

सीमित विभागीय परीक्षा (पाठ्यक्रम) स्नातकोत्तर शिक्षक (हिन्दी)

क्रमांक संख्या	विषय	अध्याय
1	हिन्दी	नमक का दारोगा - प्रेमचंद
		कबीर
		अपू के साथ ढाई साल – सत्यजीत राय
		सुमित्रा नन्दन पंत
		आलो आंधारि- बेबी हालदार
		हरिवंश राय बच्चन
		जैनेन्द्र कुमार – बाजार दर्शन
		सूर्यकांत त्रिपाठी निराला
		तुलसीदास- कवितावाली
		फिराक गोरखपुरी, रुबाइयाँ गज़ल
		हजारी प्रसाद द्विवेदी –शिरीष के फूल
		भीम राव अंबेडकर , श्रम विभाजन और जाति प्रथा
		सिल्वर वैडिंग – मनोहर श्याम जोशी

लेखन कौशल और पत्रकारिता

1	प्रिंट माध्यम- (समाचार और संपादकीय)
2	रिपोर्ट लेखन
3	आलेख लेखन
4	फीचर लेखन
5	विज्ञापन लेखन
6	इलेक्ट्रॉनिक मीडिया

व्याकरण

1	छंद ज्ञान – वर्णिक एवं मात्रिक
2	शब्द शक्ति , अभिधा , लक्षणा , व्यंजना
3	अलंकार – शब्दालंकार , अर्थालंकार, उभयालंकार
4	रस मीमांसा
5	शब्द विचार
6	पद – विचार
7	वाक्य विचार
8	संधि
9	समास

हिन्दी साहित्य के इतिहास का अध्ययन

1	आदिकाल	प्रमुख प्रवृत्तियाँ ,रचनाकार एवं उनकी रचनाएं ,साहित्यिक विशेषताएँ , भाषा- शैली के संदर्भ में।
2	भक्तिकाल	
3	रीतिकाल	
4	आधुनिक काल	

संदर्भित किताबे : NCERT द्वारा कक्षा XI – XII के लिए प्रकाशित पाठ्य पुस्तके ।

SYLLABUS for L.D.E. to the post of P.G.T. (ENGLISH)

Section A

READING COMPREHENSION

Ability to comprehend, analyze and interpret unseen texts.

Three/four unseen reading passages may be set.

Section B

WRITING ABILITY

Ability to express views/opinions in a coherent & logical manner.

B1. One out of two tasks such as factual description of any event or incident, a report or a process.

B2. Writing one formal letter. Letter types include

- a) Business or official letters (for making enquiries, registering complaints, asking for and giving information, placing orders and sending replies)
- b) Letter to the editors (giving facts/figures suggestions / opinions on an issue of public interest) on contemporary / current issues.
- c) Application for a job with cv.

B3. Writing personal opinion /views/stand in an article/debate/speech etc on a given socio – cultural issue –in a style/register suitable to the task set. Issues could relate to

- (a) environment
- (b) education
- (c) gender discrimination
- (d) economic disparity etc..

Section C

GRAMMAR AND USAGE

Ability to apply the knowledge of syntax and grammatical items & use them accurately in the context provided.

The following grammatical structures will be tested through error correction / editing/ gap filling / sentence completion / multiple choice questions

:

1. Determiners
2. Tenses
3. Clauses
4. Modals
5. Voice

Section D

LITERATURE

S.No	Chapter
1	The Portrait of a lady
2	Albert Einstein at school
3	The voice of the Rain(Poem)
4	The Ailing Planet
5	Deep Water
6	An Elementary School Classroom in a Slum
7	On the face of it.
8	A thing of Beauty is a Joy Forever
9	Going Places
10	Memories of Childhood
11	The address

Reference Books : Text Books published by NCERT for classes XI & XII.

L.D.E. Syllabus for the post of P.G.T. (HISTORY)

S.No.	Subject	Topics
01.	PGT(History)	1. The Mesopotamian Civilization: (i) Mesopotamian Cities (ii) System of Writing
		2. The Roman Empire: (i) Polity (ii) Society (iii) Economy (iv) Culture
		3. The Central Islamic Lands: (i) The rise of Islam (ii) Caliphate (iii) Civil war and Sect formation (iv) End of Caliphate (v) The Crusades (vi) Learning and Culture
		4. The Nomadic Empires: (i) Mongols (ii) Social, Political and Military Organisation
		5. The Three Orders : (i) The Clergy (ii) The Nobility (iii) The Peasantry, (iv) The Crisis of 14 th Century and Political Changes
		6. Changing Cultural Traditions: (i) Humanism (ii) Literature (iii) Science (iv) Art & Architecture
		7. Towards Modernization:- (i) The Industrial Revolution, (ii) European Imperialism (iii) Paths to modernization- Focus on Japan and China.
		8. The Harappan Civilization: (i) Early Urban Centres (ii) Town- Planning (iii) Social, Economic & Religious life (iv) End of the Civilization
		9. Early States 600 BCE to 600 CE: (i) Social and Economic history
		10. Cultural development during 600 BCE to 600 CE : (i) Buddhism (ii) Sanchi Stupa (iii) Jainism
		11. Medieval Society Through the eyes of Travellers: (i) Al-Biruni (ii) Ibn Battuta (iii) Francoi's Bernier.
		12. (A) Bhakti & Sufi traditions : (i) Early traditions of Bhakti :- a. The Alvaras and Naynarasof South India. b. Bhakti Movement in North India. (B) (i) The growth of Sufism (ii) Beliefs and Practices.
		13. Vijayanagara Empire : (i) Discovery of Humpi (ii) Political System (iii) Architectural traditions(iv) Palaces and Temples
		14. The Mughals and their Empire : (i) Mughal Chronicles (ii) Imperial Officials (iii) Mughal nobility (iv) Land Revenue System
		15. Colonialism and Revenue Policy of the British.
		16. The Revolt of 1857-Nature, Causes, Leadership, Causes of failure & Impacts of the Revolt.
		17. Mahatma Gandhi and the Nationalist Movement.
		18. Partition: (i) Factors leading to partition(ii) Experiences and aftermath of the partition.
		19. Framing the Constitution: (i) Objective resolution (ii) Language Controversy and division of Power between the Union and the States.

Reference Books : Text Books published by NCERT for classes XI & XII.

Syllabus for L.D.E. Written Examination for P.G.T. (Geography)

Topic I: Geography as a discipline-

Geographical ideas in ancient, medieval & modern periods: the contributions of Varenus, Kant, Reine, Humboldt and Ritter. Influence of Richthofen and Darwin. Videl-da-la Blache, F. Ratzel etc. Contemporary geography: Post Second World War, Environmentalism, Areal Differentiation, spatial organization, Behavioural and perceptual Geography. Positivism in Geography. Humanistic Geography. Marxist Geography and critical social theory. Development in Indian Geography. Time space geography, Human ecology, Geography: A new synthesis (Empiricist philosophy of regional geography, Scientific explanations / analysis, trends towards a new synthesis).

Topic-2 Origin and Evolution of the Earth-

Introduction to the solar system, Motions of Earth: Rotation, Revolution, Occurrence of Day and Night; change of seasons; Latitudes and Longitudes; Finding time. Earth's Interior: Origin of continents and ocean basin Wegener's Continental drift theory, Theory of Plate Tectonics, Earthquakes and Volcanoes, Folding and faulting, Origin of the Earth: Nebular hypothesis (old Theory) and Big-Bang Theory. Evolution of continents, atmosphere and oceans.

Topic-3 Interior of the Earth and Distribution of oceans and continents-

Constitution of Earth's interior (based on Seismic Evidences), origin of the continents and ocean basins. Wegner's theory of Continental drift and Plate Tectonics. Plate movements and interactions-Volcanism and seismicity.

Topic-4 Landforms-

Mountains: Types & Importance **Plateaus:** Types & effects on Human life, **Plains:** types & effects on Human Life, **Mineral and rocks-** classification of rocks, rock cycle. Important minerals geomorphic process of denudation Endogenic and Exogenic processes. Weathering, Mass Wasting, Landslide, Work of River, Glacier, Wind, Sea Waves etc, and **Soils:** soil profile, processes of soil formation, properties & Classification.

Topic-5 Climate:

Atmosphere: Composition and structure. Insolation and temperature, Atmospheric pressure and winds, Atmospheric moisture(Precipitation), Air masses, Fronts and cyclones, classification of climate (Koeppen and Thornthwaite Schemes classification). Global climatic changes: Causes and effects.

Topic-6 Water (Ocean)

Geomorphology of the ocean floor, submarine relief features of Atlantic, Pacific and Indian Ocean. Movement of ocean water: Currents, tides and waves. Hydrological cycle. Marine deposits and coral reefs. Temperature and Salinity of the Sea.

Topic -7 Life on the Earth

Approaches in environmental Geography, landscape, ecosystem and perception approaches, Man and the Biosphere: Interactive and dynamic relationship. Human impact on biogeochemical cycles.

Topic-8 India:

Geographical basis of Indian State-territory; location, extent, shape and size.

Topic-9 Physiography:

Structure, Physiographic divisions, Drainage system and its evolution.

Topic-10 Climate, Vegetation and Soil-

Climate: factors controlling climate of India Origin and mechanism of Indian monsoon; Seasons of India, Classification of climate of India (Koeppen's, Thornthwaite, Triwartha).

Soils: Type and distribution (I.C.A.R.), Soil problems, conservation of soil

Vegetation- Types & Distribution; conservation Wild Life- its conservation.

Topic-11 Natural Hazards and disasters-

Causes, Consequences and management in India Environmental Hazards: Floods, droughts, cyclones, earthquakes and landslides; human adjustment to hazards; hazards perception and mitigation; environmental institutions and legislation in India.

Topic-12 Human Geography: Nature and Scope.

Nature and scope of Human Geography, Approaches to the Human Geography, Determinism, Environmental Determinism, Possibilism, Neo-determinism, ecological and Behaviouralism.

Topic -13 People (World and India)

Trends and patterns of population growth: determinants and patterns of population distribution; theories, demographic transition; Human migration, Patterns of human development.

Topic-14 Human Activities: (World and India)

Primary: -Hunting, gathering, Herding (Nomadic & Commercial) Lumbering fishing, mining and agriculture; Agricultural practices; some major crops. **Secondary:** - Industries: Classification, Theories of localization, major Industries, recent trends in industries, world comparisons. **Tertiary:** - (Services) **Quaternary- Quinary** activities, Planning in India: target area planning, idea of sustainable development

Topic-15 Transport, Communication and Trade (World and India)

Transport and communication Roads, railways, waterways and airways; oil and gas pipelines, national electric grids. Communication networking-radio, television, satellite and Internet. International Trade-Basis and components, trade balance, major trading organizations, changing pattern of India's foreign trade, sea-routes, inland water-ways, sea ports and their hinter-land.

Topic-16 Human settlements (World and India)

Unstable and stable settlements, rural settlements: origin, types and patterns; Urban settlements: Origin and growth of towns; functional classification of towns. Problems of urbanization in the world; urbanization in India; Urban slums and squatters. Morphology of cities; distribution of Mega-cities, problems of human settlements in Developing countries.

Topic -17 Geographical perspective on selected issues and problems

Environmental pollution- Land, Water, Air, Noise, Global Warming, Poverty, Food Security; Sustainable Development.

Topic - 18 General Cartography (Practicals)

Elements and classification of maps, scales, map-projections, finding directions, latitudes, longitudes and calculation of local & standard time, Identification & Analysis of relief forms: Topographical Maps and interpretation. Weather-instruments and interpretation of weather maps. Digital mapping, Remote sensing, Visual interpretation. Processing of Data, Thematic mapping, representing statistical data by various diagrams-Bar, Histogram, Pie etc. Spatial Information technology: GIS, GPS, Computers-Software and Hardware components, Data format, Raster and Vector, editing and topology etc. Spatial Analysis; Overlay, Buffer and Proximity analysis.

Reference Books : Text Books published by NCERT for classes XI & XII.

Syllabus for Limited Departmental Exam (KVS) P.G.T. (Economics)

Topics

Collection, Organisation and Presentation of Data

Collection of data - sources of data – primary and secondary; methods of collecting data; some important sources of secondary data; Census of India and National Sample Survey Organisation.

Presentation of Data: Tabular Presentation and Diagrammatic Presentation of Data: (i) Arithmetic line graphs (time series graph).

Statistical Tools and Interpretation

Measures of Central Tendency- mean, median and mode

Measures of Dispersion - absolute dispersion (range, quartile deviation, mean deviation and standard deviation); relative dispersion (co-efficient of quartile deviation, co-efficient of mean deviation and co-efficient of variation).

Correlation – meaning, scatter diagram, Measures of correlation - Karl Pearson's method (two variables ungrouped data) and Spearman's rank correlation.

Introduction to Index Numbers – meaning, types – wholesale price index, consumer price index and index of industrial production, uses of index numbers; Inflation and index numbers.

Development Policies and Experience

A brief introduction of the state of Indian economy on the eve of Independence.

Common goals of Five Year Plans.

Main features, problems and policies of agriculture (institutional aspects and new agricultural strategy, etc.), industry (industrial licensing, etc.) and foreign trade.

Economic Reforms since 1991

Need and main features – liberalization, globalization and privatization;

An appraisal of LPG policies.

Current Challenges facing Indian Economy

Poverty – absolute and relative; main programs for poverty alleviation; A critical assessment.

Rural development – Key issues – credit and marketing – role of cooperatives; agricultural diversification; alternative farming – organic farming.

Human Capital Formation – how people become a resource; role of human capital in economic development; growth of Education sector in India.

Employment – formal and informal, growth and other issues: problems and policies.

Inflation – Problems and policies.

Introduction

Meaning of microeconomics and macroeconomics.

Consumer Equilibrium and Demand

Consumer's equilibrium – meaning of utility, marginal utility, law of diminishing marginal utility, conditions of consumer's equilibrium using marginal utility analysis.

Indifference curve analysis of consumer's equilibrium – the consumer's budget (budget set and budget line), preferences of the consumer (indifference curve, indifference map) and conditions of consumer's equilibrium.

Demand, market demand, determinants of demand, demand schedule, demand curve, movement along and shifts in demand curve; elasticity of demand – factors affecting price elasticity of demand; measurement of price elasticity of demand – (a) percentage-change method and (b) geometric method (linear demand curve); relationship between price elasticity of demand and total expenditure.

Producer Behavior and Supply

Production function: Total Product, Average Product and Marginal Product.

Law of Returns to a Factor.

Cost and Revenue: Short run costs – total cost, total fixed cost, total variable cost; Average fixed cost, average variable cost and marginal cost – meaning and their relationship.

Revenue – total, average and marginal revenue.

Producer's equilibrium – meaning and its conditions in terms of marginal revenue – marginal cost.

Supply, market supply, determinants of supply, supply schedule, supply curve, movement along and shifts in supply curve; elasticity of supply – factors affecting price elasticity of supply; measurement of price elasticity of supply – (a) percentage-change method and (b) geometric method.

Forms of Market and Price Determination

Perfect competition – Features; Determinants of market equilibrium and effects of shifts in demand and supply.

Other Markets forms – monopoly, monopolistic competition, oligopoly- their meaning and features.

National Income and Related Aggregates

Methods of calculating National Income – Value added or Product method, Expenditure method, Income method.

Aggregates related to National Income:

Gross National Product (GNP), Net National Product (NNP), Gross and Net Domestic Product (GDP and NDP) – at market price, at factor cost; National Disposable Income (gross and net), Private Income, Personal Income and Personal Disposable Income; Real and Nominal GDP.

GDP and Welfare.

Money and Banking

Money creation by commercial banking system.

Central Bank and its functions (example of the Reserve Bank of India).

Determination of Income and Employment

Aggregate demand and its components.

Propensity to consume and propensity to save (average and marginal).

Short-run equilibrium output; investment multiplier and its mechanism.

Meaning of full employment and involuntary unemployment.

Problems of excess demand and deficient demand; measures to correct – change in government spending, availability of credit.

Government Budget and the Economy

Classification of receipts – revenue receipts and capital receipts; classification of expenditure – revenue expenditure and capital expenditure.

Measures of government deficit – revenue deficit, fiscal deficit, primary deficit: their meaning.

Balance of Payments

Balance of Payments account – meaning and components; balance of payments deficit- meaning.

Determination of exchange rate in a free market.

Reference Books : Text Books Published by NCERT for classes XI & XII.

SYLLABUS FOR L.D.E. for the post of P.G.T. (PHYSICS)

SL NO	TOPICS
1	<p>Kinematics Uniform and non-uniform motion, average speed and instantaneous velocity. Uniformly accelerated motion, velocity time and position-time graphs. Addition and subtraction of vectors. Resolution of a vector in a plane ,projectile motion</p>
2	<p>Laws of Motion Newton's first law of motion; Inertia, momentum; Force, impulse, Law of conservation of linear momentum and its applications. Static and kinetic friction, laws of friction, uniform circular motion</p>
3	<p>System of particles and Rotational Motion Centre of mass of a two-particle system, momentum conservation . Centre of mass of a rigid body; centre of mass of a uniform rod. laws of conservation of angular momentum,</p>
4	<p>Properties of Bulk Matter Elastic behavior, Hooke's law, Young's modulus, bulk modulus, shear modulus of rigidity, Moment of inertia, parallel and perpendicular axes theorems; Pascal's law and its applications (hydraulic lift and hydraulic brakes) Stokes' law, terminal velocity, Reynold's No Bernoulli's theorem and its applications. surface tension, Application of surface tension ideas to drops, bubbles and capillary rise. Heat, temperature, specific heat capacity; Latent heat capacity. Heat transfer-conduction, convection and radiation, thermal conductivity,</p>
5	<p>Thermodynamics Thermal equilibrium zeroth law of thermodynamics First law of thermodynamics. Second law of thermodynamics: reversible and irreversible processes. Heat engine and refrigerator. Kinetic theory of gases degrees of freedom law of equi-partition of energy Avogadro's number.</p>
6	<p>Oscillations & waves Periodic motion oscillations of a spring-restoring force and force constant; energy in S.H.M. Kinetic and potential energies; Free, forced and damped oscillations , resonance. Wave motion. Transverse and longitudinal waves, reflection of waves, standing waves in strings and organ pipes, Beats, Doppler effect.</p>
7	<p>Current Electricity drift velocity V-I characteristics electrical energy and power, Electrical resistivity and conductivity. series and parallel combinations of resistors; Internal resistance of a cell, potential difference and emf of a cell,Kirchhoff's laws and simple applications. Wheatstone bridge, metre bridge.</p>

8	<p>Magnetic Effect of current and Magnetism Biot - Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long straight wire. Force on a moving charge in uniform magnetic and electric fields. Cyclotron. Force on a current-carrying conductor in a uniform magnetic field. Torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter. Magnetic dipole moment of a revolving electron. Torque on a magnetic dipole (bar magnet) in a uniform magnetic field; magnetic field lines; Earth's magnetic field and magnetic elements. Para-, dia- and ferro - magnetic substances, with examples. Electromagnets and factors affecting their strengths. Permanent magnets.</p>
9	<p>Electromagnetic Induction and Alternating Electromagnetic induction; Faraday's laws, induced emf and current; Lenz's Law, Eddy currents. Self and mutual induction.</p>
10	<p>Optics Reflection of light, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula. Refraction and dispersion of light through a prism. Scattering of light - blue colour of sky and reddish appearance of the sun at sunrise and sunset. Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers. Interference Young's double slit experiment and expression for fringe width, Coherent sources and sustained interference of light. Polarisation, plane polarised light Brewster's law, uses of plane polarised light and Polaroids.</p>
11	<p>Atoms & Nuclei Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, Radio activity alpha, beta and gamma particles/rays and their properties; radioactive decay law. Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number</p>
12	<p>Semiconductor devices Energy bands in conductors, semiconductors and insulators Semiconductor diode - I-V characteristics in forward and reverse bias, diode as a rectifier; Special purpose p-n junction diodes: LED, photodiode, solar cell and Zener diode and their characteristics, Zener diode as a voltage regulator.</p>

Reference Books : Text Books published by NCERT for classes XI & XII.

Syllabus for Limited Departmental Exam P.G.T. (CHEMISTRY)

Topics

Some Basic Concepts of Chemistry

Laws of chemical combination, Dalton's atomic theory.

Atomic and molecular masses, mole concept and molar mass, percentage composition.

Structure of Atom

Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Bohr's model and its Limitations, concept of shells and subshells, dual nature of matter and light, concept of orbitals, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals – Aufbau principle, Pauli's exclusion principle and Hund's rule.

Classification of Elements and Periodicity in Properties

Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements – atomic radii, ionic radii, inert gas radii, ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100.

Chemical Bonding and Molecular Structure

Valence electrons, ionic bond, covalent bond, bond parameter, Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea only), hydrogen bond.

Chemical Thermodynamics

First law of thermodynamics – internal energy and enthalpy, heat capacity and specific heat, measurement of ΔU and ΔH , Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction)

Introduction of entropy as a state function, Gibbs's energy change for spontaneous and non-spontaneous processes, criteria for equilibrium.

Third law of thermodynamics (brief introduction).

Equilibrium

Equilibrium constant, factors affecting equilibrium – Le Chatelier's principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH.

s-Block Elements (Alkali and Alkaline Earth Metals)

Group 1 and Group 2 Elements

Electronic configuration, anomalous properties of the first element of each group, diagonal relationship, trends in the variation of properties (such as ionization enthalpy, atomic and ionic radii), trends in chemical reactivity with oxygen, water, hydrogen and halogens, uses.

Preparation and Properties of Some Important Compounds:

Sodium Carbonate, Sodium Chloride, Sodium Hydroxide.

Some p-Block Elements

General Introduction to p-Block Elements

Group 13 Elements: Trends in chemical reactivity, anomalous properties of first element of the group, Borax, Boric acid, Boron Hydrides.

Group 14 Elements: Trends in chemical reactivity, anomalous behavior of first elements. Carbon-catenation, allotropic forms. Important compounds of silicon and few uses: Silicon Tetrachloride, Silicones, Silicates and Zeolites, their uses.

Hydrocarbons

Classification of Hydrocarbons Aliphatic Hydrocarbons:

Alkanes – Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenations, combustion and pyrolysis.

Alkenes – Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markownikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition.

Alkynes – Nomenclature, structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of – hydrogen, halogens, hydrogen halides and water.

Aromatic Hydrocarbons: introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenations, Friedel Craft's alkylation and acylation, directive influence of functional group in monosubstituted benzene. Carcinogenicity and toxicity.

Environmental Chemistry

Environmental pollution – air, water and soil pollution, chemical reactions in atmosphere, smog, major atmospheric pollutants, acid rain, ozone and its reactions, effects of depletion of ozone layer, greenhouse effect and global warming-pollution due to industrial wastes, green chemistry as an alternative tool for reducing pollution, strategies for control of environmental pollution.

Electrochemistry

Redox reactions, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, fuel cells, corrosion.

Chemical Kinetics

Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half life (only for zero and first order reactions). Activation energy, Arrhenius equation.

General Principles and Processes of Isolation of Elements

Principal and methods of extraction – concentration, oxidation, reduction – electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron.

“p” –Block Elements

Oxoacids of phosphorus, Sulphur, and halogens (structure only), and trends in their chemical properties.

“d” and “f” Block Elements

General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals – metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$.

Lanthanoids – electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences.

Actinoids – electronic configuration, oxidation states and comparison with lanthanoids

Haloalkanes and Haloarenes.

Haloalkanes: Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions, optical rotation.

Haloarenes: Nature of C-X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only).

Aldehydes, Ketones and Carboxylic Acids

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes: uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Biomolecules

Carbohydrates – Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); importance of carbohydrates. (Excluding structure)

Proteins – elementary idea of – amino acids, peptide bond, polypeptides.

Vitamins – Classification and functions.

Chemistry of Everyday life

Chemical in medicines – analgesics, tranquilizers antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines.

Chemicals in food – preservatives, artificial sweetening agents, elementary idea of antioxidants.
Cleansing agents – soaps and detergents, cleansing action.

Reference Books : Text Books published by NCERT for classes XI & XII.

Syllabus for L.D.E. Written Examination for P.G.T. (MATHS)

1. Sets

Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations), Power set, Universal set, Venn diagrams, Union and Intersection of sets, Difference of sets, Complement of a set, Properties of Complement Sets.

2. Relations & Functions:

Ordered pairs, Cartesian product of sets, Number of elements in the cartesian product of two finite sets, Cartesian product of the set of reals with itself (upto $\mathbb{R} \times \mathbb{R} \times \mathbb{R}$). Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions.

3. Trigonometric Functions:

Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Signs of trigonometric functions. Expressing $\sin(x \pm y)$ and $\cos(x \pm y)$ in terms of $\sin x$, $\sin y$, $\cos x$ & $\cos y$ and their simple applications.

$$\tan(x \pm y) = \frac{\tan x \pm \tan y}{1 \mp \tan x \tan y}, \quad \cot(x \pm y) = \frac{\cot x \cot y \mp 1}{\cot y \pm \cot x}$$

Identities related to $\sin 2x$, $\cos 2x$, $\tan 2x$, $\sin 3x$, $\cos 3x$ and $\tan 3x$, etc.

4. Principle of Mathematical Induction:

Process of the proof by induction, motivating the application of the method by looking at natural numbers as the least inductive subset of real numbers. The principle of mathematical induction and simple applications.

5. Complex Numbers and Quadratic Equations

Need for complex numbers, especially $\sqrt{-1}$, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Solution of quadratic equations (with real coefficients) in the complex number system. Square root of a complex number.

6. Permutations and Combinations

Fundamental principle of counting. Factorial $n(n!)$, Permutations and combinations, derivation of formulae for ${}^n P_r$ and ${}^n C_r$ and their connections, simple applications.

7. Binomial Theorem History, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, General and middle term in binomial expansion, simple applications.

8. Sequence and Series

Sequence and Series. Arithmetic Progression (A. P.). Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of first n terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M.

9. Straight Lines

Brief recall of two dimensional geometry from earlier classes. Shifting of origin. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point-slope form, slope-intercept form, two-point form, intercept form and normal form. General equation of a line. Equation of family of lines passing through the point of intersection of two lines. Distance of a point from a line.

10. Introduction to Three-dimensional Geometry

Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points and section formula.

11. Limits and Derivatives

Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition of derivative relate it to slope of tangent of the curve, Derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.

12. Probability

Random experiments; outcomes, sample spaces (set representation). Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories studied in earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events.

13. Relations and Functions

Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, composite functions, inverse of a function. Binary operations.

14. Inverse Trigonometric Functions

Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions. Elementary properties of inverse trigonometric functions.

15. Matrices

Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).

16. Determinants

Determinant of a square matrix (up to 3 x 3 matrices), properties of determinants, minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

17. Continuity and Differentiability

Continuity and differentiability, derivative of composite functions, chain rule, derivatives of inverse trigonometric functions, derivative of implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives. Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretation.

18. Integrals

Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them.

$$\frac{dx}{x^2 \pm a^2}, \frac{dx}{\sqrt{x^2 \pm a^2}}, \frac{dx}{\sqrt{a^2 - x^2}}, \frac{dx}{ax^2 + bx + c}, \frac{dx}{\sqrt{ax^2 + bx + c}}, \frac{px + q}{ax^2 + bx + c} dx, \frac{px + q}{\sqrt{ax^2 + bx + c}} dx$$
$$\sqrt{a^2 \pm x^2} dx, \sqrt{x^2 - a^2} dx, \sqrt{ax^2 + bx + c} dx, (px + q)\sqrt{ax^2 + bx + c} dx$$

Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

19. Vectors

Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors, scalar triple product of vectors.

20. Three - dimensional Geometry

Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes, (iii) a line and a plane. Distance of a point from a plane.

21. Probability

Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean and variance of random variable. Repeated independent (Bernoulli) trials and Binomial distribution.

Reference Books : Text Books published by NCERT for classes XI & XII.

Syllabus for Limited Departmental Exam (KVS) P.G.T. (Bio)

1. Diversity of Living Organisms

- **The Living World**
 - Biodiversity, taxonomy and systematics, Binomial nomenclature, Biological Classification
- **Biological Classification -**
 - Five Kingdom Classification
- **Plant Kingdom -**
 - Salient features and classification of plants into major groups – Algae, Bryophyta, Pteridophyta, Gymnospermae and Angiospermae
- **Animal Kingdom -**
 - Salient features and classification of animals – nomenclature up to phyla level and chordates up to class level.

2. Structural Organization in Animals and Plants

- Morphology of flowering plants – root, stem, leaf, inflorescence, flower, fruit seed.
- Anatomy of flowering plants – root, stem, leaf.
- **Structural Organization in Animals -**
 - Animal tissues – types of animal tissues.

3. Cell – Structure and Functions

- **Cell – The Unit of Life –**
 - Cell theory, cell and its structure
- **Biomolecules –**
 - Chemical constituents of living cells – biomolecules.
 - Enzymes – Classification and nomenclature of enzymes.
- **Cell Cycle and cell Division –** Mitosis and meiosis

4. Plant Physiology –

- **Transportation in Plants –**
 - Means of transport – Diffusion, facilitated diffusion, active transport, imbibition, water potential, osmosis, plasmolysis; long distance transport of water – Absorption, transpiration pull, root pressure and guttation; transportation, opening and closing of stomata. Transport of food, phloem transport, mass flow hypothesis.
- **Mineral Nutrition**
 - Essential minerals, macro and micronutrients and their role , Deficiency symptoms, hydroponics, nitrogen cycle, biological nitrogen fixation.
- **Photosynthesis –**
 - Photochemical and biosynthetic phases, photorespiration; C3 and C4 pathways factors affecting photosynthesis.
- **Respiration in Plants –**
 - Glycolysis, fermentation, TCA Cycle, respiratory quotient.
- **Plant – Growth and Development**
 - *Seed Germination, Growth Regulators, Seed Dormancy, Vernalisation, Photoperiodism*

5. Human Physiology –

- **Digestion and Absorption –**
 - Alimentary canal and digestive glands, Role of digestive enzymes & gastro-intestinal hormones, Absorption and assimilation of proteins, carbohydrates and fats, Digestive disorders.
- **Mechanism of Breathing and its regulation in Humans –**
 - Respiratory volume, respiratory disorders
- **Body Fluids and Circulation –**
 - Composition of blood, blood group, Human circulatory system, Structure of human heart and blood vessels, ECG, Double circulation, Disorders of circulatory system
- **Excretory Products and its Elimination –**
 - Modes of excretion, Human excretory system, Disorders, Osmoregulation, Urine formation
- **Locomotion and Movement –**
 - Types of movement, Skeletal system and its function, Joints, Disorders of muscular and skeletal systems
- **Neural Control and Coordination –**
 - Neuron and nerves, Nervous system in humans, Central nervous system, Peripheral nervous system, Visceral nervous system, Reflex action, Sense organs, Elementary structure and function of eye and ear.
- **Chemical Coordination and Regulation -**
 - Human endocrine system, Role of hormones as messengers and regulators, Hypo and hyper activity and related disorders.

6. Reproduction -

- **Reproduction in Organisms –**
 - Sexual and Asexual Reproduction
- **Sexual Reproduction in Flowering Plants**
 - Flower Structure, pollination, double fertilization, post fertilization events, development of seed and formation of fruit, Special modes – apomixis, parthenocarpy
- **Human Reproduction –**
 - Male and female reproductive system, spermatogenesis and oogenesis, fertilization – embryo development up to blastocyst, parturition and lactation
- **Reproductive Health –**
 - Need for reproductive health, prevention of sexually transmitted diseases, birth control, amniocentesis, assisted reproductive technologies – IVF, ZIFT, GIFT

7. Genetics and Evolution –

- **Principles of Inheritance and Evolution –**
 - Heredity and evolution, Mendelian inheritance, Deviations from Mendelism – Incomplete dominance, Co-dominance, Multiple alleles and inheritance of blood groups, pleiotropy, polygenic inheritance, chromosome theory of inheritance, chromosomes and genes, linkage and crossing-over, chromosomal disorders in humans.
- **Molecular basis of inheritance –**
 - DNA as genetic material, Structure of DNA and RNA, DNA replication, Central dogma, transcription, genetic code, translation, Lac Operon, Human genome project, DNA finger printing.
- **Evolution –**
 - Biological evolution and evidences for biological evolution, Darwin's contribution, Mechanism of evolution – variation (mutation and recombination) and natural selection, Gene flow and genetic drift.

8. Biology and Human Welfare –

- **Human Health and Diseases –**
 - Pathogens, Parasites causing human diseases – (malaria, dengue, chickengunia, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control, Cancer, HIV and AIDS.
- **Strategies for Enhancement in Food production –**
 - Plant breeding, tissue culture, single cell protein, Bio fortification, Apiculture, Animal husbandry
- **Microbes in Human Welfare –**
 - In household food processing, industrial production, sewage treatment, energy generation and microbes as biological agents and bio fertilizers, Antibiotics.

9. Biotechnology and its Applications –

- **Biotechnology – Principles and Processes**
 - Genetic engineering (Recombinant DNA technology)
- **Biotechnology and its Application –**
 - Application of biotechnology in health and agriculture.

10. Ecology and Environment –

- **Organisms and Populations –**
 - Habitat and niche, population and ecological adaptations, population interactions – mutualism, competition, predation, parasitism
- **Ecosystem –**
 - Energy flow, Pyramid of number, bio mass, energy, Nutrient cycles (Carbon and Phosphorous), Ecological succession
- **Biodiversity and its Conservation –**
 - Importance of biodiversity, patterns of biodiversity, loss of biodiversity, biodiversity conservation, biosphere reserves.
- **Environmental Issues –**
 - Air pollution and its control, Water pollution and its control, Solid waste management, Radioactive waste management, Greenhouse effect, Ozone depletion, Deforestation

Reference Books : Text Books published by NCERT for classes XI & XII.

सीमित विभागीय परीक्षा (पाठ्यक्रम) प्रशिक्षित स्नातक शिक्षक (हिन्दी)

क्रमांक संख्या	अध्याय
1	वह चिड़िया जो
2	जंगल और जनकपुर
3	चांद से थोड़ी सी गप्पें
4	राम का वन गमन
5	साथी हाथ बढ़ाना
6	दंडक वन में दस वर्ष
7	टिकिट अलबम
8	झाँसी की रानी
9	राम और सुग्रीव
10	नौकर
11	राम का राज्याभिषेक
12	दादी माँ
13	भीष्म प्रतिज्ञा
14	मिठाई वाला
15	पापा खो गए , शाम एक किसान
16	कर्ण से जरासंध तक
17	रहीम के दोहे
18	भाषा का मानक रूप, मुहावरे और लोकोक्तियाँ
19	खानपान की बदलती तस्वीर
20	प्रतिज्ञापूर्ति से पांडवों और कौरवों के सेनापति तक
21	भौर और बरखा
22	वीर कुँवर सिंह
23	पांडवों का राष्ट्र के प्रति व्यवहार से श्रीकृष्ण और युधिष्ठिर तक
24	लाख की चूड़ियाँ
25	बस की यात्रा
26	तलाश
27	क्या निराश हुआ जाए
28	सिंधु घाटी की सभ्यता
29	कबीर की साखियाँ
30	सुदामा चरित
31	अकबरी लोटा , सूरदास के पद
32	पानी की कहानी
33	अंतिम दौर
34	ल्हासा की ओर
35	हरीशंकर परसाई - प्रेमचंद के फटे जूते
36	कबीर - साखियाँ एवं सबद
37	राजेश जोशी - बच्चे कम पर जा रहे हैं
38	फणीशंकरनाथ रेणु - इस जल प्रलय में
39	बालगोबिन भगत- रामवृक्ष बेनीपुरी
40	मन्नू भण्डारी - एक कहानी यह भी
41	राम लक्ष्मण परशुराम संवाद
42	गिरिजा कुमार माथुर - छाया मत छूना मन
43	कमलेश्वर - जार्ज पंचम की नाक
44	अज्ञेय - मैं क्यूँ लिखता हूँ

व्याकरण

1	शब्द विचार एवं शब्द भंडार (शब्द भेद, शब्दयुग्म एवं शब्दनिर्माण)
2	पद - विचार, पदबंध एवं पद परिचय
3	वाक्य विचार
4	अलंकार - शब्दालंकार, अर्थालंकार, उभ्यालंकार
5	रस निरूपण- परिभाषा, भेद, भाव-उदाहरण

संदर्भित किताबें : NCERT द्वारा कक्षा VI- X के लिए प्रकाशित पाठ्य पुस्तकें ।

SYLLABUS for L.D.E. to the post of T.G.T. (संस्कृतम्/SANSKRIT)

1. अकारान्त पुल्लिङ्गः	26. तत् त्वम् असि
2. आकारान्तस्त्रीलिङ्गः	27. पाथेयम्
3. अकारान्तनपुंसकलिङ्गः	28. साहित्यपरिचयः
4. वृक्षाः	29. विजयता स्वदेशः
5. कारकविभक्तिपरिचयः	30. भारतीय विज्ञानम्
6. कृषिकाः कर्मवीराः	31. भारतेनास्ति मे जीवन जीवनम्
7. भाषाप्रयोगः	32. अव्ययपदानि
8. दुर्बुद्धिः विनश्यति	33. भावावबोधनम्
9. सख्यावाचकशब्दाः	34. प्रत्ययप्रयोगः (क्त्वा, ल्यप्, क्त, क्तवत्)
10. अव्ययप्रयोगः	35. आज्ञा गुरुणा ह्यविचारणीया
11. पंडिता रमाबाई	36. नास्ति त्यागसमं सुखम्
12. संकल्पः सिद्धिदायकः	37. साधुवृत्ति समाचरेत्
13. समवायो हि दुर्जेयः (लट्, लृट्, लोट्, लङ्, लकाराणां प्रयोगः)	38. सूस्वागत भो! अरुणाचलेडस्मिन्
14. कल्पलतेव विद्या	39. कालोडहम्
15. वाक्यप्रयोगः	40. रमणीया हि सृष्टिरेषा
16. सुभाषितानि	41. 'मत्तुप्' प्रत्यय प्रयोगः
17. व्याकरण प्रयोगः	42. विशेषणविशेष्यप्रयोगः
18. व्याकरण प्रयोगः	43. प्रश्ननिर्माणम्
19. तुमुन्प्रत्यय प्रयोगः	44. सर्वनाम प्रयोगः
20. वेदपरिचयः	45. सन्धिः
21. सावित्रीबाई फुले	46. सन्धि विच्छेदः
22. कःरक्षति कः रक्षितः	47. समासः
23. हिमालयः	48. सप्तभगिन्यः
24. आर्यभट्टः	49. उपसर्गाः
25. श्लोकान्वयः	50. बकस्य प्रतीकारः
	51. बिलस्य वाणी न कदापि श्रुता

संदर्भित किताबे : NCERT द्वारा कक्षा VI- X के लिए प्रकाशित पाठ्य पुस्तके ।

SYLLABUS FOR WRITTEN EXAMINATION FOR TGT (ENG.) - LDE
SECTION - A

READING COMPREHENSION

Ability to comprehend, analyze and interpret unseen texts.
Three/ four unseen reading passages may be set.

SECTION - B

WRITING ABILITY

Ability to express views/opinions in a coherent & logical manner.

B1: One out of given tasks such as

Notice writing/ message writing/ email writing.

B2: Writing one formal letter. Letter type includes:

a) Letter to the Editor (giving facts/ figures/ suggestions/ opinions on an issue of public interest) on contemporary/ current topics.

b) Writing an informal letter. Letter type includes letter to relatives and friends (inviting them/ giving suggestions/ discussing –current /relevant topics)

B3: Writing personal opinion/views/stand in an article/debate/speech etc on a given socio- cultural issues-in a style/ register suitable to the task set.

B4: Writing diary entry.

SECTION - C

GRAMMAR AND USAGE

Ability to apply the knowledge of syntax and grammatical items & use them accurately in the context provided.

The following grammatical structures will be tested through error correction/ editing/ gap filling/ sentences completion/ multiple choice questions:

1. Determiners/Tenses/Preposition/Connectors/ Modals
2. Active Passive voice
3. Direct Indirect Narration
4. Subject -verb agreement
5. Future time references

SECTION - D

LITERATURE

S.No.	Topics	(Classes)
1.	Who Did Patrick's Home Work	VI
2.	Kalpna Chawla (Prose)	VI
3.	The Shepherd's Treasure (Suppl. Rdr.)	VI
4.	A Different Kind of School (Prose)	VI
5.	Tansen (Suppl. Rdr.)	VI
6.	The Wonder called sleep (Suppl. Rdr.)	VI
7.	A Game of change (Prose)	VI
8.	What if (Poem)	VI
9.	The Banyan Tree (Prose)	VI
10.	The Three Questions (Prose)	VII
11.	The Rebel (Poem)	VII
12.	The Cop & the Anthem & Golu Grows a nose	VII
13.	The Ashes that made trees (Prose)	VII
14.	Poem: Trees	VII
15.	Fan. Supp: Chandni	VII
16.	The Invention of Vita	VII
17.	Supp: A Tiger in the House	VII
18.	Prose: The Story of Cricket I & II	VII
19.	How the Camel got its Hump	VIII
20.	The Tsunami	VIII
21.	Bepin Choudhary's Lapse of Memory	VIII
22.	The Treasure within	VIII
23.	The School Boy	VIII
24.	A Visit to Cambridge	VIII
25.	Jalebies	VIII
26.	On the Grasshopper and Cricket	VIII
27.	The Comet-2	VIII
28.	How I Taught My Grandmother to read	IX
29.	The seven Ages	IX
30.	Villa for sale	IX
31.	Children	IX
32.	Two gentlemen of Verona	X
33.	Patol Babu, Film Star	X
34.	Ozymandias	X
35.	Snake	X
36.	Julius Caesar	X
37.	Education	X
38.	National Integration	X

Reference Books: Text Books published by NCERT/CBSE for classes VI to X.

SYLLABUS for L.D.E. to the post of T.G.T. (Maths)

S No	Topics
1	Whole Numbers
2	Playing with Numbers
3	Integers
4	Data Handling
5	Algebra
6	Ratio & Proportions
7	Fractions
8	Decimals
9	Lines & Angles
10	Exponent & Powers
11	Fractions & Decimals
12	Triangles & Its Properties
13	Rational Numbers
14	Congruence of Triangles
15	Algebraic Expression
16	Perimeter & Area
17	Rational Numbers
18	Linear Equations
19	Square & Square roots
20	Cube & Cube roots
21	Comparing Quantities
22	Exponent & Powers
23	Direct & Inverse Proportion
24	Visualisation Solid Shapes
25	Factorisation
26	Playing with Numbers
27	Algebra Polynomials
28	Introduction to Euclid Geometry, Lines and Angles, Triangles
29	Mensuration
30	Quadrilaterals, Area, Circles, Constructions
31	Statistics & Probability
32	Number system & Real Numbers
33	Polynomials, Pair of Linear Equations in two variables
34	Trigonometry
35	Co-ordinate Geometry
36	Mensuration
37	Triangles, Circles & Constructions
38	Statistics & Probability

Reference Books : Text Books published by NCERT for classes VI-X

SYLLABUS for L.D.E. to the post of T.G.T. (SCIENCE)

Sl. No.	TOPICS
1	Fun with magnets Magnetic materials, Magnetic poles, finding North and South Poles.
2	Heat Temperature and measurement of temperature-Clinical and Laboratory thermometer, Modes of Transmission of heat-conduction, convection and radiation and their applications.
3	Friction Definition, Types of friction, Advantages and Disadvantages of friction
4	Chemical effects of electric current: Conduction of electricity through liquids, Electroplating.
5	Stars and the solar system Moon, Phases of moon, Stars, Constellation, Solar System, Asteroids, Comets, Meteors, Artificial satellites, Light Year.
6	Motion Distance and displacement, Velocity; Uniform and Non-uniform motion along a straight line; Acceleration, Distance-time and Velocity-time graphs for uniform motion and uniformly accelerated motion, Equations of motion by graphical method; Elementary idea of uniform circular motion.
7	Force and Newton's laws: Force and motion, Newton's laws of motion, Inertia of a body, Inertia and mass, Momentum, Acceleration. Elementary idea of conservation of momentum, Action and Reaction forces.
8	Gravitation: Gravitation; Universal law of gravitation, Force of gravitation of the earth (gravity), Acceleration due to gravity; Mass and weight; Free fall. Thrust and pressure. Archimedes' principle, Buoyancy, Elementary idea of relative density.
9	Work, energy and power: Work done by a force, Energy, Power; Kinetic and Potential energy; Law of conservation of energy.
10	Sound: Nature of sound and its propagation in various media, Speed of sound, Range of hearing in humans; Ultrasound; Reflection of sound; Echo and SONAR.
11	Magnetic effects of current: Magnetic field, Field lines, Field due to a current carrying conductor, Field due to current carrying coil or solenoid; Force on current carrying conductor, Fleming's left hand rule. Electromagnetic induction. Induced potential difference, Induced current. Fleming's Right Hand Rule, Direct current. Alternating current, Advantage of AC over DC, Domestic electric circuits.
12	Light: Reflection of light at curved surfaces, Images formed by spherical mirrors, Centre of curvature, Principal axis, Principal focus, Focal length, Mirror formula (Derivation not required) and magnification. Refraction; Laws of refraction, Refractive index. Refraction of light by spherical lens, Image formed by spherical lenses, Lens formula (Derivation not required), Magnification. Power of a lens; defects of vision and their corrections, applications of spherical mirrors and lenses. Refraction of light through a prism, Dispersion of light, Scattering of light, Applications in daily life.
13	Electricity and Heating Effect of electric Current: Electric current, Potential difference and electric current. Ohm's law; Resistance, Resistivity, Factors on which the resistance of a conductor depends. Series combination of resistors, Parallel combination of resistors and its applications in daily life. Heating effect of electric current and its applications in daily life. Electric power, Inter relation between P, V, I and R.
14	Sources of Energy: Different forms of energy, Conventional and non-conventional sources of energy: Fossil fuels, Solar energy; Biogas; Wind, Water and Tidal energy; Nuclear energy. Renewable versus non-renewable sources.
15	Components of food: Nutrients and its uses, Balanced diet, Deficiency diseases
16	Getting to know plants: Herbs, shrubs and trees, Stem and its functions, Leaf – Parts of leaf, types of venation, transpiration, photosynthesis, Root – Types and functions, Flower and its parts.
17	Nutrition in plants:

	Mode of nutrition in plants, Photosynthesis, Other modes of nutrition in plants.
18	Transportation in animals and plants : Circulatory system – Blood vessels, Heart, Excretory system in humans, Transport of water and minerals in plants, Transpiration.
19	Microorganisms : Types of microorganisms - virus, bacteria, fungi, protozoa, algae, Uses and harmful effects of microorganisms. , Methods of food preservation, Nitrogen cycle
20	Conservation of plants and animals: Causes and consequences of deforestation, Conservation of forest and wildlife, Biosphere Reserve, Flora and fauna, Endemic Species, Wildlife sanctuary and National parks, Red data book, Migration, Reforestation
21	Cell –Structure and functions: Cell – Structure and function, Comparison of plant and animal cell.
22	Reproduction in animals: Sexual reproduction – Fertilization and its types, embryo development, Asexual reproduction and its types.
23	Reaching the age of adolescence: Changes at puberty, Role of hormones in initiating reproductive function, Sex determination, Types of hormones.
24	Natural phenomena: Lightning and its safety, Types of charges and their Interaction Earthquakes , causes and protection.
25	Basic unit of life: Cell – Structure and functions
26	Tissues: Plant tissues – Meristematic tissue, permanent tissues. , Animal Tissues – Epithelial, connective, muscular and nervous tissues.
27	World of Living (Life processes): Nutrition and its types, Nutrition, respiration, transportation, excretion in human beings, Transportation and excretion in plants.
28	Fiber to Fabric : Fibers, fabric, types of fabric, animal and plant fibres
29	Separation of Substances : Need of separation, various methods of separation
30	Air : Composition of Air, Uses of oxygen, carbon di oxide and Nitrogen
31	Physical and Chemical Changes : Physical Changes, Chemical changes, examples of physical and chemical changes, rusting of iron, crystallization.
32	Soil : Formation of Soil, Soil types, Soil profile, properties of soil, soil conservation.
33	Acids basis and Salts : Definition of Acids, basis and salts, Uses, Indicators, Natural Indicators, Neutralisation reaction, neutralization in everyday life.
34	Metals and Non Metals : Physical and Chemical Properties of Metals and Non Metals, Uses of Metals and Non Metals, Alloys, Corrosion
35	Pollution of Air and Water : Air and Water Pollution, Green House effect, Ganga Action Plan, Global warming, Causes and prevention of Pollution
36	Combustion and Flame : Combustion, ignition temperature, types of Combustion, Flame and structure of flame, Fuel Efficiency, acid rain, How to control fire.
37	Matter : Characteristics of Solid, Liquid and Gas, Change of State, Sublimation, Elements, Compounds and mixtures, Valency, Chemical formula of common compounds, Structure of atom, Nature and behavior, particle nature, mole concept, structure of atom.
38	Chemical Substances : Chemical equations, balanced chemical equations, types of chemical reactions- Combination, decomposition, displacement, neutralization, oxidation and reduction, carbon compounds, periodic classification of elements.
39	Natural resources :

Sources of energy, conventional and non-conventional sources of energy, renewable and non-renewable sources of energy, Our environment, eco system and environmental problems, conservation and management of natural resources.
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SYLLABUS for L.D.E. to the post of T.G.T. (SOCIAL STUDIES).

S.No.	Topics
1.	Solar System (Geo.)
2.	Latitudes and Longitudes (Geo.)
3.	Key Elements of the Govt.: (i) People's participation (ii) Need to resolve conflict (iii) Equality & justice
4.	Panchayati Raj: (i) Gram Sabha (ii) The gram Panchayat (iii) The three levels of Panchayats
5.	Ashoka, the emperor who gave up war: (i) The Mauryan empire (ii) ruling the empire (iii) Ashoka-a unique ruler (iv) Ashoka's Dhamma
6.	Major Land Forms (Geo)
7.	India Climate and Vegetation (Geo.)
8.	Inside our Earth
9.	How State Govt. works: (i) Legislative Assembly (ii) Working of the Government
10.	Growing up as Girls and Boys: (i) Gender difference (ii) Valuing house work (iii) Lives of Domestic Workers
11.	The Delhi Sultans: (i) Early Turkish rulers (ii) Administration and consolidation under the Khaljis Tughluqs (iii) The Sultans in the 15 th & 16 th Centuries
12.	Understanding advertising (i) Building brand and brand values (ii) brand values and social values (iii) Advertising and democracy
13.	Mughal Empire: (i) Who were the Mughals? (ii) Mughal military campaigns (iii) Akbar's policies (iv) The Mughal empire in the 17 th century and after
14.	Human environment: tropical and sub-tropical
15.	The making of Regional Cultures: The Cheras and the Development of Malayalam (ii) The Jagannath Cult (iii) The Rajputs & the tradition of Heroism (iv) The story of Kathak (v) The Traditions of Miniatures (vi) Pirs and temples
16.	Life in desert
17.	Indian Constitution: (i) Why a country needs constitution? (ii) Parliamentary form of government (iii) Federalism (iv) Fundamental rights
18.	Understanding secularism: (i) What is secularism? (ii) Religion and the state (iii) what is Indian secularism?
19.	Minerals and Power resources
20.	When people Rebel-1857 and after : (i) Policies and the people (ii) Through the eyes of people (iii) A Mutiny Becomes a Popular Rebellion (iv) The Company Fights Back (v) Aftermath
21.	Understanding our criminal Justice system: (i) Role of The Police in investigating a crime (ii) Role of public prosecutor (iii) Role of Judge (iv) Fair Trial
22.	Changing world of Visual Arts: (i) New Forms of Imperial Art (ii) The Court Artists (iii) The New Popular Indian Art (iv) The Search of National Art
23.	Human Resources
24.	India after Independence : (i) A New and Divided Nation (ii) States to be Formed (iv) Planning for Development (v) The Nation, Sixty Years On
25.	The French Revolution : (i) The Ancient Regime and its Crises (ii) The Social Forces of the Revolution (iii) The Different Revolutionary groups and ideas of the time (iv) The Legacy Socialism in Europe and The Russian Revolution : (i) The Crises of Tzarism (ii) The Nature of Social Movement between 1905 and 1917 (iii) The First World War and Foundation of Soviet State
26.	Forest Society and Colonialism: (i) Why Deforestation (ii) The Rise of Commercial Forestry (iii) Rebellion in the Forests
27.	History and Sports : (i) The Story of Cricket (ii) The Historical Development of Cricket as a game in England (iii) The Spread of Cricket (iv) Commerce, Media and Cricket
28.	Wild Life
29.	Population and Food Security in India
30.	Making of The Indian Constitution : (i) The Path to Constitution (ii) The Constituent Assembly (iii) Guiding Values of the Indian Constitution
31.	Electoral Politics : (i) Why elections (ii) What makes an election democratic (iii) Our System of Elections
32.	People as Resource
33.	Poverty as a challenge facing India
34.	Common Hazards

35.	The Rise of Nationalism in Europe: (i) The Age of Revolutions (1832-1848) (ii) The Making of Germany and Italy (iii) Nationalism and Imperialism
36.	The Age of Industrialization(I) Before The Industrial Revolution(ii) Hand, Labour and Steam Power (iii) Industrialization in the Colonies (iv) The Peculiarities of Industrial Growth
37.	Nationalism in India: (i) The First World War, Khilafat and Non Co-operation (ii) Differing Strands within the Movement (iii) Towards Civil Disobedience (iv) The Sense of Collective Belonging
38.	Print Culture and the Modern World: (i) The First Printed Books (ii) Print comes to Europe (iii) The Print Revolution and its Impact (iv) India and the World of Print (v) Religious Reform and Public Debate
39.	Forest and Wildlife Resources
40.	Manufacturing Industries and: (i)
41.	Transport, Communication and Trade
42.	Gender, Religion and Caste: (i)Gender and Politics (ii) Religion, Communalism and Politics (iii) Caste and Politics
43.	The role of Service sector in Indian Economy
44.	Money and Financial System Globalization
45.	Safer Construction Practices
46.	People as Resource Introduction of how people become resource/asset; Economic activities done by men and women; Unpaid work done by women; Quality of human resource; Role of health and education; Unemployment as a form of non-utilization of human resource; Socio-political implication in simple form.
47.	Poverty as a Challenge Who is poor; Indicators; Absolute poverty; Why people are poor; Unequal distribution of resources; Comparison between countries; Steps taken by government for poverty alleviation.
48.	Food Security in India Source of food grains; Variety across the nation; Famines in the past; The need for self-sufficiency; Role of government in food security; Procurement of food grains; Overflowing of granaries and people without food; Public distribution system; Role of cooperatives in food security.
49.	Development The traditional notion of development; National Income and Per-capita income. Growth of NI - critical appraisal of existing development indicators (PCI, IMR, SR and other income and health indicators). The need for health and educational development; Human Development Indicators.
50.	Sectors of the Indian Economy Sectors of economic activities; Historical change in sectors; Rising importance of tertiary sector; Employment generation; Division of sectors- organized and unorganized; Protective measures for unorganized sector workers.
51.	Money and Credit Role of money in an economy; Historical origin; Formal and informal financial institutions for saving and credit- General Introduction
52.	Globalization and the Indian Economy What is Globalization; How India is being globalised and why; Development strategy prior to 1991. State control of industries: Textile goods as example of elaboration; Economic reforms. 1991; Strategies adopted in reform measures (easing of capital flows, migration, investment flows); Different perspectives on globalization and its impact of different sectors.

Reference Books : Text Books published by NCERT for classes VI- X.