TG Ed.CET – 2026

(Telangana Education Common Entrance Test)

(Conducted by Kakatiya University, Warangal on behalf of TGCHE, Hyderabad)

SYLLABUS FOR TG Ed.CET-2026

The duration of the examination is 2 hours i.e., 120 minutes. The type of questions will be multiple choice questions (MCQs) with 4 alternatives / distracters. Each MCQ carries one mark. Entrance Test will be conducted in 5 subject areas.

S. No.	***Subjects***	***Number of questions***	***Marks***
1	Subject / Content (up to 10th class – Telangana State curriculum) Mathematics, Science (Biology & Physical Science) and Social Studies	60 (Maths – 20; Physical Science – 10; Biological Science-10; and Social Studies – 20)	60
2	Teaching Aptitude	20	20
3	General English	20	20
4	General Knowledge & Educational issues	30	30
5	Computer awareness	20	20
	Total	***150***	***150***

Entrance Test syllabus:

Section - 1

MATHEMATICS

1. NumberSystem

Fundamental operations - square roots and cubic roots -properties of different number systemstoRealNumbers – propertiesofnumberslikeeven,odd,prime,composite, co- prime, multiples, factors etc. – Polynomials of factorization- primefactorization, LCM and HCF of numbers- number patterns-progressions (arithmetic progression) – Playing with numbers (divisibilityrules, number puzzles) – fractions and decimals and their conversions with and without division- laws of logarithms- Mathematical units and their conversions- exponents and powers.

Setsandtheirrepresentation–typesofsets–operationsonsets–Venndiagrams.

2. CommercialMathematics

Comparing quantities using proportions -Ratio – inverse ratio, compound ratio - Proportion (direct and indirect) – unitary method – percentage – conversion from fraction, decimal to percentage and vice-versa- profit and loss- discount – Interest (simple and compound) – Time and distance – Time and work – Goods and Service Tax (GST)

3. Algebra

Algebraic expressions- Variables and constants, terms, expressions, degree –types of expressions (based on degree and terms) -factorization.

Operations on Algebraic expressions-laws and properties of exponents– factorization– algebraic identities- polynomials and their zeroes – remainder theorem and factortheorem– relationship between zeroes and coefficients of polynomials

Linear equations in one variable and two variables – pair of linear equations in two variables (conditions for consistent, inconsistent and dependent and their geometrical interpretations) and their solutions – Quadratic equations (nature ofroots) and finding the roots and forming a quadratic equation when roots are given.

4. Geometry

ElementsofGeometry – Basicgeometric ideas(point, line, planeetc.) –Angles(typesof angles)-Lines and angles – pairs of angles (complementary, supplementary etc.) vertically opposite angles, linear pair- parallel lines and a transversal, different angles formed and properties related to them.

Types of triangles (based on sides and angles) andtheirproperties-triangle inequalities – congruency and similarity of triangles and their criterion- basic proportionality theorem and converse-Pythagoras theorem and converse – areas of similar triangles.

Different types ofquadrilaterals (trapezium, parallelogram, etc.) and their properties – mid-point theorem and its converse.

Parts of a circle – different angles formed by an arc (chord) – perimeter and area of a sector – segments ofa circle – tangents and secants to a circle and their properties.

Cartesian system- plotting a point- distance between two points – section formula (mid-point, centroid, etc.) – area oftriangle – collinearity - slope ofa line.

5. Mensuration

Perimeter and area of plane figures (triangle, circle etc.) – surface areas and volumes of different solid figures (cubes, cylinder, etc.).

6. Trigonometry

Trigonometricratios–valuesforspecificangles(0^0,30^0,45^0,60^0,90^0)

Ratio of complementary angles – trigonometric identities – angle of elevation and depression and simple problems related to them- applications of trigonometry.

7. DataHandling

Collection, classification and types of data – tabular forms – graphical representation of data (pictogram, bar graph etc.) – reading and interpretation of data from graphs – mean, median and mode of ungrouped data – simple problems related to probability (dice, coins, deck of cards etc.)- Concept of complementary events. Frequency distribution.

Section – 1

PHYSICAL SCIENCE

1. Material

Transparent, translucent, opaque material. Characteristics of Solids, Liquids, Gases – sink & float – Soluble in water. Methods of separation (Hand packing, Winnowing, Sedimentation, Sewing, Filtration, Crystallization, Evaporation, Sublimation, Chromatography).

Characteristics of acids, bases – Change in color of litmus (Red, Blue) – Examples for acids & bases in daily life – Acid rains, impact, remedies - Neutralization -uses of acids, bases in daily life – Acidic and basic nature of salts – uses of salts.

Natural fiber, Synthetic fiber - Burning test - Blending – Laundry label symbols – plastic resin codes – Thermoplastics, Thermosetting plastics – Reduce, Recycle, Reuse, Recover.

General Physical Properties of Metals and nonmetals – Uses of metals and non- metals in daily life.

Archimedes principle – Pascal's principle and uses.

2. Light

Formation of shadow – Characteristics of shadow – straight line motion of light, pinhole camera – differences between shadow and images.

Reflection of light – Laws of reflection– Plane of reflection- Periscope – concave and convex mirrors - making of solar cooker.

Refraction of light - total internal reflection, applications - mirages – types of lenses - uses of convex and concave lenses in daily life.

Least distance of distinct vision – Angle of vision –Accommodation defects of human eye (Myopia, Hypermetropia, presbyopia) and their corrections – power of lens. Dispersion and formation of rainbow, Scattering & Blue color of the sky, Red color of Sun at the time of dawn & dusk.

3. Electricity &Magnetism

Types of magnets –like, unlike poles.

Simple electric circuit – symbols of components of circuit - torch.

Conductors, Insulators– parts of dry cell – series & parallel connections of dry cells and bulbs.

Electric conductivity of liquids - Electroplating, uses of it.

Heating effects of electric current – Fuse & MCB – electricity bill & unit - electric shock, precautions.

Difference between motor & generator – difference between AC and DC.

4. Heat

Heat is a form of energy –Heat and temperature – Thermometer (clinical thermometer, laboratory thermometer).Evaporation, factors affecting evaporation – condensation – Humidity – Dew &Fog – Boiling, Melting, Freezing – Enormous expansion of water.

5. Sound

Production of Sound – Propagation of sound in solids, liquids, gases & vacuum - Structure of human ear.

Types of waves (transverse , Longitudinal) –wave length, Amplitude, Loud and feeble sounds – Time period, Frequency, pitch – speed of sound wave in solids, liquids, gases.

Reflection of sound – Echo - Reverberation. Audible Range –Infrasonic sounds, Ultrasonic sounds, Uses of Ultrasonic sounds.Sound Pollution, effects, measures to be taken to control sound pollution.

6. Motion

Uniform, non-uniform motion - Translatory motion (Rectilinear motion, Curvilinear motion), Rotatory motion, Oscillatory motion.

Field forces (Magnetic force, Electrostatic force, Gravitational force) – Contact forces (Muscular force, Friction, Normal force, Tension) - Net Force, Free body diagram. Effects of force.

Factors affecting friction – Measures to be taken to increase friction, measures to be taken to decrease friction.

Potential energy, Kinetic energy. Renewable & Non-renewable energy resources. Finding centre of gravity.

Equations of Uniform accelerated motion.Daily life examples of Newton's Laws of Motion (1, 2, 3).

7. Changes

Change in seasons –Natural, man-made changes – Permanent, temporary changes - Change in state & shape of material – Reasons for change – Indications of change - Physical Change, Chemical Change.Rusting of Iron / Corrosion, Galvanization - Browning of Cut vegetables & its prevention – Crystallization.

8. Weather & Climate

Measuring the components of weather – Maximum-Minimum thermometer – Rain Gauge – Humidity.Air exerts pressure – Air expands on heating – effects of moving air - formation of Cyclone - Do's and Dont's during Cyclones – Post cyclone measures.

9. Coal &Petrol

Uses of coal, petroleum, natural gas –By products of petroleum, uses.Formation of coal, petroleum – Indiscriminate usage of energy resources, its effects.

Combustion – Ignition temperature –fuel, Calorific Value. Fire Control. Structure of Flame, Zones in it.

10. Some Natural Phenomena

Producing charge on an object– identifying charge on an object – measures to be taken during thunder – lightening conductor – earthquakes, causes, protection – seismograph – Richter scale

11. Stars & Solar System

Sundial–phases of moon – Types of solar and lunar eclipses – constellations – Polestar –Solar system (Planets, Asteroids, Comets, Meteors).

12. Metallurgy

Minerals, ores, Reactivity series of Metals.

13. Chemical Reactions

Elements – Compounds–Mixtures-Types of Mixtures (Homogeneous, Heterogeneous) – Solutions – Solvent, Solute.

Types of chemical reactions (chemical combination, chemical decomposition, chemical displacement, chemical double displacement / double decomposition).

14. Structure of the Atom

Wave nature of the light, Bohr's Model of Hydrogen atom, Quantum mechanical model of an atom.

Section -1

BIOLOGICALSCIENCE

1. Food

Food from plants and animals, Methods of preparing food, Food preservation methods, Food components – Carbohydrates, Proteins, Fats, Vitamins, Balanced diet, Malnutrition, Deficiency diseases, Food capture in organisms, Food habits inanimals.

2. LivingOrganisms

Prokaryotic and eukaryotic cell, Plant cell and animal cell, Cell structure and functions, Plant and animaltissues; Plant parts and functions, Fibre fromplants.

Characteristicsofliving organism, HierarchyofClassification, Movement ofhuman beings and animals, Characteristics ofdifferent animalphyla, Metamorphosis inorganisms, Sense organs.

Useful and harmful micro-organisms, Infectious and non-infectious diseases, Acute andChronic Diseases

3. LifeProcesses

Human digestive system, Human respiratory system, Human circulatory system, Human excretory system, Human nervous system, Human endocrine system, Human reproductive system; Cell cycle, Mitosis, Meiosis, Sex determination in human beings, Physical and behavioral changes in adolescents, Reproductive health, Speciation, Homologous and Analogous organs.

Photosynthesis,Partsoftheflower,vegetativepropagation,seeddispersal.

4. Biodiversity

Types of ecosystems - Terrestrial ecosystems and aquatic ecosystems, Adaptationsin plants and animals living in different ecosystems, Food chain, Food web, Endemic, Endangered and extinct species, Sanctuaries and National Parks.

Cultivation,Irrigation,Fertilization,Challengesinimprovingagriculturalproducts.

5. Pollution

Sourcesandeffectsofair,water,soilandsoundpollution,PollutionduetoUrbanization,Bioremediation,

Concepts of 4 Rs – Reduce, Reuse, Recycle, Recover.

Section - 1

SOCIALSTUDIES

1. Geography

Our Earth: Evolution, Latitudes and Longitudes, Movements of the Earth and Seasons, Relief Features ofIndia, Reading and Making Maps, Water Resources – Rivers and Tanks, Climate and Weather: Factors affecting the Climate and Weather, Natural Realms of the Earth: Lithosphere, Atmosphere, Hydrosphere, Biosphere, NaturalVegetation, Population, Settlements and Migration

2. History

Indus Valley Civilization, Emergence of Kingdoms: Mahajanapadas, First Empires: Mauryan Empire, Emergence of Regional Kingdoms – Kakatiya's and Vijayanagara Kingdoms, Delhi Sultanate-Satavahana Kingdom, Mughal Empire, Establishment of British Empire in India, Freedom Movement of India, Democratic and Nationalist Revolutions, Industrial Revolution, Colonialism in Latin America, Asia and Africa, Social Protest Movements : Environmental Movements, Women's Movements, World Between World Wars, Post World Wars – League of Nations, UNO, NAM, Cold War, The Movement forthe formation of Telangana State.

3. PoliticalScience

Indian Constitution- Salient Features, Forms of Government – Presidential and Parliamentary forms of Government, Government at Different Levels- Union, State, Local Self Government, Judicial System in India: Civil Law, Criminal Law, Courts at different levels, Democracy : An Evolving Ideas; Expansion of Democracy-Libya, Myanmar, Election Process in India, Rights: Human Rights and Fundamentals Rights, Disaster Management, SocialIssues: Communalism, Corruption, Poverty, Independent India: 1947- 1977, Emerging Political Trends- 1977-2000, Women Protection Acts-ChildRights, Traffic Education.

4. Economics

Money and Banking, Sectors of Economy: Agricultural, Industries, Service, Credit in Financial System, Prices and Cost of Living, The Government Budget and Taxation, Food Security, Factors of Production, Globalization, Sustainable Development, Gross Domestic Product; National Income /Per capita Income

Section - 2

TEACHINGAPTITUDE

Teaching Aptitude questions will be related to understanding teaching-learning process, classroom management and mentoring with specialreference to teacher – pupilrelationship.

Teaching requires certain characteristics like ability to communicate, ability to deal with Children, ability to recognize individual differences etc., apart from analytical thinking and general intelligence. One who has these characteristics will be able to become a goodteacher after training. Questions relating to these aspects will be included to test one's teaching aptitude.

Teaching aptitude questions will analyze and examine Teaching proficiency in Numeracy, Communication, and adaptability and would include the following

- Interest in Teaching
- Competencies and skills in Teaching
- Communication Skills related to Teaching
- Nature of Teaching
- Characteristics of Learners, Knowledge of Teaching methods.
- Knowledge of Evaluation Methods, Assessment and Measurement.
- How to Create Positive Learning Environment
- Attitude towards teaching.
- Teaching as a Profession, Teaching as an Occupation
- Ethics and Values in Teaching
- Concept of Learning; Process of Learning.
- Different types of Tests, Verbal test, Non-verbal test, Performance Test.
- Online Teaching, Features of Online Teaching
- Classroom management, Strategies for effective Classroom Management
- Student Engagement: Factors that enhance student engagement.
- Class work and Homework.
- Individual differences in students
- Concept of a Text Book and Work Book, Characteristics of a Good Text Book
- Teaching-Learning Resources
- Study habits and Study Skills of Students

Section - 3

GENERALENGLISH

1. Reading Comprehension
2. Spelling, Articles, Prepositions
3. Tenses, Subject – Verb Agreement
4. Voice, Reported Speech
5. Vocabulary-Synonyms, Antonyms and Homonyms
6. Connectivesand Linkers
7. Rearranging Jumbled Words / Sentences
8. Error Correction

Section - 4

GENERAL KNOWLEDGE&EDUCATIONALISSUES

Currentaffairs(IndiaandInternational),ContemporaryEducationalIssues.

1. Questions will be designed to test the ability of the candidate's general knowledge of the environment around him and its application to society.
2. Questions will also be designed to test knowledge of current events, Governance and Policy and of such matters of every day observation and experience in their scientific outlook as is expected ofaneducated person.
3. The test will also include questions relating to India and its neighboring Countries especially pertaining to History, Culture, Geography, Ecology, Economics, General Policy and Scientific Research, National Security, Cashless Economy.
4. NEP–2020, Success to Quality Education and Governance–School Education, Equitable and Inclusive Education: Issues of Socio-Economically Disadvantaged Groups (SEDGs), SSA, RTE, Digital Empowerment and Capacity Building, PM Gati-shakti National Master Plan, Holistic Education through integration of skilling, Indian knowledge system, PARAKH.

Section - 5

COMPUTERAWARENESS

- Types of memory and memory devices, Components of a computer, Input and Output devices, Various types of programming languages, Types of operating systems.
- Importance of different types of databases (Relationalandnon-relational).Keys in DBMS.
- MS Office – MS word: - Basic operations, saving retrievingfiles to and fromdifferent locations (Drives).Spell check, Text editing.
- MSExcel – components of Excel window, Editingdata in Excel worksheets, basic statistical applications.
- MSPowerPoint–creatingandviewingapresentation.
- IntroductiontoInternet–searchengines,Emails-openingaccount,Mailbox- Inbox, Outbox, Sorting and searching emails.
- VirusesandprotectionsystemsApplicationsofAlandMachineLearning.

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