • Environment and Sustainable Development • Natural Resources	□ Sustainable Development Goals (SDGs) □ Green Jobs & Green Economy □	AT	https://youtu.be/UycRq4reWR8?si=BP4-rOqndiShjmKR

		Conservation • Climate Change and Global Warming • Green Economy and Green Jobs • Waste Management and Recycling	Environmental Laws & Policies □ Waste Management Techniques □ Energy Conservation □ Climate Change & Global Warming □ Sustainable Business Practices □ Role of Youth in Sustainability		
SUBJECT SPECIFIC SKILLS					
1	Introduction: Artificial Intelligence for Everyone	• What is Artificial Intelligence • AI Around Us • Domains of Artificial Intelligence • AI vs Human Intelligence • Types of Artificial Intelligence • Applications of AI • Advantages and Disadvantages of AI • Ethical Issues in AI	□ What is Artificial Intelligence? □ History of AI □ AI vs ML vs Deep Learning □ Applications of AI □ AI Around Us □ AI Project	PD-I+MT+AT	https://youtu.be/YW4pQd7qM-8?si=f4Wgy-zHXaJ4gBrf

		• Future of Artificial Intelligence • AI Project Cycle (Basic Introduction)	Cycle □ Types of AI (ANI, AGI, ASI)		
2	Unlocking your Future in AI	• Introduction to Careers in AI • Skills Required for AI Careers • Educational Pathways in AI • Popular Job Roles in AI • Industries Using AI • Tools and Technologies in AI • Emerging Trends in AI • Ethical and Social Impact of AI • Career Planning in AI • Future Opportunities in AI	□ Career Opportunities in AI □ Skills Required in AI □ AI in Different Industries □ Emerging AI Technologies □ AI Certifications & Courses □ Higher Education Pathways □ Role of AI in Future Jobs	PD-I+MT+AT	https://youtu.be/YW4pQd7qM-8?si=f4Wgy-zHXaJ4gBrf
3	Python Programming	• Introduction to Python • Setting up Python Environment • Basic Syntax	□ Introduction to Python □ Features of Python □ Variables &	PD-I+PD-II+MT+AT	https://youtu.be/_THZPWigk1Y?si=UdTd1YpGfUGzvLN4

		and Structure • Variables and Data Types • Operators in Python • Control Statements • Input and Output Functions • Data Structures in Python • Functions in Python • Introduction to Libraries (Basic)	Data Types □ Operators □ Conditional Statements □ Loops □ Strings □ Lists □ Tuples □ Dictionaries □ Functions □ Modules □ File Handling □ Basic Programs & Problem Solving		
4	Introduction to Capstone Project	• What is a Capstone Project • Project Identification • Research and Data Collection • Project Planning • Implementation (Execution)	□ What is a Capstone Project? □ Problem Identification □ Project Planning □ Data Collection	AT	https://youtu.be/_THZPWigkIY?si=UdTdIYpGfUGzvLN4

		• Evaluation and Presentation	Methods □ Data Analysis □ Model Development □ Testing & Validation □ Documentation & Presentation □ Report Writing		
5	Data Literacy – Data Collection to Data Analysis	• Introduction to Data Literacy • Data Collection • Data Cleaning • Data Organization • Data Analysis • Data Visualization	□ Types of Data (Structured & Unstructured) □ Primary & Secondary Data □ Data Collection Methods (Survey, Observation, Interview) □ Data Cleaning □ Data Visualization □ Measures of	PD-II+MT+AT	https://youtu.be/YW4pQd7qM-8?si=f4Wgy-zHXaJ4gBrf

			Central Tendency (Mean, Median, Mode) □ Data Interpretation □ Bias in Data □ Importance of Data in AI		
6	Machine Learning Algorithms	• Introduction toMachine Learning • Types of Machine Learning • Data and Features • Common Machine Learning Algorithms • Model Training and Evaluation • Applications of Machine Learning	□ Introduction to Machine Learning □ Types of ML: • Supervised Learning • Unsupervised Learning • Reinforcement Learning □ Classification Algorithms □ Regression Algorithms □ Clustering Algorithms	PD-II+MT+AT	https://youtu.be/YW4pQd7qM-8?si=f4Wgy-zHXaJ4gBrf

			▯ Training & Testing Data ▯ Overfitting & Underfitting ▯ Model Evaluation Basics		
7	Leveraging Linguistics and Computer Science	• Introduction • Natural Language Processing (NLP) • Components of Language • Applications of NLP • Challenges in Language Processing • Future Scope of NLP	▯ Introduction to NLP ▯ Basics of Linguistics ▯ Syntax & Semantics ▯ Text Processing ▯ Tokenization ▯ Chatbots ▯ Sentiment Analysis ▯ Speech Recognition ▯ Machine Translation	PD-III+AT	https://youtu.be/YW4pQd7qM-8?si=f4Wgy-zHXaJ4gBrf
8	AI Ethics and Values	• Introduction • Privacy and Data Protection	▯ Responsible AI	PD-III+AT	https://youtu.be/YW4pQd7qM-8?si=f4Wgy-

		• Bias and Fairness • Accountability and Responsibility • Social Impact of AI • Responsible Use of AI	Bias in AI Fairness & Transparency Accountability Privacy & Data Protection AI & Society Ethical Decision Making AI Regulations & Policies Human-Centered AI		zHXaJ4gBrf

ST. NICHOLAS PUBLIC SCHOOL, GARHBETA

SYLLABUS FOR THE SESSION 2026- '27

CLASS: 11 SUB: English

NAME OF THE TEACHER: Jayashree Palmal

CHAPTER NO.	CHAPTER NAME	TOPIC	SUB TOPIC	NAME OF EXAMINATION	DIGITAL RESOURCES
	HORNBILL 1) The portrait of a lady 2)A Photograph	1) theme of family respect and wisdom of old age 2) explores the theme of family love ,time and change, sacrifices and the experiences of elders	Inside question textual grammar and vocabulary	P D 1, M T and Pre Board	1)https://youtu.be/NoK4h6ovl-A?si=FQmr_znmS_y9jrB9 2)https://youtu.be/g9IZ3TV4UC8?si=Jw2ondxR2MUf7tTJ

	3) the laburnum top 4) The voice of the rain SNAPSHOTS 5) the summer of the beautiful white horse	3) observation of nature and appreciation of energy innocence and freedom in all living beings 4) interconnectedness of all beings and personification of natural elements 5) childhood innocence and adventure and cultural heritage and Pride			3)https://youtu.be/R6nBT2SSfs0?si=E1vSo74_HXhOdNO4 4)https://youtu.be/Y4HrfwihKYM?si=HPffS4skC6zsBNoe 5)https://youtu.be/5syylm7vr0M?si=FZa2c9h7Idux

					fdVe
	HORNBILL 6)We are not afraid to die...if we can be together 7) Discovering Tut 8) Childhood SNAPSHOTS 9) The Address	6) story of courage and resilience 7) exploring Tutenkhamun's Tomb 8) exploring the themes of loss of innocence 9) themes of loss and memory and	Inside question textual grammar and vocabulary	P D 2 and M T and Pre Board	6)https://youtu.be/lrUa6TRGL44?si=eyqCKuRkUEfne2eE 7)https://youtu.be/0cY38DmmzeE?si=JIBhThgwyvT9VqSo 8)https://youtu.be/qkVra0gBtW4?si=8leH39JwVjRGP6FM

		the powerful impact of war			9)https://youtu.be/fV0HYZD-ezM?si=d8gAncBGhhvG9vHZ
	HORNBILL 10) The Adventure 11) Father to son 12) Silk Road	10) themes of m ystery and risk 11) understanding the communication gap between generationd 12) exploring resilience faith and the importance of positive thinking	Inside question textual grammar and vocabulary	P D 3 and Pre Board	10)https://youtu.be/456gh3O7ov4?si=jEoTR9Wz1kn5q97r 11)https://youtu.be/huwmh1EJpN0?si=UJV73uOdSwKAvtjj 12)https://youtu.be

	SNAPSHOTS 13) Mother's day 14)Birth	13) understanding the misery of a mother and a housewife 14) understanding the complexities of medical practices and ethical dilemmas of a doctor 15) importance of language and cultural identity			/qdUeyfF3Kbw?si=J5jdycGNZZhhzsJB 13)https://youtu.be/WQqBo55E1UU?si=Jsui4PTTNjU32lhq 14)https://youtu.be/8O7tp-FWxIw?si=Mzp1loFOA8wZGPt5 15)https://youtu.be/bSUp338R3vk?si=dfBFaJKAZu

	15) the tale of a melon city				2yspNz
	All Grammars Editing Gap filling Sentence re ordering Tenses Active and passive voice Direct and indirect speech clauses		Grammar and Writing skills		

	Determiners **Preposition**				
	Unseen Passage **Unseen case based Factual passage** **Advertisement** **Posters**	**Understanding of the given chapters**	**Understanding interpreting and improving reading and writing skills**	**P D 1 and M T and Pre Board**	
	All Grammars **Editing** **Gap filling** **Sentence re ordering** **Tenses**	**Understanding of the given chapters**	**Understanding interpreting and improving reading and writing skills**	**P D 2 and M T and Pre Board**	

	Active and passive voice **Direct and indirect speech clauses** **Determiners** **Preposition** **Unseen Passage** **Unseen case based Factual passage** **Speech writing**				
	All Grammars **Editing** **Gap filling** **Sentence re ordering** **Tenses**	**Understanding of the given chapters**	**Understanding interpreting and improving reading and writing skills**	**M T and Pre Board**	

	Active and passive voice **Direct and indirect speech clauses** **Determiners** **Preposition** **Unseen Passage** **Unseen case based Factual passage** **Debate writing**				
	All Grammars **Editing** **Gap filling** **Sentence re ordering** **Tenses** **Active and**	**Understanding of the given chapters**	**Understanding interpreting and improving reading and writing skills**	**P D 3 and Pre Board**	

	passive voice **Direct and indirect speech** **Clauses** **Determiners** **Preposition** **Unseen Passage** **Unseen case based Factual passage** **Note Making** **Summary**				