HTET (Haryana Teacher Eligibility Test)

SCHEME/STRUCTURE AND CONTENT OF TEST:

All questions in HTET will be multiple choice questions. Each carrying one mark, with four alternatives out of which one answer will be correct. There shall be no negative marking.

Level - I - For becoming Teacher for Classes I-V: Primary Teacher

- There shall be only one paper, Duration of examination: Two-and-a-half hours.

Sl. No.	**Topic**	No. of Questions	Marks
1	Child Development and Pedagogy	30 MCQs	30 Marks
2	Languages (Hindi 15 MCQs & English 15 MCQs)	30 MCQs	30 Marks
3	General Studies (Quantitative Aptitude 10 MCQs, Reasoning Ability 10 MCQs Haryana G.K. and Awareness 10 MCQs)	30 MCQs	30 Marks
4	Mathematics	30 MCQs	30 Marks
5	Environmental Studies	30 MCQs	30 Marks
Total		150 MCQS	150 Marks

Level-II-For becoming Teacher for Classes VI-VIII: Trained Graduate Teacher (TGT)

- There shall be only one paper. Duration of examination: Two-and-a-half hours.

Sl. No.	**Topic**	No. of Questions	Marks
1	Child Development and Pedagogy	30 MCQs	30 Marks
2	Languages (Hindi 15 MCQs & English 15 MCQs)	30 MCQs	30 Marks
3	General Studies (Quantitative Aptitude 10 MCQs, Reasoning Ability 10 MCQs Haryana G.K. and Awareness 10 MCQs)	30 MCQs	30 Marks
4	Subject Specific as opted	60 MCQs	60 Marks
Total		150 MCQS	150 Marks

Level-II-For becoming Teacher for Classes VI-VIII: Trained Graduate Teacher (TGT)

- There shall be only one paper. Duration of examination: Two-and-a-half hours.

Sl. No.	**Topic**	No. of Questions	Marks
1	Child Development and Pedagogy	30 MCQs	30 Marks
2	Languages (Hindi 15 MCQs & English 15 MCQs)	30 MCQs	30 Marks
3	General Studies (Quantitative Aptitude 10 MCQs, Reasoning Ability 10 MCQs Haryana G.K. and Awareness 10 MCQs)	30 MCQs	30 Marks
4	Subject Specific as opted	60 MCQs	60 Marks
Total		150 MCQS	150 Marks

CONTENT OF SYLLABUS

Level I: (for classes 1 to V) Primary Stage

	Part I. Child Development and Pedagogy
A	**Child Development (Elementary School Child)** • Concept of development and its relationship with learning • Principles of the development of children • Influence of Heredity & Environment • Socialization processes: Social world & children (Teacher, Parents, Peers) • Piaget, Kohlberg and Vygotsky: constructs and critical perspectives • Concepts of child-centered and progressive education • Critical perspective of the construct of Intelligence • Multi-Dimensional Intelligence • Language &Thought • Gender as asocial construct; gender roles, gender-bias and educational practice • Individual differences among learners, understanding differences based on diversity of language, caste, gender, community, religion etc. • Distinction between Assessment for learning and assessment of learning; School-Based Assessment, Continuous & Comprehensive Evaluation: perspective and practice • Formulating appropriate questions for assessing readiness levels of learners; for enhancing learning and critical thinking in the classroom and for assessing learner achievement.
B	**Concept of Inclusive education and understanding children with special needs** • Addressing learners from diverse back grounds including disadvantaged and deprived • Addressing the needs of children with learning difficulties, "impairment" etc. • Addressing the Talented, Creative, Specially abled Learners **Learning and Pedagogy** • How children think and learn; how and why children„ fail" to achieve success in school performance. • Basic processes of teaching and learning; children's strategies of learning; learning as a social activity; social context of learning. • Child as a problem solve rand a "scientific investigator" • Alternative conceptions of learning in children, understanding children's "errors" as significant steps in the learning process. • Cognition & Emotions • Motivation and learning • Factors contributing to learning-personal & environmental
	Part II: Syllabus for Language
A	**Language I (Hindi)**
i.	**Language Comprehension** Reading unseen passages-two passages one prose or drama and one poem with questions on comprehension, inference, grammar and verbal ability (Prose passage may be literary, scientific, narrative or discursive)

ii	**Pedagogy of Language Development** • Learning and acquisition • Principles of language Teaching • Role of listening and speaking; function of language and how children use • IT as a tool • Critical perspective on the role of grammar in learning a language for communicating ideas verbally and in written form; • Challenges of teaching language in a diverse classroom; language difficulties, errors and disorders • Language Skills
iii	Teaching-learning materials: Textbook, multi-media materials, multi lingual resource of the classroom
B	**Language-II (ENGLISH)**
i	**Comprehension** Two unseen prose passages (discursive or literary or narrative or scientific) with question on comprehension, grammar and verbal ability
ii	**Pedagogy of Language Development** Learning and acquisition Principles of language Teaching Role of listening and speaking; function of language and how children use it as a tool Critical perspective on the role of grammar in learning a language for communicating ideas verbally and in written form; Challenges of teaching language in a diverse classroom; language difficulties, errors and disorders Language Skills
iii	Teaching- learning materials: Textbook, multi-media materials, multi lingual resource of the classroom
	PART III Syllabus to General Studies
A	Haryana related history, current affairs, literature, Geography, Civics, Environment, Culture, Art, Traditions, and Welfare Schemes of Haryana Government.
B	**General Intelligence &Reasoning:** It would include questions of both verbal and non-verbal type. This component may include questions on analogies, similarities and differences, space visualization, spatial orientation, problem solving, analysis, judgment, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non-verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. **The topics are:** Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Classification, Symbolic/Number Classification, Figural Classification, Semantic Series, Number Series, Figural Series, Problem Solving, Word Building, Coding & De-coding, Numerical Operations, Symbolic Operations, Trends, Space Orientation, Space Visualization, Venn Diagrams, Drawing inferences, Punched hole/ Pattern- folding & un-folding, Figural Pattern-folding and completion, Indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small & Capital letters/numbers coding, decoding and classification, Embedded Figures, Critical thinking, Emotional Intelligence, Social Intelligence.

C	**Quantitative Aptitude:** The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The scope of the test will be computation of whole numbers, decimals, fractions and relationships between numbers, Percentage. Ratio & Proportion, Square roots, Averages, Interest, Profit and Loss, Discount, Partnership Business, Mixture and Allegation, Time and distance, Time & Work, Basic algebraic identities of School Algebra & Elementary surds, Graphs of Linear Equations, Triangle and its various kinds of centers, Congruence and similarity of triangles, Circle and its chords, Tangents, Angles subtended by chords of a circle, Common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular or square base, Trigonometric ratio, Degree and Radian Measures, Standard Identities, Complementary angles, Heights and Distances, Histogram, Frequency polygon, Bar diagram & Pie chart.
Part-IV Subject Specific Syllabus	
A	**Mathematics** Content: Geometry, Shapes & Spatial Understanding, Solids around Us, Numbers, Addition and Subtraction, Multiplication, Division, Measurement, Weight, Time, Volume, Data Handling, Patterns, Money. **Pedagogical Issues:** Nature of Mathematics/Logical thinking; understanding children's thinking and reasoning patterns and strategies of making meaning and learning, Place of Mathematics in Curriculum, Language of Mathematics, Community Mathematics, Evaluation through formal and informal methods, Problems of Teaching, Error analysis and related aspects of learning and teaching, Diagnostic and Remedial Teaching.
B	**Environmental Studies Content:** **Family and Friends:** Relationships, Work and Play, Animals, Plants. Food, Shelter, Water, Travel, Things We Make and Do. **Pedagogical Issues:** Concept and scope of EVS, Significance of EVS, Integrated EVS, Environmental Studies & Environmental Education, Learning Principles, Scope & relation to Science & Social Science, Approaches of presenting concepts, Activities, Experimentation/Practical Work, Discussion, CCE, Teaching material/Aids, Problems.

LEVEL II (for classes VI to VIII) Elementary Stage

	PART I: Syllabus for Child Development and Pedagogy
A	Concept of development and its relationship with learning, Principles of the development of children, Influence of Heredity & Environment **Socialization processes**: Social world & children (Teacher, Parents, Peers) **Piaget, Kohlberg and Vygotsky:** constructs and critical perspectives, Concepts of child centered and progressive education, Critical perspective of the construct of Intelligence Multi-Dimensional Intelligence, Language &Thought, Gender as a social construct; gender roles, gender-bias and educational practice, Individual differences among learners, understanding differences based on diversity of language, caste, gender, community, religion etc., Distinction between Assessment for learning and assessment of learning; School-Based Assessment, **Continuous & Comprehensive Evaluation:** perspective and practice Formulating appropriate questions for assessing readiness levels of learners; for enhancing learning and critical thinking in the classroom and for assessing learner achievement.
B	**Concept of Inclusive education and understanding children with special needs** • Addressing learners from diverse back grounds including disadvantaged and deprived • Addressing the needs of children with learning difficulties, "impairment" etc. • Addressing the Talented, Creative, Specially abled Learners **Learning and Pedagogy** • How children think and learn; how and why children„ fail" to achieve success in school performance. • Basic processes of teaching and learning; children's strategies of learning; learning as a social activity; social context of learning. • Child as a problem solve rand a "scientific investigator" • Alternative conceptions of learning in children, understanding children's "errors" as significant steps in the learning process. • Cognition & Emotions • Motivation and learning • Factors contributing to learning-personal & environmental
	Part-II Syllabus for Language
A	**Language I: (Hindi)**
i	Language Comprehension Questions: Reading unseen passage - one passage from prose/drama/poem with questions on comprehension, inference, grammar and verbal ability (Passage may be literary, scientific, narrative or discursive).
ii	**Pedagogy of Language Development**: Learning and acquisition, Principles of language Teaching, Role of listening and speaking; function of language and how children use it as a tool, Critical perspective on the role of grammar in learning a language for communicating ideas verbally and in written form, Challenges of teaching language in a diverse classroom; language difficulties, errors and disorders, Language Skills.
iii	**Teaching-learning materials**: Textbook, multi-media materials, multilingual resource of the classroom.

B	**Language – II (English)**
i	Language – II (English) Language Comprehension Questions: One unseen prose passage (discursive or literary or narrative or scientific) with question on comprehension, grammar and verbal ability.
ii	Pedagogy of Language Development: Learning and acquisition, Principles of language Teaching, Role of listening and speaking; function of language and how children use it as a tool, Critical perspective on the role of grammar in learning a language for communicating ideas verbally and in written form; Challenges of teaching language in a diverse classroom; language difficulties, errors and disorders, Language Skills.
iii	Teaching-learning materials: Textbook, multi-media materials, multilingual resource of the classroom.
	Part III Syllabus for General Studies
A	Haryana related history, Current affairs, Literature, Geography, Civics, Environment, Culture, Art, traditions, and Welfare schemes of Haryana Government.
B	**General Intelligence & Reasoning:** It would include questions of both verbal and non-verbal type. This component may include questions on analogies, similarities and differences, space visualization, spatial orientation, problem solving, analysis, judgment, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non-verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. The topics are: Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Classification, Symbolic/Number Classification, Figural Classification, Semantic Series, Number Series, Figural Series, Problem Solving, Word Building, Coding & De-coding, Numerical Operations, Symbolic Operations, Trends, Space Orientation, Space Visualization, Venn Diagrams, Drawing inferences, Punched hole/ pattern- folding & un-folding, Figural Pattern-folding and completion, Indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small & Capital letters/numbers coding, Decoding and classification, Embedded Figures, Critical thinking, Emotional Intelligence, Social Intelligence.
C	Quantitative Aptitude: The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The scope of the test will be computation of whole numbers, decimals, fractions and relationships between numbers, Percentage. Ratio & Proportion, Square roots, Averages, Interest, Profit and Loss, Discount, Partnership Business, Mixture and Allegation, Time and distance, Time & Work, Basic algebraic identities of School Algebra & Elementary surds, Graphs of Linear Equations, Triangle and its various kinds of centers, Congruence and similarity of triangles, Circle and its chords, tangents, angles subtended by chords of a circle, common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular or square base, Trigonometric ratio, Degree and Radian Measures, Standard Identities, Complementary angles, Heights and Distances, Histogram, Frequency polygon, Bar diagram & Pie chart.

Part IV: Subject Specific Syllabus	
Science	
A	**Sorting Material and Group:** Object around us, properties of materials, appearance, hardness, soluble or insoluble, transparency, object float or sink in water. **Separation of substances:** Separation of substance, mixture and their types, methods of separation, filtration, threshing, evaporation, sedimentation and decantation, sieving, winnowing. **Acids, Bases and Salts**: Acids and bases, natural indicators around us, neutralisation, neutralisation in everyday life. **Physical and Chemical Change**: Physical and chemical changes, physical changes, chemical changes, rusting of iron, crystallisation. **Coal and Petroleum**: Coal, petroleum, natural gas, some natural resources are limited. **Combustion and Flame**: Combustion, how do we control fire, types of combustion, flame, structure of flame, what is a fuel, fuel efficiency.
	Matter in our Surrounding: Physical nature of matter, characterestics of particles of matter, states of matter, can matter change its state, evaporation. **Is Matter Around us Pure:** What is a mixture, solution, separating the components of a mixture, physical and chemical change, types of pure substance. **Atoms and Molecule:** Atom and molecule, laws of chemical combination, atom, molecule, mole concept, molecular mass, chemical formula. **Structure of Atom:** Charged particle in matter, Structure of atom, electron distributed in different orbits, valancy, atomic number and mass number. **Chemical equation and Reaction:** Chemical reactions, chemical equations, types of chemical reaction, effect of oxidation reaction in everyday life. **Metal and Non- Metals:** Physical properties of metals and non metals, chemical properties, metal react with water, air and acids, reactivity series, metal and non metal react, properties of ionic compound, occurrence of metal, extraction, refining, corrosion and its prevention. **Carbon and its Compound:** Carbon and its compounds, bonding in carbon covalent bond, chemical properties of carbon compound, Important carbon compound- ethanol and ethanoic acid, soaps and detergents. Subject related Pedagogy.
B	**Fundamental unit of life:** Cell and its Structural Organisation and functions, Cell division. **The world of the living**: Forms and functions of plants and animals. **Plant and animal tissues.** **Diversity in living organisms:** Classification of plants and animals with their characters. **Various life processes of animals and plants**: Nutrition, Respiration, Transportation, Excretion (Including various systems of human beings). **Body movements:** Movement in animals, Human body and its movement, Control and coordination in plants and animals. **Reproduction in organisms:** Modes of reproduction (Asexual and sexual reproduction) Reproductive health (Adolescence and puberty) Heredity and evolution. **Disease**: Types, causes, agents, treatment and prevention. Weather, Climate and adaptation of organisms to different climate and habitat, Ecosystem, Pollution, Biogeochemical cycles, Ozone layer, Animal husbandry, Soil, Water, Forest & Wild life, Environmental awareness, Conservation of plants and animals, Natural resources and their management.

	Food: Its resources, components and functions, Improvement in food resources, Crop production and its management, Improvement in crop yields and management, Crop Protection management. Microorganisms. **Subject related Pedagogy.**
C	**Motion & Measurement:** Types of motion and non-uniform motion , speed, velocity and acceleration, Distance time graph, Velocity time graph, Equation of motion, Uniform circular motion, Measurement of distance and time. **Force and laws of motion**: Types of forces, Balance and unbalanced forces, First law of motion, second law of motion, third law of motion, Friction, Factors effecting friction, Friction is necessary evil, wheels reducing friction, Fluid friction. **Gravitation:** Universal law of gravitation, Importance of universal law of gravitation, free fall, To calculate value of g, Motion of objects under the influence of gravitational force of earth, Mass and weight, weight of object on moon, Thrust and Pressure, Atmospheric Pressure, Pressure in fluids, Buoyancy, why objects float or sink when placed on the surface of water Archimedes' Principle. **Work, Energy & Power:** Scientific concept of work, work done by constant force, Type of Energy, Kinetic energy, Potential energy, Law of conservation of energy, Rate of doing work, **Sound:** Production of sound, propagation of sound, characteristics of sound waves, speed of sound in different media, echo, reverberation, uses of multiple reflection of sound, range of hearing audible and inaudible sounds, noise and music, noise pollution, application of ultrasound. **Light:** transparent, opaque and translucent objects, A pinhole camera, sunlight-white or coloured , what is Braille system, reflection of light; spherical, representation of images formed by spherical mirror using ray diagrams: image formation by concave mirror, image formation by convex mirror, mirror formula and Magnification; Refraction of light: Refraction through a rectangular glass slab, the refractive index, refraction by spherical lenses, image formation by lenses, sign convention for spherical lenses, lens formula and magnification, power of lens. **The human eye:** power of accommodation; defects of vision and their correction; Myopia, Hypermetropia, presbyopia, Refraction of light through a prism; Dispersion of white light by a glass prism; Atmospheric refraction: twinkling of stars, advance sunrise and delayed sunset; Scattering of light: tyndal effect, why is the colour of the clear sky blue. **Electricity & circuits:** Electric cell, An electric circuit, electric switch, electric current, electric potential, ohm's law, factors on which resistance of conductor depends, grouping of resistors; series and parallel, specific resistance, heating effect of electric circuit and current, Practical application of heating effect of electric current, electric power chemical effect of current, electroplating. **Magnetic effects of electric current:** Magnetic field and field lines; magnetic field due to a current carrying conductor: straight conductor, circular current loop, solenoid, Right hand thumb rule, flaming's left -hand rule. Fleming's right hand rule, force on a current-carrying conductor in a magnetic field; electromagnet, electric bell, domestic electric circuit, motor and A.C. generator. **Subject related Pedagogy.**

	PHYSIAL EDUCATION
A	**Physical Education:** Meaning, Definition, Aim, Objective & Importance. History of Physical Education in India Pre and Post Independence Era. **Biological Basis of Physical Education:** Growth and development, Heredity and Environment, Types of body, Classification of personality (Kretcher's and Sheldon's classification). Dimensions of personality.
	Physical education in Ancient Greece, Rome, Germany, Denmark, Sweden and Russia. Health and Hygiene, Balanced diet and nutrition, Health related fitness, obesity and its management, First-Aid, **Communicable diseases:** Their causes, and preventions. School Health Programme and Personal Hygiene, Sports injuries and their preventions, Postural deformities their causes and preventions, Sports Medicine (Basic Idea), Physiotherapy and Rehabilitation, Physical fitness & Wellness. **Anatomy and Physiology:** Meaning and Definition of anatomy and physiology Anatomy & Physiology of Respiratory system, Blood Circulatory system, Skelton system, Muscular system, Endocrine system, Digestive system, Nervous system (Neuro transmission) Excretory system: Its organs structure and functions.
B	Ergogenic Aids, Doping and anti-doping, Factors influencing performance in sports. **Kinesiology and Biomechanics:** Meaning and definition of kinesiology and biomechanics, joints and their movements, levers, muscular analysis of motor movement, laws of motion, Principles of equilibrium, force, muscular analysis of various sports activities. Mechanical analysis of fundamental movements. **Kinesiology and biomechanics:** running, jumping throwing, pulling and pushing. **Psychology and Sociology in sports:** Meaning and definitions, Aim and objective of Psychology in sports. **Learning:** Learning process, Theories of learning, Laws of Learning, Transfer of learning. **Motivation:** Internal and external motivation, Psychological factors affecting sports performance. **Leadership:** Meaning, definition & types, leadership qualities. **Recreation:** Theories and principles of recreation, Recreation programmes for various age groups/categories. **Yoga Education:** History of Yoga, Meaning and definition, Aim and objective of yoga, Ashtanga yoga, Meaning of Ashtanga yoga, Various parts of Ashtanga yoga, Surya namaskar and its benefits, Pranayama: Its types and benefits, Strudhi Kriyas: Neti, Dhoti, Basti, Importance of yoga in daily life, Yoga as preventive measure for lifestyle diseases
C	**Test Measurement and Evaluation:** concept of test measurement and evaluation, measurement of athletics (track and field events) Major games and Minor games, Rules and Regulations of all games and sports, Sports and Games terminology, Sports current affairs, Sports/Games Federations, National and International games (Olympic Movement), Cups and Trophies, Stadiums, Tournaments and their Fixtures. Khelo India and Fit India Movement. **Sports Management:** Concept and principles of management, organisation and functions of sports Bodies, Intramural and extramural, management of infrastructure, equipments finance and persons, planning in sports, officiating,

	Sports training: concept of sports training, principles of sports training, Periodization, training methods, training programme for development of various motor qualities, technical and tactical preparation for sports, short term and long term training programmes, media and sports, computer applications in physical education and sports, National sports awards. **Subject related Pedagogy.**
	English
A	**Reading Comprehension:** One/two unseen passage (prose/poem) to assess the candidate's ability to comprehend, analyse and interpret text. **Language:** (Pedagogy of English)- Aims and objectives of teaching English at secondary level, Methods and approaches of teaching English language, Teaching aids, Use of ICT in classroom.
B	**Grammar and Usage-** This will include questions based on verb patterns, tenses, analysis of sentences, transformation of sentences, voices, narration, articles, determiners, auxiliaries (Primary & Modal), idiomatic expressions, phrasal verbs and part of speech in detail (Noun, pronoun, verb, adjective, adverb, conjunction, interjection, preposition). Basic phonetics- Word formation, vowel and consonant sounds, simple transcription.
C	Literature: Text based questions must be selected from the prescribed syllabus of the Board of School Education Haryana for classes VI to X, Difficulty level of the questions may be raised to UG Level.
	Fine Arts
A	Introduction of art, Fundamentals of visual art, the elements, Principal of art and design, Shadanga of Indian art, Imortance of art in life.
B	Traditional and modern techniques, Process and procedure in art (Painting, Sculpture, applied art) Perspective, Indian folk art.
C	Indian national flag and its evolution, Indian art history and development from pre-historic time to contemporary period including-applied art and graphic. **Subject related Pedagogy.**
	Social Studies
A	**General Geography**- Geography as a Social Study, The Solar System, The Earth- Motions, Globe, Latitudes and Longitudes, Major Spheres of the Earth, Inside our Earth-Layers and Rocks, Our Earth- Mountains, Plateaus, Plains, Volcanoes and Earthquakes, Development of Landforms- Various agents and processes, Atmosphere- Composition, Structure, air pressure, winds, precipitation and climatic regions, Hydrosphere and its importance, Tides and Ocean Currents. Water, Environment- Concept, ecosystem, pollutions, Hazards and Disasters. Human Environment Interactions, Resources- Land, soil, Water, Natural Vegetation and Wildlife Resources, Agriculture- Types and methods, Major crops and developments, Industries- Classification and distribution, Human Resource, Maps and their types. **Geography of India**- India-Size and Location Physiography and Physical structure, Drainage, Climate and Monsoon, Natural Vegetation and Wildlife, Water Resources, Agriculture- Major crops, their distribution and related problems, Minerals and Energy Resources, Major Manufacturing Industries- classification and distribution, Lifelines of National Economy. **Subject related Pedagogy.**

B	**Political Theory:** Nature Scope and Significance of Political Theory, State-Elements and various theories of its origin, Nature & functions, Sovereignty, Liberty, Equality, Justice, Right, Citizenship, Nationalism, Secularism, Consumers Protection Rights, Feminism. **Form of Government**: Democratic and Dictatorship, Parliamentary and Presidential, Unitary and Federal. **Democracy:** Concept, various types, theories and methods of representation in Democracy, Popular Struggle and various Movements for Democracy. Various Challenges to Democracy Inequality, Poverty, Economic Growth and Development, Illiteracy, Linguism, Religionlism, Communalism, Casteism, Separatism, Political Violence, National Integration, Gender issues, Religion, Marginalization. **Indian Constitution:** Constitutional Development and making of Constitution of India, Sources, Features, Preamble. Fundamental Rights and Duties, Directive Principles of State Policy. The Union Executive- President, Vice President, Prime Minister and Council of Ministers, Union Legislature – Composition, Procedure of Law making, Amendment Procedure, State legislature. Indian judiciary- Supreme Court, High Court, Judicial Review and Judicial Activities Public Interest litigation, Right to Information Act, Federalism, Development of Panchayati Raj Institutions and 73rd Constitutional Amendment, Election Commission, Electoral Process and Electoral Reforms, Politics of Defection, Party System in India, National and Regional Political Parties, Coalition Government, Politics of Reservation. **UNO:** Origin and evolution of UNO, Organs of UNO, Specialized Agency of UNO, Role of Security Council, Role of Secretary General of UNO, Democratization of UNO. **Foreign Policy of India**: Basic principles, India and its neighbours (Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka and China) relation with USA and Russia, Era of Cold War and Post-Cold War. NAM and its relevance, Collapse of Bipolarity, New World Order, European Union, SAARC, ASEAN, WTO, IME, World Bank, Disarmament, Globalization, Environmentalism. **Subject related Pedagogy.**
C	**Ancient India:** Sources of Ancient Indian History, Prehistoric Civilization: From Hunter-gatherer to Neolithic Revolution. Harappan Civilization: Sites and salient features etc. Religious Trends: Vedic, Buddhism and Jainism: Basic Facts and comparison. Mahajanapad Period: Polity and Economy Mauryan Empire: Administration and Policies. Foreign Invaders and their inclusion in Indian culture, Post Mauryan states and political developments in India, Southern states : Chalukayas, The Pallavas and Cholas, Trade and Commerce in Ancient India: Trade and major trade routes, urbanization. Gupta and Vardhana Empire: Socio-cultural life, Economy, administration etc. Expansion of Indian Culture in World. Art & Architecture from ancient to Post Gupta period. **Medieval India**: Sources of History of Medieval India (700AD to 1750AD). Dynasties and rulers in Early Medieval India (700AD to 1200AD): Tripartite Struggle, The Palas, The Pratiharas and Rastrakutas, King Dhahir and Anangpal, Suhaldev and Prithvi Raj Chauhan. Delhi Sultanate and Mughals: Administration & Policies,Vijaynagar Empire,Chattarpati Shivaji and Marathas, Medieval Art & Architecture, languages and Literature etc. Social-Religious Movements (Bhakti, Sufi, Tradition of Sikh Gurus, Nayanars and Alwars etc.) Trade and Commerce, Art & Architecture, Urban Centers , Agrarian Society during Medieval India

	Modern India: Sources of Modern Indian History, India in 18th Century, European Companies and their conflict in Bengal and other Indian states. Change in Land Revenue System and Early Indian Resistance. Revolution 1857: Causes, Events, Nature and Repercussion. Indian Renaissance of 18th century: Women and Low caste emancipation. British Education Policy. Colonization and its effect on indigenous textile industry: Origin of Industrialization. Urbanization and Architecture during Colonial Period. Rise of Nationalism, Indian National Movement (1885 1947), Role of Gandhi Ji, Neta Ji & INA Independence & Partition. Framing of Indian Constitution, Role of Haryana in Indian National Movement. Fifty years of Indian Independence. **World History:** History of Human Evolution: Origin of Homo Sapience. Prehistoric Man: History tools etc. Rise of Islam: Caliphate, Confucianism, Jews and Parsi Philosophies, Genghis Khan and Mongolian Empire, Feudalism in Europe during medieval period, the role of Church in the socio-political life of Europe. European Renaissance: Development of urban Centers in Medieval Europe. Colonization, Imperialism. **Subject related Pedagogy.**
D	**Agriculture:** Role of Agriculture in India, Agricultural Development in India during various Five Year Economic Plans, Farm - Products, Non - Farm Activities. **Factor of Production:** Land, Labour, Capital and Entrepreneur, Human capital. Theories of Rent, Wages, Interest & Profit, Unemployment and trends of unemployment in India. **Poverty:** Overview, Types, Measurement, Causes, Inter States Disparities, Poverty Estimation, Anti Poverty Measures/Schemes and Future Challenges. **Food Security:** Meaning, Causes, Green Revolution, Major Food Security Programs Including Public Distribution System and Its Progress in India, Buffer Stocks, Pillars of Food Security. **Development:** Meaning of Economic Growth, Economic Development and Sustainable Development, Measurement of Development- Conventional, HDI, HPI, PQLI and Hunger index, Developmental Comparison at Inter-State and International Level. **Sector of Indian Economy:** Scope of Economic Activities, Primary, Secondary and Tertiary Sector, Organised and Unorganised Sectors, Public and Private Sectors. **Money and Credit:** Meaning of Money, Functions, Modern Forms of Money, Commercial Banks and Their Role, RBI and its functions, Credit Creation, Money Multiplier, Formal and Informal Credit. **Globalisation and Indian Economy:** New Economic Policy - Liberalisation, Privatisation and Globalisation, Features, Favourable and Unfavourable Effect on Indian Economy. World Trade Organization (WTO) – Its Structure and Functions, Positive and Negative aspect of Globalisation. **Consumer Rights:** Consumer Protection Act 1986 (COPRA), Consumers Movements in India, Consumer Exploitation, Consumer Responsibilities, Consumer Rights and Its Progress. **Utility Analysis:** Utility- Meaning and Types, Cardinal Utility Analysis, Ordinal Utility Analysis, Indifference Curve Analysis. **Demand Analysis**: Demand- Meaning & Factors affecting it, Law of Demand, Elasticity of Demand. **Subject related Pedagogy.**

	Mathematics
A	Number system , Arithmetic and Trigonometry :Roman Numerals, Whole numbers, Natural numbers, Integers, Rational and Irrational numbers and Real numbers, Their properties and representation on number line, LCM, HCF of Natural numbers , Squares and square root, Cubes and cube root, Laws of exponents, Ratio and proportions, Percentage, Decimals, Fractions, Profit and loss, Discount, Time and work, Direct and Indirect proportion, Unitary method , Comparing quantities, Introduction to trigonometry and its application to find heights and distance .
B	**Algebra, Statistics and Probability:** Algebric expression and identities, Factorisation, Linear equations in one and two variables, Graphs of linear equations, Polynomials, Quadratic equations, Arithmetic Progression, Data Handling, Average, Pie diagrams, Bar diagrams, Histograms ,frequency polygons ,Measure of central tendency Mean, Median ,Mode, Probability, Theoretical approach.
C	**Geometry, Coordinate Geometry and Mensuration:** Euclid's Geometry, Lines and Angles, Lines of symmetry, Triangle and its properties, Types of triangles and various kind of its centres, Perimeter and area, Congurence and Similarity of triangles, Regular Polygon , Quadrilaterals, Circles, Area related to circles ,Coordinate Geometry , Heron's formula, Pythagorean theorem, Visualising Solid shapes, Area of polygon, Surface area and volume of cube, Cuboid, cylinder, Right circular cylinder, cone, right circular cone and sphere, Surface area and volume of combination of solids. Subject related Pedagogy.
	Home Science
A	Concept of food, Nutrition and health, Types and function of food, Importance and methods of cooking food, Nutrients of food, Concept of Nutrition, Over nutrition and under nutrition, Food safety, Food storage and good preservation, Food and personal hygiene and cleanliness, Meal planning- Concept, Importance, Principles and factors affecting it, Balanced diet, Therapeutic diet, Weights and measures commonly used in kitchen, Infections and Lifestyle diseases.
B	Home, family and values- Concept and importance, Types of rooms in house, Lighting and ventilation in a house, Kitchen design and layout, Decorations of walls, Dining table arrangements, Flower arrangements, Furniture choices selection, Use of colours in various aspects and areas in a house, Our behaviour, Household Routine, Patient's room in a house, Floor decoration, Disposal of waste, Cleaning in a house, Expenses of an average Indian household, Budget-concept, Types and advantages, Management in daily life, Management of resources – time, energy and money, work simplification techniques, consumer education, Safety and management in emergency situation, Pesticides, First-aid in house.
C	Human growth and development- Concept, similarities and differences between growth and development, Factors affecting growth and development, principles underlying growth and development, Infancy, Childhood and Adolescent – concept, special features/characteristics and milestones of each stage. Concept of Home Science – its evolution, fields/sub-disciplines, relevance, career and scope. Our apparel, selection of clothes, Fibre and fabric, types, Characteristics and classification of fibres, care and maintenance of fabrics and apparel (esp. cotton, wool, silk and synthetics), cleaning of clothes, Equipment used in cleaning clothes, cleaning and finishing agents used in routine care, The art of knitting, Basic stitches used in stitching and embroidery, beautifying the apparel, warp and weft. Subject related Pedagogy.

Level-III

	Part I. Syllabus for Child Development and Pedagogy
A	**Child Development (Elementary School Child)** • Concept of development and its relationship with learning • Principles of the development of children • Influence of Heredity & Environment • Socialization processes: Social world & children (Teacher, Parents, Peers) • Piaget, Kohlberg and Vygotsky: constructs and critical perspectives • Concepts of child-centered and progressive education • Critical perspective of the construct of Intelligence • Multi-Dimensional Intelligence • Language &Thought • Gender as asocial construct; gender roles, gender-bias and educational practice • Individual differences among learners, understanding differences based on diversity of language, caste, gender, community, religion etc. • Distinction between Assessment for learning and assessment of learning; School-Based Assessment, Continuous & Comprehensive Evaluation: perspective and practice • Formulating appropriate questions for assessing readiness levels of learners; for enhancing learning and critical thinking in the classroom and for assessing learner achievement.
B	**Concept of Inclusive education and understanding children with special needs** • Addressing learners from diverse back grounds including disadvantaged and deprived • Addressing the needs of children with learning difficulties, "impairment" etc. • Addressing the Talented, Creative, Specially abled Learners **Learning and Pedagogy** • How children think and learn; how and why children„ fail" to achieve success in school performance. • Basic processes of teaching and learning; children's strategies of learning; learning as a social activity; social context of learning. • Child as a problem solve rand a "scientific investigator" • Alternative conceptions of learning in children, understanding children's "errors" as significant steps in the learning process. • Cognition & Emotions • Motivation and learning • Factors contributing to learning-personal & environmental • Bandura's Social Learning: Constructs and Critical Perspective.
	Part II: Syllabus for Language
A	**Language I (Hindi)**
i.	**Language Comprehension** Reading unseen passages-two passages one prose or drama and one poem with questions on comprehension, inference, grammar and verbal ability (Prose passage may be literary, scientific, narrative or discursive)

ii	**Pedagogy of Language Development** • Learning and acquisition • Principles of language Teaching • Role of listening and speaking; function of language and how children use • IT as a tool • Critical perspective on the role of grammar in learning a language for communicating ideas verbally and in written form; • Challenges of teaching language in a diverse classroom; language difficulties, errors and disorders • Language Skills
iii	Teaching-learning materials: Textbook, multi-media materials, multi lingual resource of the classroom
B	**Language-II (ENGLISH)**
i	**Comprehension** Two unseen prose passages (discursive or literary or narrative or scientific) with question on comprehension, grammar and verbal ability
ii	**Pedagogy of Language Development** Learning and acquisition Principles of language Teaching Role of listening and speaking; function of language and how children use it as a tool Critical perspective on the role of grammar in learning a language for communicating ideas verbally and in written form; Challenges of teaching language in a diverse classroom; language difficulties, errors and disorders Language Skills
iii	Teaching- learning materials: Textbook, multi-media materials, multi lingual resource of the classroom
	PART III Syllabus to General Studies
A	Haryana related history, current affairs, literature, Geography, Civics, Environment, Culture, Art, Traditions, and Welfare Schemes of Haryana Government.
B	**General Intelligence &Reasoning:** It would include questions of both verbal and non-verbal type. This component may include questions on analogies, similarities and differences, space visualization, spatial orientation, problem solving, analysis, judgment, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non-verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. **The topics are:** Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Classification, Symbolic/Number Classification, Figural Classification, Semantic Series, Number Series, Figural Series, Problem Solving, Word Building, Coding & De-coding, Numerical Operations, Symbolic Operations, Trends, Space Orientation, Space Visualization, Venn Diagrams, Drawing inferences, Punched hole/ Pattern- folding & un-folding, Figural Pattern-folding and completion, Indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small & Capital letters/numbers coding, decoding and classification, Embedded Figures, Critical thinking, Emotional Intelligence, Social Intelligence.

C	**Quantitative Aptitude:** The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The scope of the test will be computation of whole numbers, decimals, fractions and relationships between numbers, Percentage. Ratio & Proportion, Square roots, Averages, Interest, Profit and Loss, Discount, Partnership Business, Mixture and Allegation, Time and distance, Time & Work, Basic algebraic identities of School Algebra & Elementary surds, Graphs of Linear Equations, Triangle and its various kinds of centers, Congruence and similarity of triangles, Circle and its chords, Tangents, Angles subtended by chords of a circle, Common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular or square base, Trigonometric ratio, Degree and Radian Measures, Standard Identities, Complementary angles, Heights and Distances, Histogram, Frequency polygon, Bar diagram & Pie chart.
	Part-IV Subject Specific Syllabus
	Chemistry Syllabus
A	Matter in Our Surroundings, Is Matter around us Pure, Atoms and Molecules, Structure of the Atom, Chemical Reactions and Equations, Acids, Bases and Salts, Metals and Non-Metals, Carbon and Its Compounds.
B	Some Basic Concepts of Chemistry, Structure of Atom, Classification of Elements and Periodicity in properties, Chemical Bonding and Molecular Structure, Chemical Thermodynamics, Equilibrium, Redox Reactions, Organic Chemistry Some Basic Principles and Techniques, Hydrocarbon.
C	Solutions, Electro Chemistry, Chemical Kinetics, d & f Block Elements, Co ordination Compounds, Halo Alkanes & Halo Arenes, Alcohols, Phenols and Ethers, Aldehydes, Ketones and Carboxylic Acids, Amines, Biomolecules. Subject related Pedagogy.
	Biology
A	**Cel**l: The Fundamental Unit of Life, Biomolecules, Cell Cycle and Cell Division. **Plant Tissues** **Diversity in the living world:** The living world, Biological Classification, Plant Kingdom, Economic Importance of Plants. **Structural Organisation in Plants:** Morphology and anatomy of Flowering plants, Reproduction in plants (Asexual & Sexual reproduction), Various life processes in plants, Movement & Coordination, Seed germination & dormancy in plants. **Plant physiology:** Transport in plants, Mineral nutrition, Photosynthesis in plants, Respiration in plants, Plant growth and development.
B	**Animal Tissues** Animal Kingdom, Structural organisation in animals, Life processes in animals (including various systems in animals/human beings), sense organs. Reproduction in animals & development, Human reproduction & reproductive health, Economic Zoology. **Human physiology:** Digestion & Absorption, Breathing & Exchange of gases, Body fluid & circulation, Excretory products & their elimination, Locomotion & movement, Neural control and coordination, Chemical coordination & Integration. Neural control and coordination, Chemical coordination & Integration

	Biology in Human Welfare: Disease: Types and Causes, agents, treatment & prevention, Human health & disease, Strategies for enhancement in food production, Microbes in human welfare. **Food production:** Improvement in food resources, Animal husbandry.
C	**Ecology:** Organism and population, Ecosystem, pollution, Biogeochemical cycles, Biodiversity & Conservation. Natural resources and their management, Environmental issues. **Genetics & Evolution**: Principles of Inheritance & Variation, Molecular basis of Inheritance, Evolution. **Biotechnology:** Principles & processes, Biotechnology & its applications. **Subject related Pedagogy.**
	Physics
A	**MECHANICS:** Units and Measurement, Motion in a Straight line, Motion in a Plane, Laws of Motion, Force and friction, work, energy and power System of Particles and Rotational motion, Gravitation, Mechanical Properties of Solids, Mechanical Properties of Fluids, Thermal Properties of Matter, Thermodynamics, Kinetic Theory of gases, Sound, Oscillations and Waves.
B	**ELECTROMAGNETISM:** Electric Charges and Fields, Electrostatic Potential and Capacitance, Current Electricity, Moving Charges and Magnetism, magnetic effect of electric current, Magnetism and Matter, Electromagnetic Induction, Alternating Current, Electromagnetic Waves.
C	**LIGHT:** Ray Optics and Optical Instruments, Wave Optics, Human eye. **MODERN PHYSICS:** Dual Nature of Radiation and Matter, Atoms, Nuclei, Semiconductor Electronics: Materials, Devices and Simple Circuits. **Subject related Pedagogy.**
	Physical Education
A	**Physical Education:** History of Physical Education in India Pre and Post Independence Era. **Biological Basis of physical Education:** Growth and development, heredity and environment types of body, classification of personality (Kretcmer's and Sheldon's classification). Dimensions of Personality. **Sociological Foundation of Physical Education:** Sports and socialisation, role of institutions towards participation in games and sports (family, society and school). Physical Education in Ancient Greece, Rome, Germany, Denmark, Sweden and Russia. **Health & Hygiene**: Guiding principles of health and health education. Balanced Diet and Nutrition, Health related fitness, Obesity and its management, First-Aid. **Communicable Diseases:** Their causes and preventions. School Health programme and personal Hygiene, Sports injuries and their preventions, Postural deformities: their causes and preventations , Sports Medicine, Physiotherapy and Rehabilitation,. Physical Education and Sports for (CWSN) children with special needs-Divyang, Physical fitness, Wellness.

	Anatomy and Physiology: Meaning and definition of anatomy and physiology anatomy and physiology of - respiratory system, blood circulatory system, skelton system, muscular system, endocrine system and Exocrine System digestive system, nervous system (Neuro transmission). **Excretory system:** Its organs structure and functions.
B	Ergogenic Aids, Doping and Anti Doping, Factors influencing performance in sports. **Kinesiology and Biomechanics**: Meaning and definition of kinesiology and Biomechanics, Joints and their movements, Planes and axis, Kinetics and kinematics; Linear and angular, Levers, Muscular analysis of motor movement, Laws of motion, Principle of Equilibrium, Force, Muscular analysis of various sports activities. Mechanical Analysis of fundamental movements. Kinesiology and Biomechanics: Running, Jumping, throwing, Pulling and pushing. **Psychology and Sociology in sports**: Meaning and definitions, Aim and objective of Psychology and sociology in sports. **Learning:** Learning process, Theories of learning, Laws of Learning, Transfer of earning. **Motivation**: Internal and external motivation, Psychological factors affecting sports performance. **Leadership:** Meaning, Definition and types, Leadership qualities. **Recreation**: Theories and principles of recreation, Recreation programmes for various age groups/categories. **Yoga Education:** History of Yoga, Meaning and definition, Aim and objective of yoga, Ashtanga yoga, Meaning of Ashtanga yoga, Various parts of Ashtanga yoga, Surya namaskar and its benefits, Pranayama: Its types and benefits, Strudhi Kriyas: Neti, Dhoti, Basti, Importance of yoga in daily life, Yoga as preventive measure for lifestyle diseases.
C	**Test Measurement and Evaluation**: Concept of test measurement and evaluation, Principles of measurement and evaluation, Skill test for badminton, Basketball, Hockey soccer, Vollyball and Lawn Tennis, Measurements of Athletics (Track and field events) Major game, Minor games, Rules and Regulation of all games and sports, Sports & games terminology, Sports current affairs (India & world), Sports/Games Federations, National and International games, (Olympic Movement) Cups and Trophies Stadiums, Tournaments and their fixtures, Khelo India & Fit India movement, Ground Marking for athletics and sports/games. **Sports Management:** Concept and Principles of management, Organisation and functions of sports bodies, Intramural and Extramural, Management of Infrastructure, Equipments, Finance and personal, Planning in sports, officiating. Principals, methods and techniques of teaching, concept and techniques of supervision. **Sports Training:** Concept of sports training, Principles of sports training, Periodization, Training methods, Training program for development of various motor qualities, Technical and tactical preparation for sports, Short term and long term training programs, Media and sports, Computer applications in physical education & sports, National sports awards. Research, Nature, Scope and types of Research, Methods of Research. **Subject related Pedagogy.**

	English
A	**Reading Comprehension:** One/two unseen passage (prose/poem) to assess the candidate's competence in the language; the necessary skills to derive meaning, analyse and information gathered through reading. **Language:** Pedagogy of English)- Aims and objectives of teaching English at school level, methods and approaches of teaching English language, ICT of/for/in Education.
B	**Grammar and Usage-** This will include questions based on verb patterns, tenses, analysis of sentences, transformation of sentences, voices, narration, articles, determiners, auxiliaries (Primary, Modal) idiomatic expressions, phrasal verbs and parts of speech in detail (Noun, pronoun, verb, adjective, adverb, conjunction, interjection, preposition). **Basic Phonetics-** Word formation, vowel and consonant sounds, simple transcription, stress and intonation.
C	**Literature:** Text based questions must be selected from the prescribed syllabus of the Board of School Education Haryana for classes IX to XII, Difficulty level of the questions may be raised to PG Level.
	SOCIOLOGY
A	**Part – 1: Basic Concepts** • Development of Sociology in West and India • Sociology: Meaning, Scope and Subject Matter. • Sociology and other Social Sciences. • Society & Social Group. • Social Stratification– Caste & Class system, Varna Systems. • Status and Role • Social Control • Culture • Socialization • Social Structure • Social Process & Social Deviance • Social Change and Mobility • Family, Marriage & Kinship
B	Part – 2 : Indian Society & Social Change in India • Tribe – National Development & Tribal Development, Tribal Identity Today. • Capitalism, Commoditization & Consumption. • Globalization, Liberalization & Marketisation. • Social inequality and exclusion- Social Inequality, Prejudices, discrimination, Social Exclusion – SC/ST/Woman/Divyangjan, Poverty Line, Untouchability, Other Backward Class, Commission, Adivasi Struggles, displacing adivasis & Rehabilitation, The Struggle for Women's Equality and Rights, The struggles of the Differently Abled. • Cultural diversity and India as National State, Difference between assimilationist and integrationist policies, Minority Rights and Nation Building, Communalism, secularism and the nation state, State and Civil Society. • Structural Change – Colonialism & Capitalism, Urbanization & Industrialization, Impact of British industrialization on India, Industrialization in Independent India, Urbanization in Independent India, Metropolitan Cities, Growth Rate of Urban Population in India, Smart City.

	• Cultural Change Concept - Social Reform Movements in the 19th and Early 20th Century. • Constitution & Social Change - Fundamental Right, Social Justice, Panchayati Raj, Gram swarajya, Political Parties & Pressure groups. • Change and Development in Rural & Urban Society - Agrarian Social Structure, The Impact of Land Reforms, Green Revolution, Migration, Contract farming, globalisation of agriculture, Rural & Agriculture Development Programmes, Industrialisation in India, Early Years of Indian Independence & After Independence. • Mass Media and Communications - The beginning of Modern Mass Media, Mass Media in British rule & Independent India, Print & social media. • Social Movements – Concept & Features, Social change and social movements, Ecological movement, Peasant movements, Workers movements, Caste Based Movements, Backward Class Movements, Tribal movements, Woman's Movements & NGO.
	Part – 3: Sociological Thought/Social Research • Karl Marx, Durkheim, Max Weber – Introduction & Theories • G.S. Ghurye, D.P. Mukerji, A.R. Desai & M.N. Srinivas - Introduction & Theories • Social Research – Meaning, Stages and Types, Data & Data Type, Tools of Data Collection & Theories. • Demography- Theories of Population, Concepts - Birth rate, Death rate, Natural increase, Fertility rate, Infant mortality, Life Expectancy, Sex Ratio, Age Structure, Dependency Ratio, Demographic Dividend, Literacy Rate, Size & Growth of Indian Population- 1901 to 2011, Epidemic & Pandemic diseases, Age Structure of the Indian Population, Rural Urban Linkages and Divisions, Population Policy in India. • Social Ecology- Social Environments, Interaction between Environments & Society, Major Environmental Problem and Risks, Natural & Man made Environments Disasters, Sustainable Development. • Sociological Perspective on Markets and The Economy, Market concept, Weekly Tribal Market, Caste Based Market, Jajmani System, Traditional business Communities, The Virtual Market.
	Computer Science
A	**Computer System:** History, Generations, Characteristics, Advantages and Limitations, Applications and Types of a Computer System CPU, ALU & CU, Input/output Devices. **Memory:** Units of Memory, Types of Memory. **Classification of Programming Language:** High level language, Machine level language. History, Architecture and Characteristics of Microprocessor. **Encoding Schemes and Number System:** ASCII, UNICODE, Number system and conversions. **Computer Software:-** System software (Operating system: its need and functions, Compiler, Interpreter, Assembler), Application Software, Utility Software, Device Drivers, MS Window: Desktop, Taskbar, Icons, This PC, Recycle Bin, File Explorer, Edge Browser, Cut, Copy, Paste, Theme and background. **Word Processor (MS Word):** Components, Formatting, Alignment, Indents , Borders and Shading ,Symbols, Shapes, ClipArt, Word Art, Headers and Footers, Tables, Page Setup, Printing.

	Spreadsheet (MS Excel): Components, Workbook, Worksheet, Formatting, Cell Address, Cell pointer, Active cell, range of cells, Text, formulas, Date/Time, Charts, Types of charts, Components of chart, creating chart in MS Excel, Printing worksheet/charts. Functions: Sum(),Average(),Max(),Min(), Count( ) **Presentation Software (MS Power-Point):** Components, Elements of a slide, Creating and saving a Presentation, Slide layouts, Slide Views, Formatting, ClipArt, Pictures, Shapes, Headers/Footers and slide numbers. Animation Schemes, Sound effects, Slideshow.
B	**Problem Solving and Software Engineering (SDLC and Testing) :**
	Problem Solving Cycle: Analyze, Design, Coding, Implementation and Testing. **Algorithm:** Need of algorithm, Design Algorithm using Flow chart. Programming: Concept and need of programming. **Program Constructs:** Sequence, Selection and recurrence. **Major stages in SDLC**- Requirement gathering and analysis (Survey), Investigation and fact recording (Feasibility study), Software design, Development (Coding), Testing, Implementation, Maintenance. Testing- Black box and White box testing, Levels of testing- Unit testing, Integration testing, System testing and Acceptance testing. **Getting Started with Python:** Features of Python, working with Python interpreter in interactive and script mode, structure of a program, identifiers, keywords, constants, variables, types of operators, precedence of operators, data types, statements, expressions, evaluation and comments, input and output statements, data type conversion, debugging. **Control Structures:** Sequence, Selection (decision) and repetition (iteration). **Function:** Need of functions, user defined functions, built-in functions. **Strings**: Initializing and accessing strings, string operations. **List:** List operations **Tuples:** Creating, initializing, accessing elements, operations on Tuples. **Dictionary:** Concept of key-value pair, mutability, creating, initializing, dictionary operations. **Emerging Trends**, Cyber Security and Societal Impacts: Artificial Intelligence, Machine Learning, Natural Language Processing, Robotics, Big Data, Data Science, Internet of Things, Sensor, Smart cities, Cloud computing, Grid Computing, Block chain technology, 5G network, E- commerce. **Cyber Security:** Computer virus, Malware, Adware, worms, Trojan, Ransom ware, spyware, hackers and crackers, Safety measures, identity protection, proper usage of passwords, confidentiality of information. **Digital footprints:** Etiquettes of net surfing and for communication through social media, intellectual property rights (IPR), Cybercrime and Cyber laws, Hacking, Phishing, Cyber Bullying, Indian IT Act, Cyber Crime Prevention. Impact on Health, Health Problems related to use of Technology such as impact on Eyes, Awareness about physical problems. **Web Designing using HTML:** History of HTML, Text editor, Basic structure of HTML web page, creating and saving an HTML document, accessing a web page using web browser, container and empty elements. HTML elements, Text formatting elements, Lists, Inserting images, tables and links.

C	Database, MS Access and SQL Database: Need, Advantages, Concept of files, fields & records, Need of normalization, Normal forms. **MS Access**: Features, Components, Data Types, Elements of MS Access Database, Creating/Opening a Database, Primary Key, Setting Primary Key, Creating Table in Datasheet view & Design View, Viewing, editing and printing Tables. **SQL:** Advantages, Data types, Commands, Clauses, Functions. Communication Technology and Computer Network: Transmission media (guided and unguided), Wired/wireless communication, Wi-Fi, Bluetooth, Cloud Computing (Public and Private) Computer Network, Networking and its need, Types of computer Networks, Network Models and their protocols. **Internet:** Internet, History of internet, Working of internet, Internet requirements, Firewalls, World Wide Web, Web Browsers, Web Servers, Web Portal, Web Site, Search Engines, Web address/URL, Web Page, Concept of E-mail, Blogs, News Groups, E-mail, Video conferencing. **Internet Protocols:** TCP/IP, FTP, TELNET, SMTP, HTTP, HTTPS, POP3. Programming in C++ and Data structure through C++: OOP Concepts: Object, Class, Encapsulation, Data Hiding/Abstraction, Inheritance/Reusability, Polymorphism/Overloading. **Data types,** Operators & Expressions, Control Statements & Loops. Array (1 D & 2 D) & Structure: Creating structure variables, Array of structure, Passing structure members to function. Class & Object in C++, Class declaration, Data members & member functions, Private & public members, Function defined inside & outside the class, Nesting member functions, Accessing class member functions, Use of scope resolution (::) operator. Array used in class, Friend Function, Constructor & Destructor. **Inheritance:** Base class, Derived class, Visibility modes, Types of Inheritance. Data Structure (through C++): Data, Data item, Data Structure, Stack, Push and Pop operation on stack, Linear Queue, Insertion & Deletion in Linear Queue, Array Sorting. **Subject related Pedagogy.**
	Commerce
A	**Business**, **Trade and Commerce:** Business an introduction, Classification of Business activities, Business Risk: Nature and causes. **Forms of Business organisation:** Sole Proprietorship, Joint Hindu family business, partnership organisation, co-operative society, company organisation, choice of form of business organisation. **Private, Public and Global Enterprise:** Departmental undertaking, Statutory Corporation, Government company, Global enterprise/Multi National company, public private partnership (PPP). **Business Services:** Banking, Insurance, postal and telecom services. **Emerging modes of Business:** E-commerce, E-Business. **Social Responsibility of Business**: Social responsibility, Business Ethics. **Nature and Significance of Management:** Management an introduction, Nature of management, levels of management, functions of management, Co-ordination. **Principles of Management:** Principles of Scientific management by Taylor, General Principles of Management by Fayol. **Business Environment:** Concept of Business Environment, Dimensions of Business Environment, Concept of Demonetisation.

	Planning: Concept of planning, Types of plans. **Organising:** Organising as a process, Organisational structure, Delegation and decentralisation. **Staffing:** Meaning and importance, Recruitment, Selection, Training and Development. **Directing:** Importance and Principles, Supervision, Motivation, Leadership, Communication. **Controlling**: Concept of controlling, controlling process, Controlling techniques. **Business Finance:** Financial management, financial decision, Financial planning, capital structure, fixed and working capital. **Marketing and Marketing Mix:** Marketing, Elements of Marketing Mix.
B	**Introduction to Accounting:** Concept of Accounting, Basic Accounting terms, **Theory Base of Accounting**: Fundamental Accounting assumptions: GAAP, Basic accounting concepts, Systems of accounting, Basis of Accounting, Accounting standards, Goods and service tax. **Recording of Transactions-I:** Business transactions and source Documents, Accounting Equation, Double entry system, Journal, Ledger. **Recording of Transactions-II**: Cash Book, Subsidiary Books. **Bank Reconciliation Statement:** Preparation of Bank Reconciliation statement as per cash book, Preparation of Bank Reconciliation statement as per pass book. **Trial Balance and Rectification of Errors:** Trial Balance, Rectification of Errors. **Depreciation, Provisions and Reserves**: Depreciation, provisions and reserves. **Financial Statements with Adjustments of sole proprietorship**. **Accounting for Partnership-Basic concepts:** Fundamentals of partnership, Special aspects of partnership Accounts, Maintenance of capital accounts of partners, Distribution of profit amongst partners, Past Adjustments, Guarantee of profit to a partner. **Reconstitution of Partnership Firm –Admission of a Partner:** Change in profit sharing ratio, Goodwill, Admission of a new partner, New profit sharing ratio and sacrificing ratio, Treatment of goodwill, Adjustment of reserves, accumulated profits and losses, Revaluation of assets and Reassessment of liabilities, Adjustment of capitals. **Reconstitution of a Partnership Firm-Retirement/Death of a Partner**: Ascertaining the amount due to retiring/Deceased partner, New profit sharing Ratio and Gaining ratio, Treatment of Goodwill, Adjustment of reserves and accumulated profits and losses, Adjustment of Revaluation of assets and reassessment of liabilities, Disposal of amount due to retiring partner, Adjustment of partner's capitals, Death of a partner. **Dissolution of Partnership Firm**: Dissolution of partnership firm and partnership, settlement of Accounts, Accounting treatment.

C	**Formation of a Company:** Stages in formation of a company, Documents used in formation of a company. **Sources of Business Finance:** Concept, owned funds and borrowed funds. **Accounting for Share Capital:** Meaning, nature and types of share capital, Nature and classes of shares, Accounting treatment of issue and forfeiture of shares. **Issue of Debentures**: Meaning of Debentures, Types of Debentures, Issues of Debentures (Accounting treatment), Terms of issue of Debentures, Interest on Debentures, Writing off discount/loss on issue of Debentures. **Financial Statements of a Company**: Types of financial Statements. **Accounting Ratios**: Types of Accounting ratios, Meaning, Objectives, advantages and limitations of accounting ratios. **Cash Flow Statement:** Classification of activities for preparation of cash flow statement, preparation of cash flow statement as per AS3. **Overview of Computerised Accounting System:** Introduction: Application in Accounting, Features of computerised Accounting system, structure of CAS, Software packages; generic, specific, tailored. **Accounting Application of Electronic Spreadsheet:** Concept and features of electronic spread sheet, Application in generating Accounting Information-Bank reconciliation statement, Asset accounting, loan, repayment of loan schedule, ratio analysis. **Data representation-** Graphs, charts and diagrams. **Computerised Accounting System:** Steps in installation of CAS, codification and Hierarchy of account heads, creation of accounts, Data; entry, validation and verification, Adjusting entries, preparation of Balance sheet, Profit and loss account with closing and opening entries, Need and security features of the system. **MSME and Business Entrepreneurship** : Meaning of small scale enterprise as per MSMED Act,2006 , Entrepreneurship, Meaning and types of Intellectual property rights. **Internal Trade**: Wholesale trade, Retail trade, GST. **International Trade:** International trade – an introduction, International trade institutions and agreement. **Consumer Protection:** Introduction and importance of consumer protection, Consumer protection Act 1986 (Amendments in 2019) **Subject related Pedagogy.**
	Geography
A	**Geography of India:** India-Size, Location and neighbouring countries, Physical structure and Physiographic divisions, Drainage, Climate and Monsoon, Natural Vegetation and Wildlife, Natural Hazards and Disasters, Water Resources, Land Resources and Agriculture, Minerals and Energy Resources, Manufacturing Industries, Population - Distribution, Density, Growth, Composition, Human Settlements-Types, Patterns and Distribution, Transport and Communication, International Trade, Hazards and Disasters in India, Planning and Sustainable Development in Indian Context, Geographical Perspective on Selected Issues and Problems, Subject Related Padagogy.

B	**Physical Geography:** Geography as a Discipline, its development and scope, Solar system, Motions of the Earth, The Origin and Evolution of the Earth, Origin and distribution of Oceans and Continents, Earth's Interior- Structure and composition, Geomorphic Processes, Landforms and Their Evolution, Composition and Structure of Atmosphere, Solar Radiation, Heat Balance and Temperature, Atmospheric Circulation and Weather Systems, Water in the Atmosphere, World Climate and Climate Change, Oceanic Water and its movement ,Biodiversity and Conservation **Subject Related Pedagogy.**
C	**Human Geography**: Human Geography: Meaning, principles, Nature and Scope, Human Development, Economic activities- Primary, Secondary, Tertiary and Quaternary Activities, World Population - Distribution, Density, Growth and Composition, Transport and Communication, International Trade, Subject Related Pedagogy.
	Political Science
A	**Political Theory:** Nature Scope and Significance of Political Theory, Decline and Resurgence of Political Theory, State-Elements and various theories of its origin, Nature & functions, Sovereignty, Liberty, Equality, Justice, Rights, Citizenship, Nationalism, Secularism, Peace and Concept of Development, Constitutionalism, Consumers Protection Rights, Feminism. **Form of Government:** Democratic and Dictatorship, Parliamentary and Presidential (with reference to UK, India and USA). Unitary and Federal (with reference to UK, India and USA). **Democracy:** Concept, various types, theories and methods of representation in Democracy, Popular Struggle and various Movements for Democracy. Various Challenges to Democracy, Inequality, Poverty, Economic Growth and Development, Illiteracy, Linguism, Religionlism, Communalism, Casteism, Separatism, Political Violence, National Integration, Gender issues, Religion, Marginalization.
B	**Indian Constitution:** Constitutional Development and making of Constitution of India, Sources, Features, Preamble and Political Philosophy, Citizenship. Fundamental Rights and Duties, Directive Principles of State Policy, The Union Executive- President, Vice President, Prime Minister and Council of Ministers, Union Legislature – Composition, Procedure of Law making, Committee System, Amendment Procedure, Socio-Political impact of Constitutional Amendment, State legislature. **Indian judiciary**- Supreme Court, High Court, Judicial Review and Judicial Activities Public Interest litigation, Right to Information in India. Federalism and its working with reference to Union & States relations, NITI Aayog and National Development Council (NDC), Public Policy, Official language, Development of Panchayati Raj Institutions and 73rd Constitutional Amendment and 74th Amendment regarding Urban Local Government, Election Commission, Electoral Process and Electoral Reforms, Politics of Defection, Party System in India, National and Regional Political Parties, Interest Groups and Pressure Group, Coalition Government, Politics of Reservation.

C	**International Relation & Politics:** Evolution and various approaches to the study of International Relations & Politics, National power, National Interest, Balance of Power, Collective Security, World Government, New International Economic order, World Trade Organisation. **UNO:** Origin and evolution of UNO, Organs of UNO, Specialized Agency of UNO, Role of Security Council, Role of Secretary General of UNO, Democratization of UNO, UN and Unipolar World, UN and Security in Contemporary World, UN and Human Rights. **Foreign Policy of India**: Basic principles, India and its neighbours (Pakistan, Nepal, Bhutan, Bangladesh, Srilanka and China) relation with USA and Russia, Era of Cold War and PostCold War. NAM and its relevance, Collapse of Bipolarity, New World Order, European Union, SAARC, ASEAN, WTO, IME, World Bank, India's role in G-7, G-20, SCO and BRICS, Disarmament, India's Security Strategy, Nuclear Policy of India, Globalization, Environmentalism, International Terrorism. **Subject related Pedagogy.**
	HISTORY
A	**Ancient India:** Sources of Ancient Indian History, Prehistoric Civilization: From Hunter-gatherer to Neolithic Revolution. Harappan Civilization: Sites and salient features etc. Religious Trends: Vedic, Buddhism and Jainism: Basic Facts and comparison. Mahajanapad Period Polity and Economy, Mauryan Empire: Administration and Policies. Foreign Invaders and their inclusion in Indian culture, Post Mauryan states and political developments in India, Southern states : Chalukayas, The Pallavas and Cholas, Trade and Commerce in Ancient India: Trade and major trade routes, urbanization. Gupta and Vardhana Empire: Socio-cultural life, Economy, administration etc. Expansion of Indian Culture in World. Art & Architecture from ancient to Post Gupta period.
B	**Medieval India:** Sources of History of Medieval India (700AD to 1750AD). Dynasties and rulers in Early Medieval India (700AD to 1200AD): Tripartite Struggle: The Palas, The Pratiharas and Rastrakutas, King Dhahir and Anangpal, Suhaldev and Prithvi Raj Chauhan. Delhi Sultanate and Mughals: Administration & Policies, Vijaynagar Empire, Chattarpati Shivaji and Marathas, Medieval Art & Architecture, languages and Literature etc. Social- Religious Movements (Bhakti, Sufi, Tradition of Sikh Gurus, Nayanars and Alwars etc.), Trade and Commerce, Art & Architecture, Urban Centers , Agrarian Society during Medieval India.
C	**Modern India:** Sources of Modern Indian History. India in 18th Century. European Companies and their conflict in Bengal and other Indian states. Change in Land Revenue System and Early Indian Resistance. Revolution 1857: Causes, Events, Nature and Repercussion. Indian Renaissance of 18th century: Women and Low caste emancipation. British Education Policy. Colonization and its effect on indigenous textile industry: Origin of Industrialization. Urbanization and Architecture during Colonial Period. Rise of Nationalism, Indian National Movement (1885-1947), Role of Gandhi Ji, Neta Ji & INA, Independence & Partition, Framing of Indian Constitution, Role of Haryana in Indian National Movement. Fifty years of Indian Independence.

D	**World History:** History of Human Evolution : Origin of Homo Sepienn. Prehistoric Man: History, tools etc. Mesopotamian, Egyption, Greek and Roman Civilizations. Rise of Islam: Caliphate, Crusade and Confucianism, Jews and Parsi Philosophies, Genghis Khan and Mongolian Empire, Feudalism in Europe during medieval period, the role of Church in the socio-political life of Europe. European Renaissance: Development of urban Centers in Medieval Europe. Maya Civilization and Inca Civilization, Nationalism in Europe during 17-19th Centuries. Nationalism in Indo-China, Colonization, Imperialism, Modernization in Japan, China : From European colony to communist state. Subject related Pedagogy.
	Economics
A	**Economics:** Meaning, Definitions, Scope, Economic Problem, Production Possibility Curve (PPC). **Data Collection**: Sources of Data, Methods of Data Collection, National Sample Survey Organization (N.S.S.O.),Census of India. **Data Presentation:** Geometric Forms (Bar and Pie Diagram), Frequency diagrams (Histogram, Polygon and Ogive), Arithmetic line graphs (Time Series Graph). **Measure of Central Tendency:** Arithmetic Mean (Simple and Weighted), Harmonic Mean, Geometric Mean, Median, Mode, Decile, Quartile, Percentile. **Measures of Dispersion:** Range, Quartile Deviation, Mean Deviation, Standard Deviation, Measures of Relative Dispersion. **Correlation**: Scatter Diagram, Karl Pearson's Method, Spearman's Rank Correlation Method, Con-current Deviation Method. **Index Numbers**: Meaning, Various types of Index Numbers, Uses of Index Number, Consumer Price Index (CPI). Wholesale Price Index, AICPIN, Time and Factor Reversal Tests, Base shifting. **Indian Economy on the Eve of Independence:** Characteristics of Indian Economy- Pre and Post Independence. **Economic Planning:** Meaning, Planning Commission, Characteristics of Indian Economic Planning, Five Years Economic Plans, Success and Failure of Five Year Economic Plans, Green revolution, Niti Aayog. **New Economic Reforms:** New Economic Policy-1991, LPG (Liberalization, Privatization and Globalization).
B	**Poverty:** Type of poverty, Data analysis of Poverty in India, Poverty Alleviation Programs. **Rural Development:** Various Programs of Rural Development, Agriculture Credit, Cooperative Banks, Agricultural Marketing, NABARD. **Employment:** Meaning, Types of Unemployment, Employment Generation Programs. **Infrastructure:** Energy, Transport and Communication, Irrigation, Health, Financial Institutions. **Sustainable Development:** Meaning, Measurement of Sustainable Development, Environment's Role, Environmental Pollution. **Gross Domestic Product (GDP):** Concepts of National Income, Human Development Index (HDI), HPI Index, PQLI Index. **Micro Economics:** Definitions, Nature and Scope, Limitations. **Economic Problem:** Central problems of Economy, Production Possibility Curve (PPC) & its applications, Capitalist Economy, Mixed Economy and Socialistic Economy, Opportunity Cost.

	Consumer Behaviour: Utility Analysis – Cardinal & Ordinal, Budget line, Indifference Curve and its characteristics, Applications of Indifference Curves, Consumer Equilibrium, Marginal rate of substitution (MRS). **Demand Analysis**: Law of Demand, Normal, Inferior and Giffin Goods, Determinants, Exceptions of Law of Demand, Price Effect, Income Effect and Substitution Effect, Hick's and Slutsky's theory, Revealed Preference Approach. **Elasticity of Demand:** Degrees, Type and measurement of Elasticity of demand, Uses/Importance of Price and Income Elasticity of Demand. **Production function**: Basic concepts, Law of Return of Scale, Law of Return to a Factor, Economics and Diseconomies of Scale, MRTS. **Cost:** Classical and Modern theory of Cost, Concepts of Cost, Short run and Long run Costs, Relationship between various Cost Curves.
C	**Revenue:** Concepts of Revenue and their inter-relationship. **Markets:** Perfect competition, Equilibrium of firm and industry, Supply Curve, Market price and Normal price, Control price and Support price, Food Availability Decline (FAD) Theory. **Monopoly, Monopolistic competition and oligopoly**: Features and Comparisons of various models of Oligopoly and Duopoly. **Macroeconomics:** Nature, Scope and Limitations, Stock and Flow. Circular flow of Income: Real and Monetary Flow, Two, Three and Four Sector Models, Withdrawals and Injections. **National Income:** Concepts related to National Income, Income Method, Product Method, Expenditure Method, National Income Accounting, Nominal National Income, Real GDP, GNP Deflator. **Money :** Meaning and Definitions of money, concept of Near Money, Functions of Money, Money Supply, Determinate of money supply, RBI and its role in controlling money supply. Functions of commercial and Central Bank, credit creation. **Determination of output and Employment :** AD and AS analysis, MPC, APC, APS, MPS, MEC, supply price, Prospective yield, Classical approach and Keynesian approach of Employment, Consumption Hypothesis. **Investment Multipliers:** Meaning, MPC & Multiplier, Forward and Backward action of Multiplier, Static and Dynamic multiplier. **Deficient and Excess Demand**: Inflationary Gap, Measures to control Deficient and Excess demand, Role of Monetary Policy, Fiscal Policy and Foreign Trade Policy. **Government Budget:** Meaning, Objectives & structure of budget, Budget receipts, Tax and Non -tax receipts, Budget Expenditure, Budget Deficit – Meaning, Types and Measurement, Deficit Budgeting, Balance Budget. **Foreign Exchange Rate:** Meaning, Types; Exchange Rate Theories. Balance of Payments (B.O.P.): Components, Disequilibrium in BOP, Method to control adverse BOP, BOP in Economic plans, Balance of Trade (BOT). **Subject related Pedagogy.**
	Mathematics
A	**Arithmetic, Algebra and Trigonometry**: Real number system and its analysis, Arithmetic Progressions, Polynomials, Linear equations in two variables, Quadratic Equations, Introduction to Trigonometry and its applications to find Heights and Distances.

	Geometry and Mensuration: Euclid's Geometry, Lines and Angles, Congruence and Similarity of Triangles, Quadrilateral, Circle, Heron's Formula, Area Related to Circles, Surface area and Volumes of combination of Solids. **Statistics and Probability:** Bar graph, Histogram, Frequency Polygon, Measures of Central Tendency: Mean, Median, Mode and Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data. Probability Theoretical Approach, Axiomatic Approach, Conditional Probability, Multiplication Theorem on Probability, Independent Events, Bayes' Theorem, Theorem of total probability.
C	**Sets, Relations and Functions:** Sets and their Representations, Types of Sets, Venn Diagrams, Operations on Sets (Union, Intersection, Difference), Complement of a Set ,Ordered Pairs, Cartesian Product of Sets, Relation and its types, Function and its Types, Algebra of Functions, Composition of Functions, Invertible Functions, Radian and Degree Measure, Trigonometric Functions and their Graphs, Principal Value and Properties of Inverse Trigonometric Functions. **Algebra**: Complex Numbers and Quadratic Equations, Argand Plane, Linear Inequalities, Linear Programming Problem and its Mathematical Formation, Permutations and Combinations, Binomial Theorem, Pascal's Triangle, Sequences and Series (G.P.), Relation between Arithmetic and Geometric Means, Matrices and its Types, Operations on Matrices, Transpose of a Matrix, Symmetric and Skew Symmetric Matrices, Invertible Matrices, Determinants of matrices of order one, two and three, Area of a Triangle using Determinants, Minors and Cofactors, Adjoint and Inverse of a Matrix, Solution of system of linear equations using inverse of a matrix.
C	**Calculus:** Intuitive Idea of Limit, Limits of different functions (Polynomial, Rational, Trigonometric, Exponential and Logarithmic functions), Definition of Continuity and Differentiability, Algebra of Continuous and Differentiable functions, Definition of Derivative, Algebra of Derivatives, Derivatives of different functions (Polynomial function, Trigonometric function, Composite functions, Chain Rule, Implicit functions, Inverse Trigonometric functions , Exponential and Logarithmic functions), Logarithmic Differentiation, Derivatives of functions in Parametric Forms, Second Order Derivative, Rate of change of Quantities, Application of Derivatives, Increasing and Decreasing functions, Maxima and Minima, Process of Integration, Different methods of Integration, Fundamental Theorem of Calculus, Evaluation of Definite Integrals by Substitution, Properties of Definite Integrals. Application of Integrals, Area under Simple Curves. **Vectors and Coordinate Geometry:** Two and Three Dimensional Coordinate Geometry, Straight Lines, Conic Sections (circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section), Coordinate axes and Coordinate planes in three dimensions, Distance between two points, Definition of Vector, Position Vector, Direction Cosines , Types of Vectors, Addition of Vectors, Multiplication of a vector by a Scalar, Components of a Vector, Vector joining Two Points, Section Formula, Scalar (or dot) Product of Two Vectors, Projection of a Vector on a line, Vector (or cross) product of Two Vectors, Direction Cosines and Direction Ratios of a Line, Equation of a Line in Space, Angle between two Lines, Shortest Distance between Two Lines. Subject related Pedagogy.

Psychology	
A	Understanding Mind and Behaviour; Popular Notions about the Discipline of Psychology; Evolution of Psychology; Development of Psychology in India; Branches of Psychology; Psychology and Other Disciplines; Psychology in Everyday Life. Methods of Enquiry in Psychology, Goals of Psychological Enquiry; Steps in Conducting Scientific Research; Alternative Paradigms of Research; Nature of Psychological Data; Some Important Methods in Psychology; Observational Method, Experimental Method, Correlational Research, Survey Research, Psychological Testing, Case Study, Analysis of Data: Quantitative Method, Qualitative Method, **Limitations of Psychological Enquiry;** Ethical Issues. Sensory, Attentional and Perceptual Processes, Knowing the world; Nature and varieties of Stimulus; Sense Modalities; Functional limitation of sense organs; Attentional Processes; Selective Attention, Sustained Attention; Perceptual Processes; Processing Approaches in Perception; The Perceiver; Principles of Perceptual Organisation; Perception of Space, Depth and Distance: Monocular Cues and Binocular Cues, Perceptual Constancies; Illusions; Socio-Cultural Influences on Perception. Learning, Nature of Learning; Paradigms of Learning; Classical Conditioning; Determinants of Classical Conditioning; Operant/Instrumental Conditioning, Determinants of Operant Conditioning; Key Learning Processes; Observational Learning; Cognitive Learning; Verbal Learning; Skill Learning; Factors Facilitating Learning; Learning Disabilities. Human Memory, Nature of memory; Information Processing Approach: The Stage Model; Memory Systems: Sensory, Short-term and Long-term Memories; Levels of Processing; Types of Long-term Memory: Declarative and Procedural, Episodic and Semantic, Nature and Causes of Forgetting: Forgetting due to Trace Decay, Interference and Retrieval Failure, Enhancing Memory: Mnemonics using Images and Organisation.
B	Human Development, Meaning of Development; Life-Span Perspective on Development; Factors Influencing Development; Context of Development; Overview of Developmental Stages; Prenatal Stage, Infancy, Childhood, Challenges of Adolescence, Adulthood and Old Age. Thinking; Nature of Thinking; Building Blocks of Thought; The Processes of Thinking; Problem Solving; Reasoning; Decision making; Nature and Process of Creative Thinking; Nature of Creative Thinking; Process of Creative Thinking; Thought and Language; Development of Language and Language Use. Motivation and Emotion; Nature of Motivation; Types of Motives; Biological Motives, Psychosocial Motives, Maslow's Hierarchy of Needs; Nature of Emotions; Expression of Emotions; Culture and Emotional Expression; Culture and Emotional Labelling; Managing Negative Emotions; Enhancing Positive Emotions. Self and Personality; Concept of self; Cognitive and behavioural aspect of self; Self esteem, self-efficacy, self-regulation; culture and self; Concept of personality; Major approaches to the study of personality: Type approaches, Trait approaches, Psychodynamic approaches, Behavioural approaches, Cultural approaches, Humanistic approaches; Assessment of personality: Self-report, Projective technique, Behavioural analysis. Stress; Effects of stress on psychological functioning and health: Stress and health, General adaptation syndrome, Stress and immune system, Life style; Coping with stress: Stress management technique, Prompting positive health and well-being: Life skills, Positive health.

C	Individual Differences in Human functioning; Intelligence; Theories of Intelligence: one factor theory, two factor theory, theory of primary mental abilities, structure of intellect model, theory of multiple intelligences, Triarchic theory of intelligence, Planning, attention -arousal and simultaneous successive model of intelligence; Individual Differences in Intelligence: Variations of intelligence; Culture and Intelligence; Emotional Intelligence; Special abilities: Aptitude: Nature and measurement; Creativity. Concepts of abnormality and psychological disorder; Historical background; Classification of psychological disorder; Factors underlying abnormal behaviour; Major psychological disorder: Anxiety disorder- generalised anxiety disorder, panic disorder, phobia, OCD, PTSD, Somatoform disorder- pain disorder, somatisation disorder, conversion disorder, hypochondriasis, Dissociative disorder- Dissociative amnesia, dissociative fugue, dissociative identity, depersonalisation, Mood disorder, Schizophrenic disorder, Behavioural and developmental disorder, Substance use disorder. Therapeutic Approaches; Nature and the process of psychotherapy: Therapeutic relationship; Types of therapies: behavioural therapy, cognitive therapy, Cognitive behaviour therapy, humanistic existential therapy, alternative therapy; Rehabilitation of mentally ill. **Attitude and social cognition;** Social behaviour; Nature and components of attitudes; Attitude formation and Change; attitude formation, attitude change, attitude behaviour relationship Prejudice and discrimination; strategies for handling prejudice. Social Influence and Group Processes; Nature and Formation of Group; Type of Groups; Influence of group on individual behaviour: Social learning, Group polarisation. Subject related Pedagogy.
	Home Science
A	Food, its Functions, nutrition, nutrients, health, nutritional status, malnutrition, Food and personal hygiene and cleanliness, balanced diet, basic food groups, meal planning, clinical nutrition and dietetics, knowledge regarding health indicators of family, community and society, nutrition health and welfare in different stages of life, public-health & nutrition, nutritional programmes in India, food processing and technology, food preservation, food quality and food safety, food standards and regulations in India and international organisations and agreements in the area of food standards, food safety management system.
B	Concepts and Principles of growth and development and factors affecting growth and development, play, stages of life span, age specific milestones (Birth to 3 years) Physical, Motor, Social, Emotional, Cognitive and language, Understanding yourself: Adolescence, early childhood care and education(ECCE) Management of support services, Institutions and programs for children, Youth and elderly, Family-its types functions and role in holistic development of family values, Family resources, Their types and characteristics, Time management, Energy management, Money management, Work simplification, Waste management, Hospitality management, Consumer education and protection, Measures of safety and management of emergencies, First-Aid.

C	Fibre: Its classification and characteristics fabric manufacturing, Yarn processing, Fabric around us, Traditional textiles of India, Clothing, its functions and selections for different age groups, Care and maintenance of fabrics and apparel in home and institutions, Stain removal, Design for fabric and apparel, Fashion design and merchandising, Concept of home science and field of home science and recent trends, Communication medium and technology, Work livelihood and career, Entrepreneur and entrepreneurship, Development communication and journalism, Information and communication technology, Corporate communication and public relations. **Subject related Pedagogy.**

Fine Arts

A	Introduction of art, Principles of art and design, Shadang of Indian art, Importance of art in culture.
B	Traditional and modern techniques, Process and Procedures in art (Painting, Sculpture, Applied art, Graphic, Mural and multimedia art) Prespective, Indian folk art.
C	Indian national flag and its Evolution, Indian art history and development from pre historic time to contemporary period including applied art and architecture and graphic. Subject related Pedagogy.