टी.जी.टी. हिन्दी पद की सीधी भर्ती हेतु
लिखित प्रश्न पत्र के लिए नील –पत्र(ब्लू –प्रिंट)

गद्य साहित्य :–

- हिन्दी साहित्य का उद्भव,विकास एवं गद्य साहित्य की विधाएं
- उपन्यास पर आधारित प्रश्न
- कहानी   पर आधारित प्रश्न
- नाटक /एकांकी पर आधारित प्रश्न
- निबंध पर आधारित प्रश्न
- यात्रा – वृतांत पर आधारित प्रश्न
- संस्मरण / रेखाचित्र पर आधारित प्रश्न
- आत्मकथा / जीवनी पर आधारित प्रश्न
- रिपोर्ताज पर आधारित प्रश्न

काव्य भाग :–

- हिन्दी काव्य का विकास
- आदिकालीन काव्य पर प्रश्न
- भक्तिकालीन काव्य पर प्रश्न (निर्गुण काव्य , सगुण काव्य तथा सूफी काव्य)
- रीतिकालीन काव्य पर प्रश्न
- आधुनिककालीन काव्य पर प्रश्न
- (भारतेन्दु युग,द्विवेदी युग, छायावाद,प्रगतिवाद, प्रयोगवाद, नई कविता, समकालीन कविता)

हिन्दी भाषा का विकास एंव व्यावहारिक व्याकरणः–

- हिन्दी भाषा का विकास , इसकी उप-भाषाएं एंव बोलियां
- देवनागरी लिपि एवं उसका विकास
- वर्ण विचार– (उच्चारण, वर्तनी एवं संधि)
- शब्द विचार और शब्द रचना (पर्याय, विलोम, अनेकार्थक , श्रुति– सम –भिन्नार्थक शब्द इत्यादि)
- विकारी शब्द , अविकारी शब्द
- वाक्य रचना :– (रचना और अर्थ के आधार पर),पद परिचय
- अलंकार
- शब्द – शक्तियां
- मुहावरे एवं लोकोक्तियां
- अपठित गद्यांश / पद्यांश
- संविधान में हिंदी की स्थिति (संपर्क भाषा हिंदी, प्रयोजन मूलक हिंदी, कार्यालय हिंदी, मानक हिंदी)

SYLLABUS FOR WRITTEN EXAMINATION FOR TGT(ENGLISH)

Reading Comprehension
(Section – A)

<u>Ability to comprehend, analyze and interpret an unseen text</u>
Three/four unseen texts of varying lengths (150-250 words) with a variety of objective type, multiple choice questions (including questions to test vocabulary) testing factual and global comprehension.

Writing ability
(Section –B)

Testing ability to express facts views/opinions in a coherent and logical manner in a style suitable to the task set.

B.1   One short writing task such as: notice, message or a postcard.
B.2   Writing a report of an event, process, or place.
B.3   Writing an article / debate / speech based on visual / verbal input on a given concurrent topic for e.g. <u>environment, education, child labour, gender bias, drug-abuse etc</u> presenting own views fluently.
B.4   Writing a letter (formal/informal) on the basis of verbal / visual input. Letter types include: (a) letter to the editor; (b) letter of complaint; (c) letter of request; (d) descriptive, personal letters.

Grammar and Usage
(Section – C)

Ability to apply the knowledge of syntax, language/grammatical items and to use them accurately in context.
The following grammatical structures will be tested:

    (1)   Tenses
    (2)   Modals
    (3)   Voice
    (4)   Subject – verb concord
    (5)   Connectors
    (6)   Clauses
    (7)   Parts of speech
    (8)   Punctuation
    (9)   Sequencing to form a coherent sentence or a paragraph

Literature
(Section – D)

To test the candidate's familiarity with the works of writers of different genres and periods of English Literature.

The candidate should have a thorough knowledge of :-
   ✓ Shakespeare's works.
   ✓ Romantic Period (e.g. Shelley, Wordswoth, Keats, Coleridge, Byron etc.)

- ✓ 19th & 20th Century American and English Literature (e.g. Robert Frost Hemingway, Ted Hudges, Whitman, Hawthorne, Emily Dickinson, Bernard Shaw etc.)
- ✓ Modern Indian Writing in English (e.g. Anita Desai, Vikram Seth, Nissim Ezekiel, K.N. Daruwala, Ruskin Bond, R.K. Narayan, Mulk Raj Anand, Khushwant Singh etc.)
- ✓ Modern Writings in English from different parts of the world.

Syllabus for written examination of TGT(Mathematics)

Real Number:
Representation of natural numbers, integers, rational numbers on the number line. Representation of terminating / non-terminating recurring decimals, on the number line through successive magnification.
Rational numbers as recurring / terminating decimals. Examples of non-recurring /non-terminating decimals. Existence of non-rational numbers (irrational numbers) and their representation on the number line. Explaining that every real number is represented by a unique point on the number line and conversely, every point on the number line represents a unique real number.

Laws of exponents with integral powers. Rational exponents with positive real bases. Rationalization of real numbers. Euclid's division lemma, Fundamental Theorem of Arithmetic. Expansions of rational numbers in terms of terminating / non-terminating recurring decimals.

Elementary Number Theory:
Peano's Axioms, Principle of Induction; First Principal, Second Principle, Third Principle, Basis Representation Theorem, Greatest Integer Function, Test of Divisibility, Euclid's algorithm, The Unique Factorisation Theorem, Congruence, Chinese Remainder Theorem, Sum of divisors of a number. Euler's totient function, Theorems of Fermat and Wilson.

Matrices
R, R2, R3 as vector spaces over R and concept of Rn. Standard basis for each of them. Linear Independence and examples of different bases. Subspaces of R2, R3. Translation, Dilation, Rotation, Reflection in a point, line and plane. Matrix form of basic geometric transformations. Interpretation of eigenvalues and eigenvectors for such transformations and eigenspaces as invariant subspaces. Matrices in diagonal form. Reduction to diagonal form upto matrices of order 3. Computation of matrix inverses using elementary row operations. Rank of matrix, Solutions of a system of linear equations using matrices.

Polynomials:
Definition of a polynomial in one variable, its coefficients, with examples and counter examples, its terms, zero polynomial. Degree of a polynomial, Constant, linear, quadratic, cubic polynomials; monomials, binomials, trinomials. Factors and multiples. Zeros / roots of a polynomial / equation. Remainder Theorem with examples and analogy to integers. Statement and proof of the Factor Theorem. Factorization of quadratic and of cubic polynomials using the Factor Theorem. Algebraic expressions and identities and their use in factorization of polynomials. Simple expressions reducible to these polynomials.

Linear Equations in two variables:
Introduction to the equation in two variables. Proof that a linear equation in two variables has infinitely many solutions and justify their being written as ordered pairs of real numbers, Algebraic and graphical solutions.

Pair of Linear Equations in two variables:
Pair of linear equations in two variables. Geometric representation of different possibilities of solutions / inconsistency. Algebraic conditions for number of solutions. Solution of pair of linear equations in two variables algebraically – by substitution, by elimination and by cross multiplication.

Quadratic Equations:
Standard form of a quadratic equation. Solution of the quadratic equations (only real roots) by factorization and by completing the square, i.e. by using quadratic formula. Relationship between discriminant and nature of roots. Relation between roots and coefficients, Symmetric functions of the roots of an equation. Common roots.

Arithmetic Progressions:
Derivation of standard results of finding the nth term and sum of first n terms.

Inequalities:
Elementary Inequalities, Absolute value, Inequality of means, Cauchy – Schwarz Inequality, Tchebychef's Inequality.

Combinatorics:
Principle of Inclusion and Exclusion, Pigeon Hole Principle, Recurrence Relations, Binomial Coefficients.

Calculus:
Sets. Functions and their graphs : polynomial, sine, cosine, exponential and logarithmic functions. Step function, Limits and continuity. Differentiation, Methods of differentiation like Chain rule, Product rule and Quotient rule. Second order derivatives of above functions. Integration as reverse process of differentiation. Integrals of the functions introduced above.

Euclidean Geometry:
Axioms / postulates and theorems. The five postulates and Euclid. Equivalent versions of the fifth postulate. Relationship between axiom and theorem. Theorems and lines and angles, triangles and quadrilaterals, Theorems on areas of parallelograms and triangles, Circles, theorems on circles, Similar triangles, Theorem on similar triangles. Constructions.

Ceva's Theorem, Menalus Theorem, Nine Point Circle, Simson's Line, Centres of Similitude of Two Circles, Lehmus Steiner Theorem, Ptolemy's Theorem.

Coordinate Geometry:
The Cartesian plane, coordinates of a point, Distance between two points and section formula, Area of a triangle.

Areas and Volumes:
Area of a triangle using Hero's formula and its application in finding the area of a quadrilateral. Surface areas and volumes of cubes, cuboids, spheres (including hemispheres) and right circular cylinders/cones. Frustum of a cone.

Area of a circle: area of sectors and segments of a circle.

Trigonometry:
Trigonometric ratios of an acute angle of a right – angled triangle. Relationships between the rations. Trigonometric identities. Trigonometric ratios of complementary angles. Heights and distances.

Statistics:
Introduction to Statistics : Collection of data, presentation of data, tabular form, ungrouped / grouped, bar graphs, histograms, frequency polygons, qualitative analysis of data to choose the correct form of presentation for the collected data. Mean, median, mode of ungrouped data. Mean, median and mode of grouped data. Cumulative frequency graph.

Probability:
Elementary Probability and basic laws. Discrete and Continuous Random variable, Mathematical Expectation, Mean and Variance of Binomial, Poisson and Normal distribution. Sample mean and Sampling Variance. Hypothesis testing using standard normal variate. Curve Fitting. Correlation and Regression.

SYLLABUS FOR WRITTEN EXAMINATION FOR TGT (SOCIAL SCIENCE)

HISTORY

Contemporary World

a.   Industrial Revolution
b.   Economic Depresseion
c.   Labour & Peasant Class issues
d.   Growth of industries in India in twentieth century
e.   Features of colonial society in India

French Revolution

f.   Causes
g.   Events
h.   Impact
i.   Consequences

The Revolt of 1857

Indian Freedom Struggle – 1885 to 1947

Russian Revolution – 1917, Causes, Events, Impact on Russia and the World, Consequences

Rise of Socialism

-    Philosophy of Karl Marx
-    Socialism in Europe
-    Impact of Socialism

Rise of Fascist Forces in Germany & Italy

The Two World Wars and the establishment of UN

GEOGRAPHY

Introduction to solar system; origin of Earth

Motions of the Earth: Rotation, Revolution, Occurrence of Day and night; change of seasons; Latitudes and Longitudes; Finding time.
Earth's Interior: Origin of continents and ocean basins Wegener's Continental drift theory, Theory of Plate Tectonics, Earthquakes and Volcanoes, Folding and faulting

<u>Rocks and minerals:</u> Types of rocks; soil formation; major types and characteristics.

<u>Agents of gradation:</u> Weathering, mass wasting, running water, wind, glaciers, sea waves and karsat topography

<u>Climate:</u>

<u>Atmosphere</u> – Composition and structure, elements of weather and climate

Insulation – Heat Budget, Heating and cooling of atmosphere, Conduction, Convection, Solar Radiation, Terrestrial radiation, Advection, Temperature, Factors controlling temperature, distribution of temperature-horizontal and vertical

Pressure – Pressure belts, winds, cyclones and anti-cyclone

Evaporation, condensation and precipitation and their forms: Humidity, rainfall and its types

World climates – Classification, greenhouse effect, global warming and global climate change.

Water (Oceans): Distribution of water bodies on the Earth's surface; hydrological cycle.

Ocean – Submarine relief, distribution of temperature and salinity; movement of ocean water's-waves, tides currents of Atlantic, Pacific and Indian Ocean

Maps and Scales – Definition and classification

Finding directions, conventional signs

Techniques of representing relief features on map; contours, hachures, Hill shading, layer tinting.

Representation of climatic data; line and Bar Graph, (Climograph) Isotherms, isobars and isohyets

Biosphere: Ecology, type of Eco-System, structure and functions of Eco-system-Food Chain, Food Web, World Biomes, Ecological Balance, Biodiversity and its conservation.

<u>India (Size and Location)</u>
<u>Physical features of India</u>

Geological Structure, Physiographic divisions, drainage system and its evolution.

Climate: origin and mechanism of Indian monsoon, Seasons of India, Classification of Climate of India (Coeppen's) Soil: Types and distribution: Natural Vegetation: types and distribution.

Population:

Growth and Distribution of population: Causes & Factors
Migration-Causes and consequences
Population theories & their relevance-Malthus, Demographic transition – theory
Population composition and its Attributes: Population and sustainable development;
Population as a resource; Population problems and polices with reference to India

Resources and Development

Meaning, nature and Components of resources and environment; Resources, environment and technology interface: classification of resources.
Distribution, utilization, economic and environmental significance and conservation of water, Minerals, Forests and fisheries; production and distribution of major crops, wild life resource and energy resources.

Agriculture

Wet and dry agriculture, Intensive, Extensive, shifting, commercial and plantation agricultural development and problems, crop intensity, major crops

Manufacturing Industries

Classification, locational factors, types and distribution, industrial clusters of India, Production and distribution of sugar, Cotton Textile Iron and Steel, chemicals and electronic industries.

Life lines of National Economy

Means of transportation and communication, Roads, Railways, waterways and airways, oil and gas pipelines, National electric grid, radio, television satellite and computers
International trade – Changing pattern of India's foreign trade, sea ports and airports:Tourism as trade.

Understanding Disaster and Hazards.

Type of Disasters – Natural & Manmade
1. Disaster Management:Becoming a Disaster manager. Components of Disaster Management.
2. Disaster risk reduction: Disaster risk management. Understanding Disaster mitigation. Specific Hazards and mitigation.
3. Common manmade Disasters and their prevention
4. Community based Disaster management and social planning for Disasters.
5. Tsunami : The killer sea waves.
6. Survival skills: during and after Disaster.

7. Alternative Communication system
8. Safe construction Practices
9. Sharing Responsibilities
10. Planning ahead.

Components of production

People as Resource

- Economic activities / non economic activities
- Population
- Education
- Health
- Unemployment / Employment

Poverty as a challenge

- Poverty line
- Poverty & inequality
- Policies for poverty reduction
- Poverty estimates

Food Security in India

- Food Security
- Green revolution
- Buffer Stock
- Issue Price / Support Price
- Role of co-operative societies in food security

Development
Growth / Development and structural development:

- Growth and distribution, sustainable agricultural growth
- Growth structural changes
- Population and human resource development
- Purchasing power parity (PPP)
- Main features of Indian Economy at the time of Independence
- Economic development
- Gross enrolment ratio
- Foreign trade & Economic development
- Development & under development
- Distribution of Income / factors of development

Sectors of the Economy

- Classification of Sectors like – Primary / Secondary / Organized / Unorganized / Public / Private Sector
- Small and Large Industry
- Performance of the Public Sector
- Privatization
- Employment growth in the Industrial Sector

Money & Credit

- Indian Monetary System
- Function of money
- Banks:
  Central Bank function
  Commercial Banks
- Self help Groups (SHGs)
- Debt trap
- Demand of money & supply of money
- Financial markets
- Money and capital market
- Monetary aggregates in India

CIVICS

Power sharing
Federalism
Democracy and Diversity
Political parties
Elections
Challenges to Democracy
Popular struggle and movements – like in Nepal, Bolivia
Democracy:
     Concept
     Salient Features
     Local Self Government
     Elections
     Democracy in India & the World
Indian Constitution:
     Framing of the constitution
     Adoption of the constitution
     Working of Institutions – Parliament
                     Judiciary
     Fundamental Rights

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SYLLABUS FOR WRITTEN EXAMINATION FOR TGT (SCIENCE)

EFFECT OF CURRENT

Potential; potential difference ohms law; series combination of resistors, parallel combination of resistors; Power dissipation due to current; Inter relation between P,V,I and R. Magnetic field & magnetic lines, Magnetic field due to current carrying conductor; Fleming left hand rule, Electromagnetic Induction; Induced Potential Difference, Induced current; Direct current, Alternating current; Frequency of AC, Advantage of Electronic Motor & Electronic Generator.

LIGHT

Convergence and Divergence of light; Images formed by a Concave Mirror; related concepts, centre of curvature; principles axis, optic centre, focus, focal length, Refraction & laws of refraction. Images formed by a convex lens; functioning of vision and remedies.
Applications of spherical mirrors and lenses.
Appreciation of concept of refraction index; Twinkling of stars; Dispersion of light; Scattering of light.

SOURCES OF ENERGY

Different forms of Energy, Leading to different sources for human use: Fossil Fuels, solar energy; Biogas; Wind; Water and Tidal Energy; Nuclear Energy. Renewable versus non-renewable sources.

MOTION: FORCE AND NEWTON'S LAWS.

Displacement, Velocity, uniform & non-uniform motion along a straight line, acceleration distance-time and velocity, Time graphs for uniform and uniformly accelerated motion; Equations of motion by graphical method; Elementary idea of uniform circular motion.
Force and Motion; Newton's laws of motion Inertia of a body; Inertia and Mass, Momentum Force and acceleration, Elementary idea of conservation of momentum, Action and Reaction forces.

GRAVITATION: WORK, ENERGY AND POWER

Gravitation; Universal Law of Gravitation, Force of gravitation of the earth gravity, acceleration due to gravity; mass and weight; free fall. Work done by a force energy, power; Kinetic and Potential energy; law of conservation of energy.

FLOATATION

Thrust and Pressure, Archimedes Principle, Buoyancy, Elementary idea of relative density.

SOUND

Nature of Sound and its Propagation in various media, Speed of Sound, Range of hearing in Humans; Ultra Sound, Reflection of sound; Echo and SONAR; Structure of the Human Ear (Auditory aspect only)

MATTER-NATURE AND BEHAVIOUR: STATES OF MATTER

Gases, liquids, solids, plasma and Bose-Enstein condenstate , types of intermolecular forces.
Classification of matter into mixures and pure substances. Henry's Law. Concentration of solutions.
Colloids-phases of colloids, Tyndall effect, Brownian movement. Suspension.
Properties of matter. Measurement of properties of matter-S.I. system of units, physical and chemical changes
Laws of chemical combination
Gay Lussac's law, Avogadro law, atomic and molecular masses, average atomic mass, mole concept and molar masses, percentage compostion.

STRUCTURE OF ATOM

Dalton's atomic theory, Discharge tube experiments, J J Thomson's model of atom, Rutherford's model, Bohr's model of atom, electronic configuration, formation of ions, Characterisation of elements as metals, metalloids, or non-metals, isotopes (their applications), isobars and isotones.

PERIODIC CLASSIFICATION OF ELEMENTS

Mendeleev's periodic law, Periodic properties of elements, trends in the periods and groups: Improtance of the periodic table, position of hydrogen in the periodic table.

CHEMICAL SUBSTANCES

Nature and behaviour Acid, Basis and Salts: Classical definition of acids and bases, Bronsted-Lowry theory, Lewis conceipt of acid and bases, relative strengths of acids and bases, logarithmic or p scale-pH,pOH and pkw, ionic equilibria in a solution.

Action of indicators on acids and bases, sources of acid and bases, Salt-Classification of salts and their pH

CHEMICAL REACTIONS

Formulation of chemical equations, balancing chemical equations,
Types of chemical equations with examples

METALS AND NON-METALS

Characters of metals and non-metals including all properties and applications
Occurrence of metals in nature: ores and minerals, enrichment of ores – metallurgical operations
Corrosion: rusting of iron – prevention of corrosion

CARBON COMPOUNDS

Position of carbon in the periodic table. Concept of hybridization and shapes of molecules structural formula and molecular models, types of reactions undergone by organic compounds, homologous series of compounds having different functional groups, isomerism, IUPAC nomenclature of organic compounds.
Hydrocarbons – their classification formation of coal and petroleum
Industrial source, preparation and properties of alkanes

Alcohols: Preparation and properties. Qualitative analysis of alcohols, iodoform test, effect of alcohols on living beings.
Carboxylic acids: Preparation and properties.

Functional group analysis of carboxylic acid.
Soaps, detergents, biodegradable detergents. Carbon fibres.

CONSERVATION OF NATURAL RESOURCES

Pollution of river water, Ganga action plan for improving quality of water,
    (1)   Need for sustainable management of natural resources.
Development of non- conventional energy resources to prevent pollution and atmospheric conservation.

MAN MADE MATERIAL

Ceramics, cement, porcelain, glass, carbon fibres, soaps and detergents, polymers, fibres and plastics.

Life Processes

-      What are life Processes.
-      Need for Nutrition.
-      Different modes of Nutrition in animals.
-      What is Photosynthesis.
-      Various steps of holozoic nutrition.
-      Aerobic and anaerobic respiration.

- Transportation in Human beings.
- Transportation in Plants.
- Transportation in animals.
- Excretion in animals including Human beings.
- Excretion in Plants.

Control & Co-Ordination.

- Animals – nervous system.
- Basic unit of Nervous System in animals.
- Reflex action.
- Human Brain.
- Co-Ordination in plants.
- Geotropism – Positive, Negative.
- Hormones in animals.
- Endocrine & Exocrine glands.

Reproduction

- Importance of variation.
- Modes of Reproduction used by single organisms.
- Sexual Reproduction in plants and animals.
- Reproduction in Human beings.
- What happens when egg is not fertilised.
- Modes of avoiding pregnancy (family planning)

Heredity and Evolution

- What is heredity?
- Medals Law of inheritance.
- How is sex determined?
- Evolution & Classification.
- Acquired and inherited traits.
- Homologus and Analogous organs.
- What are fossils?
- Human Evolution.

The Human eye and the colourful world.

- Structure of eye
- Defects of eye and their correction

Natural resources

The fundamental unit of Life
- What are living organisms made of?
- Structure organization of cell

Tissues

- Define tissue
- Types of plants tissue and animals tissues

Diversity of living organisms

- Basis of Classification.
- Classification & Evolution.
- Hierarchy of classification – groups.
- Plantae, Animalia.
- Nomenclature.

Why do we fall ill

- Health & its failure.
- Diseases and their causes
- Types of diseases- Infectious, Noninfectious.
- Prevention of diseases
- Smmunisation

NATURAL RESOURCES

1. Our Environment:

Atmosphere, roll of atmosphere in climate control, wind, rain, environmental pollution:

Global warming and green house effect, acid rain, particulate pollutants, smog, formation of photochemical smog.

Formation of ozone and its break down ozone hole, causes of ozone hole formation, polar vortex, effects of depletion of ozone hole

Water pollution-oxygen demand, chemical oxygen demand, international standard of drinking water, processing of drinking water.

Soil pollution: water recycling, strategies to control environmental pollution, its collection and proper methods of disposal

Biogeochemical cycles: water cycle, nitrogen cycle, carbon cycle and oxygen cycle.

2. Breath of life: Air, Air pollution
3. Water a wonderful liquid
4. Water pollution
5. Biochemical cycles, Nitrogen cycle, Carbon cycle. Oxygen cycle.
6. The green house effect.

7. What is ozone layer. How does it protect the Earth. What are the causes of depletion of ozone layer. How can it affect day to day life of living organisms

Improvement in Food Resources

1. Improvement in crop yield.

2. Animal Husbandry.

3. Need for Intercropping.

4. Cross Breeding.