CLASS

XI

DELHI PUBLIC SCHOOL

DURGAPUR

SYLLABUS

English *Session: 2021-22*

Month	Month/ Unit	Reading	Writing	Grammar	Literature
May	1	Comprehension from factual and discursive passages	1. Note making and Summary writing from passage given	Do as directed	The Portrait of a Lady, The Photograph (Poem)
			2. Notice writing	Agreement of subject and verb	We're not afraid to die
June	2			Tenses	
		Listening		Tenses and usage/ gap filling exercise	The Summer of the Beautiful White Horse (Snapshots)
		Speaking		Change of voice Determiners	
July	UT1				
July	3	Vocabulary	1.Composition on argumentative topic	Re-ordering of sentences/ transformation of sentences	The Address
		Identifying words from a passage	2. Poster Making, Narrative		
	4	Listening / Speaking	Writing a report on any event or incident	Integrated Exercises	Discovering Tut
					The Laburnum Top (poem), Ranga's Marriage
August	5	Summarizing	Letter writing	Error Correction	The Browning version
			Rules of formal letter writing		
			Official/Business Letters		Landscape of the Soul
		Conversation Skills	Letter to the Principal	Phrases- Adjective, Adverb, Noun	Albert Einstein at School
			Letter to the Editor, Debate / Speech		The Ailing Planet The Voice of the Rain (Poem)

English *Session: 2021-22*

contd.

Month	Month/ Unit	Reading	Writing	Grammar	Literature
September	**Revision and Block Test I**				
October	6	Subtitling	Report Writing for a magazine	Clauses	Father to Son (Poem)
November	7	Conversation Skills	Poster	Exercises on identification of clauses	Childhood (Poem)
			Article Writing		
		Listening Comprehension	Advertisement		Mother's Day
					Birth
					Silk Road
November & December	**UT2**				
December	8	Listening/ Speaking	Writing a CV	Modals Using the correct verb in sentences	The Adventure
					The Ghat of the Only World
January	**UT3**				
January	9	Note Making	Article for a newspaper	Editing / cloze passage	The Tale of a Melon City (Poem)
		Summarizing			
	Revision				
February	**Block Test II**				

Physics *Session: 2021-22*

Month	Chapter	Topics	Sub Topics
May	II	Measurement and units	Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. Length, mass and time measurements; accuracy and precision of measuring instruments; errors in measurement; significant figures. Dimensions of physical quantities, dimensional analysis and its applications
		Calculus	Elementary Differential and integral calculus
June	III	Motion in a Straight line	Frame of reference. Motion in a straight line: Po- sition-time graph, speed and velocity. Uniform and non-uniform motion, average speed and instanta- neous velocity.
			Uniformly accelerated motion, velocity-time, posi- tion-time graphs, relations for uniformly accelerat- ed motion (graphical treatment).
	IV	Motion in a Plane	Scalar and vector quantities: Position and dis- placement vectors, general vectors and notation, equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors. Relative velocity.
			Unit vector; Resolution of a vector in a plane - rect- angular components. Motion in a plane. Cases of uniform velocity and uniform acceleration-projec- tile motion. Uniform circular motion
July	V	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 mo- tion. Law of conservation of linear momentum and its applications.
			Equilibrium of concurrent forces. Static and kinetic friction, laws of friction, rolling friction.
			Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on level circular road, vehicle on banked road).
UT I			

Physics *Session: 2021-22*

contd.

Month	Chapter	Topics	Sub Topics
July	VI	Work, Energy and Power	Work done by a constant force and a variable force; kinetic energy, work energy theorem, pow- er.Notion of potential energy, potential energy of a spring, conservative forces: conservation of me- chanical energy (kinetic and potential energies); non-conservative forces: elastic and inelastic colli- sions in one and two
	VII	System of Particles (1)	Centre of mass of a two-particle system, mo- mentum conversation and centre of mass motion. Centre of mass of a rigid body; centre of mass of uniform rod.
August	VII	System of Particles and Rotational Motion (2)	Moment of a force, torque, angular momentum, conservation of angular momentum with some examples.
			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). State- ment of parallel and perpendicular axes theorems and their applications
	VIII	Gravitation	Keplar's laws of planetary motion. The universal law of gravitation.
			Acceleration due to gravity and its variation with altitude and depth.
			Gravitational potential energy; gravitational poten- tial. Escape velocity. Orbital velocity of a satellite.
	Block Test 1		
September	IX	Mechanical Properties of Solid	Elastic behavior, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear, mod- ulus of rigidity.
October	X	Mechanical Properties of Fluid	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, Reynold's number, streamline and turbulent flow. Bernoulli's theorem and its applications.
			Surface energy and surface tension, angle of con- tact, application of surface tension ideas to drops, bubbles and capillary rise.

Physics *Session: 2021-22*

contd.

Month	Chapter	Topics	Sub Topics
November	XI	Thermal Properties of matter	Heat, temperature, thermal expansion; anamalous expansion of water, specific heat capacity- calorimetry; change of state - latent heat. Heat transfer-conduction, convection and radiation, thermal conductivity, Newton's law of cooling. Qualitative ideas of black body radiation, Wein's displacement law, Stefan's law, Greenhouse effect.
UT II			
December	XII	Thermodynamics	Thermal equilibrium and definition of temperature (zeroth law of thermodynamics). Heat, work and internal energy. First law of thermodynamics. Isothermal and Adiabatic processes. Second law of thermodynamics: reversible and irreversible processes. Heat engines and refrigerators.
	XIII	Kinetic Theory Of Gas	Equation of state of a perfect gas,work done on 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 equipartition of energy (statement only) and application to specific heats of gases; concept of mean free path, Avogadro's number
UT III			
January	XIV	Oscillations	Periodic motion - period, frequency, displacement as a function of time. Periodic functions. Simple harmonic motion (S.H.M) and its equation; phase; oscillations of a spring-restoring force and force constant; energy in S.H.M.-kinetic and potential energies; simple pendulum-derivation of expres- sion for its time period; free, forced and damped oscillations (qualitative ideas only), resonance.
	XV	Waves	Wave motion. Longitudinal and transverse waves, speed of wave motion. 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, Doppler effect.
Revision			
Block Test 2			

Chemistry *Session: 2021-22*

Month	Unit	Chapter	Contents
May	1	Some Basic Concepts of Chemistry	• Importance and scope of chemistry, nature of matter, • laws of chemical combination, Nature of matter, 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 reactions, • Concept of oxidation and reduction, redox, oxidation number, • balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number.
June	2	Structure of Atom	• Discovery of electrons , proton , neutron, atomic number, isotopes, isobars • Thomson model, limitation, Rutherford model, limitation • 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 dorbitals • 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.
July	**Unit Test-1**		
July	3	Classification of Elements and Periodicity in Properties	• Significance of classification, brief history of 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

Chemistry *Session: 2021-22*

contd.

Month	Unit	Chapter	Contents
July	4	Chemical Bonding and Molecular structure	• Valence electrons, ionic bond, covalent bond, bond parameters, Lewis structure • polar character of covalent bond, covalent charac- ter 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."
August	5	States of Matter	Three states of matter, intermolecular interactions, types of bonding, melting and boiling points, role of gas laws in elucidating the concept of the molecule • Boyle's law, Charles law, Gay Lussac's law, Avogadro's law, ideal behaviour, empirical derivation of gas equation, Avogadro's number, ideal gas equation. • Deviation from ideal behaviour • liquefaction of gases, critical temperature, kinetic energy and molecular speeds (elementary idea) • Liquid State: vapour pressure, viscosity and surface tension (qualitative idea only, no mathematical derivations)
August	9	HYDROGEN	• Position of hydrogen in periodic table, occurrence, isotopes, • preparation, properties and uses of hydrogen, • hydrides-ionic covalent and interstitial; • physical and chemical properties of water, heavy water, hydrogen peroxide -preparation, reactions and structure and use; hydrogen as a fuel.
	6	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.
September	**Revision and BT-1**		
October	6	Thermodynamics	• 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).

Chemistry *Session: 2021-22*

contd.

Month	Unit	Chapter	Contents
November	7	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 • Henderson Equation, hydrolysis of salts (elementary idea), buffer solution, solubility product, common ion effect (with illustrative examples).
November	12	Organic Chemistry - Some Basic Principles and Techniques.	Classification and IUPAC nomenclature of organic compounds. Isomerism .
December	**Unit Test-2**		
December	12	Organic Chemistry - Some Basic Princi- ples and Techniques. (continued)	• 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.
January	13	Hydrocarbons	• Alkanes - Nomenclature, isomerism, conformation (ethane only), • physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis. • Alkenes - Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation • chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markownikov'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.

Chemistry *Session: 2021-22*

contd.

Month	Unit	Chapter	Contents
January	13	Hydrocarbons	• Aromatic Hydrocarbons: Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, • chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, • directive influence of functional group in monosubstituted benzene. Carcinogenicity and toxicity.
January	8	Redox Reactions	• Electrochemical cells • applications of redox reactions.
January	**Unit Test -3**		
January	10	S-Block Elements (Alkali and Alkaline Earth Metals)	Group 1 and Group 2 Elements :-General introduction, electronic configuration, occurrence, anomalous properties of the first element of each group, diagonal relationship, • trends in the variation of properties (such as ionization enthalpy, atomic and ionic radii), trends in chemical reactivity with oxygen, water, hydrogen and halogens, uses. • Preparation and Properties of Some Important Compounds: Sodium Carbonate, Sodium Chloride, Sodium Hydroxide and Sodium Hydrogencarbonate, • Biological importance of Sodium and Potassium. Calcium Oxide and Calcium Carbonate and their industrial uses, biological importance of Magnesium and Calcium.
January	11	The p-block elements	• General Introduction to p -Block Elements Group 13 Elements: General introduction, electronic configuration, occurrence, variation of properties, oxidation states, trends in chemical reactivity, anomalous properties of first element of the group, • Boron - physical and chemical properties, some important compounds, Borax, Boric acid, Boron Hydrides, Aluminium: Reactions with acids and alkalies, uses • Group 14 Elements: General introduction, electronic configuration, occurrence, variation of properties, oxidation states, trends in chemical reactivity, anomalous behaviour of first elements. • Carbon-catenation, allotropic forms, physical and chemical properties; uses of some important compounds: oxides. Important compounds of Silicon and a few uses: Silicon Tetrachloride, Silicones, Silicates and Zeolites, their uses.

Chemistry *Session: 2021-22*

contd.

Month	Unit	Chapter	Contents
January	14	Environmental Chemistry	• Environmental pollution - air, water and soil pollution, • chemical reactions in atmosphere, smog, major atmospheric pollutants, acid rain • ozone and its reactions, effects of depletion of ozone layer, greenhouse effect and global warming- pollution due to industrial wastes, • green chemistry as an alternative tool for reducing pollution, strategies for control of environmental pollution concentration of either of the ions REVISION
February	**Block Test -2**		

Mathematics *Session: 2021-22*

Month	Topics	Sub-Topics
May	Sets, Relations and Functions	Sets and Relations
		Concept of Functions
		different types of functions
	Trigonometry	Measurement of Angles
June		Compound Angles and Associated Angles
	UT 1	
	Trigonometry	Transformation of Sum and Product
		Multiple and Sub-Multiple Angles, Associated Trigonometric Graphs.
July	Trigonometry	Trigonometric Equations (general solutions)
	Complex number and Quadratic	Complex Number and Quadratic, Linear Inequalities and graph
	Linear Inequalities	
	Principle of Mathematical Induction	Prove by Method of Induction
	Sequence and Series	AP, nth Term, Sum of n Terms,
August and September	Sequence and Series	GP, nth Term, Sum of n Terms,
		Series sums Relating AP-GP-AGP
	Equation of the Straight Line	Distance and Section Formula, Area of Triangle,Collinearity
		Equation of Lines and Different Forms
		Angle Between Lines,Parallel ,perpendicular lines, distance between a point and a line
BT 1		
October November	Permutation and Combination	Counting Theory, Difference of Permutation and Combination -Related Sums
	Binomial Theorem	Binomial Theorem , nth term, Middle term
	Circle , Parabola	Equation of Circle - related sums
		Parabola (definition Related Locus) and Formulas
		Parametric Form

Mathematics *Session: 2021-22*

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Month	Topics	Sub-Topics
UT 2		
December	Ellipse, Hyperbola, 3-D Geometry, Probability	Equation of Ellipse and Hyperbola
		Parametric Form of Conics
		3D- Geometry (Distance And Section Formula)
		Probability
UT - 3		
January, 2022	Statistics	Statistics (Mean, Median, Standard Deviation)
	Limits, Differentiation	Limits, Formulae and Properties of Limits
		Mathematical Reasoning
		Differentiation- 1st. Principle And Properties,
		Differentiation using formulae.
	REVISION	
February, 2022	**Annual Examination**	

Biology *Session: 2021-22*

MONTH	UNIT	TOPIC
MAY	CELL: STRUCTURE AND FUNCTIONS	INTRODUCTION TO CLASS 11
		CELL: THE UNIT OF LIFE
JUNE	CELL: STRUCTURE AND FUNCTIONS	CELL CYCLE AND CELL DIVISION (UNIT III)
	DIVERSITY IN THE LIVING WORLD	LIVING WORLD
JULY	DIVERSITY IN THE LIVING WORLD	BIOLOGICAL CLASSIFICATION
		PLANT KINGDOM
		ANIMAL KINGDOM
	CELL: STRUCTURE AND FUNCTIONS	BIOMOLECULES (INTRODUCTION)
UNIT TEST-I		
AUGUST	CELL: STRUCTURE AND FUNCTIONS	BIOMOLECULES (CONTINUED)
	STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS	MORPHOLOGY OF FLOWERING PLANTS
		ANATOMY OF FLOWERING PLANTS
BLOCK TEST- I		
SEPTEMBER	STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS	STRUCTURAL ORGANISATION OF ANIMALS
OCTOBER	PLANT PHYSIOLOGY	TRANSPORT IN PLANTS
		MINERAL NUTRITION
		PHOTOSYNTHESIS IN HIGHER PLANTS
NOVEMBER	PLANT PHYSIOLOGY	RESPIRATION IN HIGHER PLANTS
		PLANT GROWTH AND DEVELOPMENT
	HUMAN PHYSIOLOGY	DIGESTION AND ABSORPTION
		BREATHING AND EXCHANGE OF GASES
UNIT TEST- II		
DECEMBER	HUMAN PHYSIOLOGY	BODY FLUIDS AND CIRCULATION
		EXCRETORY PRODUCTS AND THEIR ELIMINATION
		LOCOMOTION AND MOVEMENT (TO BE CONTINUED IN JANUARY)
JANUARY	HUMAN PHYSIOLOGY	NEURAL CONTROL AND CO-ORDINATION
UNIT TEST- III		
JANUARY	HUMAN PHYSIOLOGY	CHEMICAL CO-ORDINATION AND INTEGRATION REVISION
FEBRUARY	**BLOCK TEST- II**	

Syllabus for Block Test- II as Prescribed by CBSE

Computer Science *Session: 2021-22*

Month	Topic	Sub-Topic
May	**Introduction to Problem Solving**	1. Algorithms
		2. Flowchart
		3. Pseudocode
	CHAPTER-12 Computer System Overview	1. Basic Computer Organization
		2. Mobile System Organization
		3. Types of Software
June	**CHAPTER-13 Data Representation**	1. Digital Number System
		2. Number Conversion
		3. Representing Unsigned Integers in Binary
		4. Binary Addition
		5. Character/String representation
	CHAPTER-14 Boolean Logic	1. Development of Boolean Logic
		2. Binary Valued Quantities
		3. Logical Operations
		4. Basic Logic Gates
		5. Basic Postulates of Boolean Logic
		6. Principle of Duality
		7. Basic Theorems of Boolean Algebra/Logic
		8. DeMorgan's Theorems
		9. DeMorgan's Theorems
July	**CHAPTER -1 Getting Started with Python**	1. Python -Pluses
		2. Python - Minuses
		3. Working in Python
		4. Understanding First program
	CHAPTER-2 Python Fundamentals	1. Python Character Set
		2. Tokens
		3. Barebones of a Python Program
		4. Variables and Assignments
July	**Unit Test – I**	

Computer Science *Session: 2021-22*

contd.

Month	Topic	Sub-Topic
July	**CHAPTER-3 Data Handling**	1. Data Types
		2. Mutable and Immutable Types
		3. Operators
		4. Expressions
		5. Working with Some Standard Library Modules
	CHAPTER-4 Conditional And Iterative Statements	1. Types of Statements in Python 2. Statement Flow Control 3. Program Logic Development Tools 4.The if Statements of Python 5. Repetition of Tasks- A Necessity 6. The range() Function 7. Iteration/Looping Statements
August	**CHAPTER-5 String Manipulation**	1. Traversing a String 2. String Operators 3. String Slices 4. String Functions and Methods
Block Test – I		
September	**CHAPTER-6 Debugging Pro- grams**	1. What is Debugging? 2. Errors and Expectations 3. How to Debug a Program? 4. Using Debugger Tool
October	**CHAPTER-7 List Manipulation**	1. Creating and Accessing Lists 2. List Operations 3. Working with Lists 4. List Functions and Methods
November	**CHAPTER-10 Understanding Sorting**	1. What is Sorting? 2. Bubble Sort 3. Insertion Sort
	CHAPTER-8 Tuples	1. Creating and Accessing Tuples 2. Tuple Operations 3. Tuple Functions and Method
Unit Test – II		
December	**CHAPTER-9 Dictionaries**	1. Dictionary- Key: Value Pairs 2. Working with Dictionaries 3. Dictionary Functions and Methods

Computer Science *Session: 2021-22*

contd.

Month	Topic	Sub-Topic
December	**CHAPTER-16 Relational Databases**	1.Purpose of DBMS 2.Relational Database Model 3.The Relational Model Terminology 4.Brief History of MySQL 5. MySQL Database System 6. Starting MySQL 7. MySQL and SQL
January	**CHAPTER-17 Simple Queries in SQL**	1. Some MySQL SQL Elements 2. SQL Command Syntax 3. Sample Database 4. Making Simple Queries 5. MySQL Functions 6. Aggregate Functions
	CHAPTER-18 Table Creation And Data Manipulation Commands	1. Databases in MySQL 2. Creating Tables 3. Changing Data with DML Commands 4. More DDL Commands
	CHAPTER-19 Table Joins ans Indexes in SQL	Joins and Indexes
	CHAPTER-21 Cyber Safety	1. What is Cyber Safety? 2. Safely Browsing the Web 3. Identity Protection while Using Internet 4. Confidentiality of Information 5. Cybercrime 6. Common Social Networking Sites 7. Appropriate Usage of Social Networks
	CHAPTER-22 Online Access and Computer Security	1. Threats to Computer Security
		2. Solutions to Computer Security Threat
		3. Firewall- An Important Solution for Computer Security
January	**Unit Test – III**	
February	**Revision**	
February	**Block Test – II**	

Applied Mathematics *Session: 2021-22*

MONTH	TOPIC	SUBTOPIC
MAY	ALGEBRA	• Introduction of Sequences, Series • Arithmetic and Geometric progression • Relationship between AM and GM
JUNE	ALGEBRA (CONTINUED)	• Sets • Types of sets • Venn diagram • De Morgan's laws • Problem solving using Venn diagram • Relations and types of relations • Basic concepts of Permutations and Combinations • Permutations, Circular Permutations, Permutations with restrictions Combinations with standard results
	UNIT TEST 1	
JULY	Numbers, Quantification and Numerical Applications	• Prime Numbers, Encryptions using Prime Numbers • Binary Numbers • Complex Numbers (Preliminary idea only) • Indices, Logarithm and Antilogarithm • Laws and properties of logarithms • Simple applications of logarithm and antilogarithm • Numerical problems on averages, calendar, clock, time, work and distance, mensuration, seating arrangement
AUGUST	Calculus	• Introducing functions • Domain and Range of a function • Types of functions (Polynomial function; Rational function; Composite function; Logarithm function; Exponential function; Modulus function; Greatest Integer function, Signum function) • Graphical representation of functions • Concept of limits and continuity of a function • Instantaneous rates of change • Differentiation as a process of finding derivative • Derivatives of algebraic functions using Chain rule • Tangent line and equations of tangents
SEPTEMBER	Probability	• Random experiment, sample space, events, mutually exclusive events

Applied Mathematics *Session: 2021-22*

contd.

MONTH	TOPIC	SUBTOPIC
OCTOBER	Probability	• Independent and Dependent Events • Law of Total Probability Bayes' Theorem
NOVEMBER	Descriptive Statistics	• Types of data (raw data, univariate data, bivariate and multi-variate data) • Data on various scales (nominal, ordinal, interval and ratio scale) • Data representation and visualization • Data interpretation (central tendency, dispersion, deviation, variance, skewness and kurtosis) • Percentile rank and quartile rank • Correlation (Pearson and Spearman method of correlation) • Applications of descriptive statistics using real time data
	UNIT TEST 2	
DECEMBER	Coordinate Geometry	• Straight Line • Circles • Parabola (only standard forms and graphical representation on two-dimensional plane)
	UNIT TEST 3	
JANUARY 2022	Basics of Financial Mathematics	• Interest and interest rate • Accumulation with simple and compound interest • Simple and compound interest rates with equivalency • Effective rate of interest • Present value, net present value and future value • Annuities, calculating value of regular annuity • Simple applications of regular annuities (up to 3 period) • Tax, calculation of tax and simple applications of tax calculation in Goods and service tax, Income Tax • Bills, tariff rates, fixed charge, surcharge, service charge • Calculation and interpretation of electricity bill, water supply bill and other supply bills (Comparing interest rates on various types of savings; calculating income tax; electricity bills, water bill; service surcharge using realistic data)

Applied Mathematics *Session: 2021-22*

contd.

MONTH	TOPIC	SUBTOPIC
JANUARY 2022	Mathematical and Logical Reasoning	• Mathematically acceptable statements • Connecting words/ phrases in Mathematical statement consolidating the understanding of "if and only if (necessary and sufficient) condition", "implies", "and/ or", "implied by", "and", "or", "there exists" and their use through variety of examples related to real life and Mathematics • Problems based on logical reasoning (coding-decoding, odd man out, blood relation, syllogism etc)
	REVISION	
FEBRUARY, 2022	ANNUAL EXAMINATION	

Economics *Session: 2021-22*

Month	Unit	Topic	Sub topic
May	Part B Unit 4	Microeconomics: Introduction	Meaning of microeconomics and macroeconomics; positive and normative economics What is an economy? Central problems of an economy: what, how and for whom to produce; concepts of production possibility frontier and opportunity cost.
	Part A Unit 1	Statistics: Introduction	What is Economics? Meaning, scope, functions and importance of statistics in Economics.
June	Part B Unit 5	Microeconomics: Consumer's Equilibrium and Demand	Consumer's equilibrium - meaning of utility, marginal utility, law of diminishing marginal utility, conditions of consumer's equilibrium using marginal utility analysis. Indifference curve analysis of consumer's equilibrium-the consumer's budget (budget set and budget line), preferences of the consumer (indifference curve, indifference map) and conditions of consumer's equilibrium. Demand, market demand, determinants of demand, demand schedule, demand curve and its slope, movement along and shifts in the demand curve. Price elasticity of demand - Factors affecting price elasticity of demand; measurement of price elasticity of demand - percentage change method.
July	Part A Unit 2	Statistics: Collection, Organisation and Presentation of data	Collection of data - sources of data - primary and secondary; how basic data is collected with concepts of sampling; methods of collecting data; some important sources of secondary data: Census of India and National Sample Survey Organisation.
Unit Test 1 Commences			
July	Part A Unit 2	Statistics: Collection, Organisation and Presentation of data	Organisation of Data: Meaning and types of variables; Frequency Distribution. Presentation of Data: Tabular Presentation and Diagrammatic Presentation of Data: (i) Geometric forms (bar diagrams and pie diagrams), (ii) Frequency diagrams (histogram, polygon and ogive) and (iii) Arithmetic line graphs (time series graph).
August	Part A Unit 3	Statistics: Tools and Interpretation	Arithmetic mean, median and mode.
	Part B Unit 6	Microeconomics: Producer behaviour and supply	Meaning of Production Function – Short-Run and Long-Run Total Product, Average Product and Marginal Product, Returns to a Factor: Low of variable proportion

Economics *Session: 2021-22*

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Month	Unit	Topic	Sub topic
Block Test 1 Commences			
September	Part B Unit 6	Microeconomics: Producer behaviour and supply	Cost: Short run costs - total cost, total fixed cost, total variable cost; Average cost; Average fixed cost, average variable cost and marginal cost- meaning and their relationships. Revenue - total, average and marginal revenue - meaning and their relationship.
October	Part A Unit 3	Statistics: Tools and Interpretation	Measures of dispersion: absolute dispersion (range, quartile deviation, mean deviation and standard deviation); relative dispersion (co-efficient of range, co-efficient of quartile deviation, co-efficient of mean deviation, co- efficient of variation);
November	Part A Unit 6	Microeconomics: Producer behaviour and supply	Producer's equilibrium-meaning and its conditions in terms of marginal revenue- marginal cost. Supply, market supply, determinants of supply, supply schedule, supply curve and its slope, movements along and shifts in supply curve,
	Part A Unit 3	Statistics: Tools and Interpretation	Correlation: meaning and properties, scatter diagram, Measures of correlation – Karl Pearson's method (Two variables ungrouped method), Spearman's Rank correlation.
Unit Test 2 Commences			
December	Part A Unit 6	Microeconomics: Producer behaviour and supply	Price elasticity of supply; measurement of price elasticity of supply – percentage change method.
	Part A Unit 7	Forms of Market and Price determination	Perfect competition - Features; Determination of market equilibrium and effects of shifts in demand and supply. Other Market Forms – monopoly,monopolistic competition, their meaning and features. Simple Applications of Demand and Supply: Price ceiling, price floor
January	Part A Unit 3	Statistics: Tools and Interpretation.	Introduction to Index Numbers: meaning, types, Wholesale price index, consumer price index and index of industrial production, uses of index numbers, inflation and index number. REVISION
Unit Test 3 Commences			
February Block Test 2 Commences			

Accountancy *Session: 2021-22*

Month	Topic	Sub topic
May	Introduction to Accounting	Transactions-meaning features, types. Objective of accounting, accounting concepts and accounting principles, GST etc.
	Introduction to Accounting	Accounting Terminology
	Accounting Equation	Accounting Equation
June	Double Entry System	Golden Rule, Debit & Credit, Journal (incld. GST) and Journalising
UT I		
July	Double Entry System	ledger posting and balancing of accounts.
		Cash Book (single, double column)
		Petty Cash Book
August	Subsidiary Books and Trial Balance (including theory)	Subsidiary Books (except B/R,B/P)
		Trial Balance
	Trial Balance and Rectification of Errors (including theory)	Trial Balance with corrections and Rectification of Errors
	Bank Reconciliation State- ment (including theory)	Bank Reconciliation Statement (including ammended cash book)
	Bills of Exchange (including theory)	Bills of exchange- Introduction, Draw- er, Drawee, payee, Grace days and other import- ant terms (discounting, retirement, renewal, mul- tilple bills and endorsement)
Block Test 1		
September	Rectification of Errors	Retification of errors detected before and after preparation of trial Balance and preparation of suspense account
October		rectification continued
	Depreciation (including the- ory)	Depreciation- Method, reason for Charging de- preciation. Straight Line Method only

Accountancy *Session: 2021-22*

contd.

Month	Topic	Sub topic
November	Depreciation	Depreciation - Written down value method, provision for depreciation and Asset Disposal A/c.
	Provision and Reserves (Theory)	Meaning and types of reserves and provisions
December	**UT II**	
	Final Accounts (including theory)	Final accounts - Without adjustment
	Provision and Reserves (sums)	accounting treatment of reserves and provisions and representation in financial statements
	Final Accounts	Final accounts - With adjustment
January	**UT III**	
	Final Accounts	Final accounts - With adjustment
	Single Entry (including theo- ry)	Statement of affairs method of ascertaining profit & loss, preparation of Debtors A/c, Creditors A/c and other accounts from incomplete records.
	Revision	
February	**Block Test 2**	

Business Studies *Session: 2021-22*

Month	Topic	Sub Topic
May	Evolution and Fundamentals of Business	History of commerce in India, Concept and Characteristics
		Differentiation between Business, Profession and Employment, Objectives of Business (Economic and Social), Role of Profit
		Classification of Business Activity (Industry and Commerce), Business Risk - Meaning, nature and causes and written work.
	Forms of Business Organisation	Sole Proprietorship and Joint Hindu Family Busi- ness
June	Forms of Business Organisation	Partnership: Features, Types, Merits, Demerits and Types of partners, minor as apartner, LLP, Cooperative Societies - Features, Types, Merits and Demerits
		Joint Stock Companies - Features, Merits and demerits, Formation of a company procedure and documents (including OPC)
		Starting a Business - basic Factors
UT I		
July	Public, Private and Global Enterprise	Differentiation between Public Sector and Private Sector, Forms of Public Sector - Feature, Merits and Demerits, Changing role of Public Sector, Features of - Global Enterprises, Joint Venture, PPP .
August	Business Services	Banking - Types of bank account, banking services, RTGS, NEFT, core banking
		Insurance - Principles, Life Insurance, Health In- surance, Fire Insurance and Marine Insurance - Meaning and Differentiation. Postal and telecom services .
	Emerging Modes of Business	E- Business - Scope, Benefit, Resources required to impliment, online transactions, Payment mechanism and Security and safety of business transaction,Outsourcing BPO and KPO
	Social Responsibility and Business Ethics	Meaning, Definition and Need for Social Re- sponsibility, Arguments For and Against Social Responsibility, Responsibility towards different interest groups
	Formation of a Company	Steps in the formation of a company to be done in detail with relevant case studies (chapter 7 NCERT)

Business Studies *Session: 2021-22*

contd.

Month	Topic	Sub Topic
September	**BLOCK TEST I**	
September		Meaning and need for Business Finance, Sourc- es of business finance ownership basis, Retained Earnings, Issue of equity shares, Prefernce shares
October	Sources of Business Finance	ADR, GDR, IDR , Borrowed Fund - Debenture and Bonds, Loans from Commercial Banks and Financial Institutions, Public Deposit, Trade Credit and ICD.
November	Small Business	Entrepreneurship Development concept characteristics and need, Definition of Small Scale Enterprise, Role of Small Business in India with special Refernce to Rural Areas
		Government Scheme and Agencies - NSIC and DIC with special reference to Rural, Backward and Hilly Area and written work
December	**UT II**	
	Internal Trade	GST concept and key features, Services of a wholeseller, Services of Retailers, Types of Retail Trade - Itinerant retailers.
		Small Scale Fixed Shops, Large Scale Retailer - Departmental Stores
		Chain Stores and Mail Order Houses
		Vending Machines, Basic Functions of Chamber of Commerce and Industry and Main Documents of Internal Trade and terms of Trade and written work,
January	**UT III**	
	International Trade	Meaning, Characteristics of International Trade, Difference between Internal and International Trade, Advantages and Disadvantages of Interna- tional Trade
		Export Procedure with all documents and Import Procedure with all documents. WTO and its functions.
	Revision	
February	**Block Test 2**	

Informatics Practices *Session: 2021-22*

Month	Topic	Sub-Topic
May	**CHAPTER-1 Computer System Overview**	1. Basic Computer Organization 2. Mobile System Organization 3. Types of Software
	CHAPTER-2 Data Representation	1. Digital Number Systems 2. Number Conversions 3. Representing Unsigned Integers in Binary 4. Binary Addition 5. Character Representation
June	**CHAPTER-3 Getting Started With Python**	1. Introduction 2. Working in Python 3. Python-Advantages and Disadvantages 4. First Program in Python
	CHAPTER-4 Python Fundamentals	1. Python Character Set 2. Tokens 3. Barebones of a Python Program 4. Variables and Assignments
July	**Unit Test – I**	
July	**CHAPTER-5 Data Handling**	1. Data Types 2. Mutable and Immutable Types 3. Operators 4. Expressions 5. Working with Some Standard Library Modules
	CHAPTER-6 Conditional And Iterative Statements	1. Types of Statements in Python 2. Statement Flow Control 3. Program Logic Development Tools 4. The if Statements of Python 5. Repetition of Tasks- A Necessity 6. The range() Function 7. Iteration/Looping Statements
August	**CHAPTER-7 Text Handling**	1. Traversing a String 2. String Operators 3. String Slices 4. String Functions and Methods
September	**CHAPTER-8 List Manipulation**	1. Creating and Accessing Lists 2. List Operations 3. Working with Lists 4. List Functions and Methods
Revision & Block Test – I		

Informatics Practices *Session: 2021-22*

contd.

Month	Topic	Sub-Topic
October	**CHAPTER-9 Dictionaries**	1. Dictionary- Key: Value Pairs 2. Working with Dictionaries 3. Dictionary Functions and Methods
November	**CHAPTER-10 Numpy**	1.Numpy Arrays 2.Creating Numpy 3.Numpy Data typess 4.Working With Numpy
	CHAPTER-11 Relational Databases	1. Purpose of DBMS 2. Relational Database Model 3. The Relational Model Terminology 4. Brief History of MySQL 5. MySQL Database System 6. Starting MySQL 7. MySQL and SQL
Unit Test – II		
December	**CHAPTER-12 Simple Queries in SQL**	1. Some MySQL SQL Elements 2. SQL Command Syntax 3. Sample Database 4. Making Simple Queries 5. MySQL Functions 6. Aggregate Functions
January	**CHAPTER-13 Table Creation And Data Manipulation Com-mands**	1. Databases in MySQL 2. Creating Tables 3. Changing Data with DML Commands 4. More DDL Commands
	CHAPTER-14 Cyber Safety	1. What is Cyber Safety? 2. Safely Browsing the Web 3. Identity Protection while Using Internet 4. Confidentiality of Information 5. Cybercrime 6. Common Social Networking Sites 7. Appropriate Usage of Social Networks
	CHAPTER-15 Online Access & Computer Security	1. Threats to Computer Security
		2. Solutions to Computer Security Threat
		3. Firewall- An Important Solution for Computer Security
January	**Unit Test – III**	
February	**REVISION**	
February	**Block Test – II**	

Physical Education *Session: 2021-2022*

Month	Unit	Topic	Sub Topic
May	1	Changing Trends & Ca- reer In Physical Educa- tion	Meaning & definition of Physical Education
			Aims & Objectives of Physical Education
			Competitions in various sports at national and international level
			Career Options in Physical Education
			Khelo India program
June and July	2	Olympic Value Education	Indian Olympic Association
			Olympics Symbols, ideals, objectives & values of olympics
			Olympics. Paralympics and Special Olympics
			International Olympic Committee
Unit Test- 1			
July	3	Physical Fitness, Well- ness & Lifestyle	Meaning & Importance Of Physical Fitness, Wellness & Lifestyle
			Components of physical fitness & wellness
			Components of Health related fitness
August	4	Physical Education & Sports For Cwsn (Chil- dren With Special Needs- Divyang)	Aims & objectives of Adaptive Physical Education
			Organization promoting Adaptive Sports (Special Olympics Bharat; Paralympics; Deaflympics)
			Concept of Inclusion, its need and Imple-mentation
			Role of various professionals for children with special needs (Counsellor, Occupation- al Therapist, Physiotherapist, Physical Edu- cation Teacher, Speech Therapist & special Educator)
Block Test -1			
September	5	Yoga	Meaning & Importance of Yoga
			Elements of Yoga
			Introduction - Asanas, Pranayam, Medita- tion & Yogic Kriyas

Physical Education *Session: 2021-2022*

contd.

Month	Unit	Topic	Sub Topic
September	5	Yoga	Yoga for concentration & related Asanas (Sukhasana; Tadasana; Padmasana & Shashankasana, Naukasana, Vrikshasana Garudasana (Eagle pose) Relaxation Techniques for improving concentration – Yog-nidra"
October	6	Physical Activity & Lead- ership Training	Leadership Qualities & Role of a Leader
			Creating leaders through Physical Education
			Meaning, objectives & types of Adventure Sports (Rock Climbing, Tracking, River Rafting, Mountaineering, Surfing and Para Gliding
			Safety measures during physical activity and adventure sports
November	7	Test, Measurment & Evaluation	Define Test, Measurement & Evaluation
			Importance Of Test, Measurement & Evaluation In Sports
			Calculation Of BMI & Waist - Hip Ratio
			Somato Types (Endomorphy, Mesomorphy & Ectomorphy)
			Measurement of health related fitness
Unit Test- 2			
December	8	Fundamentals Of Anato - my, Physiology & Kine- siology In Sports	Defination and importance of Anatomy, Physiology & kinesiology
			Function Of Skeleton System, Classification of Bones & Types of Joints
			Properties & Functions of Muscles
			Function & Structure Of Respiratory System, Mechanism of Respiration
			Equilibrium – Dynamic & Static And Centre of Gravity and its application in sports

Physical Education *Session: 2021-2022*

contd.

Month	Unit	Topic	Sub Topic
January	9	Psychology & Sports	Definition & Importance of Psychology in Phy. Edu. & Sports
			Define & Differentiate Between Growth & Development
			Adolescent Problems & Their Management
			Developmental Characteristics At Different Stages of Development
Unit Test- 3			
February	10	Training & Doping In Sports	Meaning & Concept of Sports Training
			Principles of Sports Training
			Warming up & limbering down
			Skill, Technique & Style
			Prohibited Substances & their side effects
			Concept & classification of doping
			Dealing with alcohol and substance abuse
Block Test 2			


SERVICE
BEFORE
SELF
PUBLIC
PEACE