



ACE
Engineering Academy
(Leading institute for ESE/GATE/PSUs)



TSPSC - AEE

ONLINE TEST SERIES



CIVIL ENGINEERING (CE)

—≡ No. of Tests : 26 ≡—

	Subject Wise Grand Tests	20
	Full Length Mock Tests	6

All tests will be available till 06-08-2017.

TEST SERIES HIGHLIGHTS ≡—

- ★ Rank will be given for each test.
- ★ Test wise and overall statistics.
- ★ Comparison with toppers.
- ★ Question wise and test wise time analysis & comparison with toppers on time management.

Subject-wise Tests

Tests will be activated at 6:00 pm on scheduled day

Test No	Subject Name	No. of Questions	Max Marks	Duration	Date of Activation
CE01	Fluid Mechanics and Hydraulics	50	100	50 Min	20.06.2017
CE02	Test-1 on General Studies & General Abilities	30	30	30 Min	21.06.2017
CE03	Strength of Materials	50	100	50 Min	23.06.2017
CE04	Test-2 on General Studies & General Abilities	30	30	30 Min	24.06.2017
CE05	Soil Mechanics and Foundation Engineering	50	100	50 Min	26.06.2017
CE06	Test-3 on General Studies & General Abilities	30	30	30 Min	27.06.2017
CE07	Theory of Structures	50	100	50 Min	29.06.2017
CE08	Test-4 on General Studies & General Abilities	30	30	30 Min	30.06.2017
CE09	Hydrology and Water Resources Engineering	50	100	50 Min	02.07.2017
CE10	Test-5 on General Studies & General Abilities	30	30	30 Min	03.07.2017
CE11	Transportation Engineering & Surveying	50	100	50 Min	05.07.2017
CE12	Test-6 on General Studies & General Abilities	30	30	30 Min	06.07.2017
CE13	Environmental Engineering	50	100	50 Min	08.07.2017
CE14	Test-7 on General Studies & General Abilities	30	30	30 Min	09.07.2017
CE15	Concrete Structures and Pre-Stressed Concrete	50	100	50 Min	11.07.2017
CE16	Test-8 on General Studies & General Abilities	30	30	30 Min	12.07.2017
CE17	Steel Structures & Engineering Geology	50	100	50 Min	14.07.2017
CE18	Test-9 on General Studies & General Abilities	30	30	30 Min	15.07.2017
CE19	Building Materials and Construction & Estimation, Costing and Construction Management	50	100	50 Min	17.07.2017
CE20	Test-10 on General Studies & General Abilities	30	30	30 Min	18.07.2017

Full Length Mock Tests

Test No	Mock codes	No. of Questions	Max Marks	Duration	Date of Activation
CE21	Mock-1 PAPER-1 (General Studies & General Abilities)	150	150	150 Min	20.07.2017
CE22	Mock-1 PAPER-2 (Engineering Discipline)	150	300	150 Min	21.07.2017
CE23	Mock-2 PAPER-1 (General Studies & General Abilities)	150	150	150 Min	25.07.2017
CE24	Mock-2 PAPER-2 (Engineering Discipline)	150	300	150 Min	26.07.2017
CE25	Mock-3 PAPER-1 (General Studies & General Abilities)	150	150	150 Min	30.07.2017
CE26	Mock-3 PAPER-2 (Engineering Discipline)	150	300	150 Min	31.07.2017

Syllabus for General Studies & Abilities (Paper-1)

Subject Name	Syllabus
Test-1 on General Studies & General Abilities	Physical, Social and Economic Geography of India & Telangana. Current affairs – Regional, National and International.
Test-2 on General Studies & General Abilities	Indian Constitution; Indian Political System; Governance and Public Policy. Current affairs – Regional, National and International.
Test-3 on General Studies & General Abilities	Socio-economic, Political and Cultural History of Modern India with special emphasis on Indian National Movement. Current affairs – Regional, National and International.
Test-4 on General Studies & General Abilities	Environmental issues; Disaster Management- Prevention and Mitigation Strategies. Current affairs – Regional, National and International. General Science; India's Achievements in Science and Technology.
Test-5 on General Studies & General Abilities	Basic English. (10th Class Standard)
Test-6 on General Studies & General Abilities	Logical Reasoning; Analytical Ability and Data Interpretation.
Test-7 on General Studies & General Abilities	Economic and Social Development of India and Telangana. Social Exclusion; Rights issues such as Gender, Caste, Tribe, Disability etc. and inclusive policies. Current affairs – Regional, National and International.
Test-8 on General Studies & General Abilities	Society, Culture, Heritage, Arts and Literature of Telangana. Policies of Telangana State. Current affairs – Regional, National and International.
Test-9 on General Studies & General Abilities	Socio-economic, Political and Cultural History of Telangana with special emphasis on Telangana Statehood Movement and formation of Telangana state. Current affairs – Regional, National and International.
Test-10 on General Studies & General Abilities	General Science; India's Achievements in Science and Technology. Current affairs – Regional, National and International.

Syllabus for Civil Engineering(Paper-2)

Subject Name	Syllabus
Strength of Materials	Strength of Materials: Simple stresses and strains, elastic constants and relationship between them; Compound bars; Temperature stresses; Shear forces and bending moment diagrams for beams; Principal stresses and Mohr's circle of stress, Theory of bending and bending stresses ; Shear stress distribution; Theory of torsion; Springs; Deflections of beams; Thin and thick cylinders;; Shear centre and unsymmetrical bending. Direct and bending stresses; Columns and struts;
Fluid Mechanics and Hydraulics	Fluid Properties; Measurement of Pressure - Manometers; Fluid Kinematics – Classification of Fluids, Stream function and Velocity potential, significance and use of Flownets, Fluid dynamics - Continuity equation, Bernoulli's equations and Impulse momentum equation; Laminar and Turbulent flow through pipes – significance of Reynolds number, Hagen – Poiseuille's equation, Darcy – Weisbach equation, Friction factor, Water hammer phenomenon; Compressible flow – Bernoulli's equation for Isothermal and Adiabatic conditions, Mach Number, Mach cone, stagnation properties; Steady uniform flow through open channels; Gradually varied flows – significance of Froude number, classification and computation of Flow profiles, Hydraulic jump, Surges; Boundary layer – Laminar and Turbulent Boundary layer, Boundary layer thickness, rough and smooth Boundaries, Boundary layer separation; Dimensional analysis and similarity laws; Hydraulic Turbines – classification, Velocity triangles, principles and design of reaction and impulse turbines; Centrifugal pumps – specific speed, work done and efficiency, characteristic curves.
Soil Mechanics and Foundation Engineering	Soil Mechanics: Physical properties of soils, Classification and identification, Permeability, Capillarity, Seepage, Compaction, Consolidation, Shear Strength, Earth pressure, Slope stability; Foundation Engineering: Site investigations, stress distribution in soils, Bearing capacity, Settlement analysis, Types of Foundation, Pile foundations, Foundations on expansive soils; swelling and its preventions; Cofferdams, Caissons, Dewatering, Bracing for excavations, Newmark charts, machine foundations.
Theory of Structures	Analysis of trusses, Betti-Maxwell theorem; Strain energy method; Moving loads and influence lines; Arches and suspension bridges; Static and kinematic indeterminacy; Moment distribution, Slope deflection, and Kani's methods applied to continuous beams and portal frames; Column analogy and matrix methods of analysis.

Subject Name	Syllabus
Environmental Engineering	<p>Water supply – objectives, rate of demand, population forecasts; Analysis of water – classification, design of coagulation, sedimentation, filtration, disinfection and softening processes; Methods of layout of distribution pipes – Hardy cross method; Waste water engineering – systems of sewerage, hydraulic formulae and design of sewers, BOD, COD, self purification of natural streams, methods of sewage disposal; Treatment of sewage – principles and design of grit chamber, sedimentation tanks, trickling filters, activated sludge process, sludge digestion tanks, septic tanks; Municipal solid waste – characteristics, collection and transportation of solid wastes; Air Pollution – types and sources of pollutants, air quality standards; Noise pollution – Impacts and permissible limits, measurement and control of noise pollution</p>
Concrete Structures and Pre-Stressed Concrete	<p>Concrete Structures: Materials, permissible stresses and IS Specifications; Working stress methods; Limit State Method - Stress Blocks parameters, design of Beams, Slabs, Columns and Footing; Design for Shear and Torsion; Design of Retaining Walls, Water tanks, and T-Beam Slab bridges; Yield line theory.</p> <p>Pre-Stressed Concrete: Basic concepts, material for pre-stressing, losses in Pre-stress, classification of pre-stressing system; Analysis of PSC Sections.</p>
Steel Structures & Engineering Geology	<p>Steel Structures: Properties of steel sections, permissible stresses, IS Specifications; Riveted and welded joints and connections; Design of simple and compound Beams and Columns, Column bases, Roof trusses, Plate and Gantry Girders; Plate Girder Lattice Girder Railway bridges, and Bearings. Plastic analysis.</p> <p>Engineering Geology: Mineralogy, Structural Geology, Groundwater Exploration methods; Engineering Geology applications for Tunnels, Dams and Reservoirs; Geological hazards and preventive measures.</p>
Transportation Engineering & Surveying	<p>Transportation Engineering: Highway Classification as per IRC; Highway alignment; Engineering Surveys; Geometric Design; Cross sectional elements of road; Gradient; Grade compensation; Traffic Surveys – speed, Volumes, origin and destination; Highway capacity and level of service as per HCM 2000; Intersection – at grade and grade separated; Channelization; Rotary intersection; signal design – Webster method, traffic signs, pavement marking; Parking studies, accidental studies, pavement types, Factors considered for pavement design, flexible and rigid pavements design concepts.</p> <p>Railway Engineering: Permanent way, rails, sleepers, ballast; Creep, coning of wheel, rail fixtures and fastenings, super elevation, cant deficiency, curves, turnout; Points and crossings.</p> <p>Airport Engineering: Selection of site of Airport, runway orientation and design, wind rose diagram, basic run way length, correction to basic runway length.</p> <p>Surveying: Principle and classification of surveying, chain surveying; Compass surveying; Levelling and contouring; Theodolite surveying; curves; Introduction and Fundamental concepts of electronic measuring instruments – EDM, Total station, GIS & GPS.</p>

Subject Name	Syllabus
<p style="text-align: center;">Hydrology and Water Resources Engineering</p>	<p>Hydrological cycle; Rainfall – types and measurement, network design; Infiltration - Φ- index; Runoff – process, factors and determination of runoff, dependable yield; Floods – flood hydrograph, computation of flood peak using rational formula, unit hydrograph method and Gumbel’s extreme value methods; Groundwater – types of aquifer and properties, Darcy’s law, specific yield, steady radial flow to wells in confined and unconfined aquifers; Irrigation – types and advantages, soil water plant relationship, consumptive use, duty, delta, base period, crops and their water requirements; Single and multipurpose projects; Dams – classification, forces and design of Gravity dam and Earth dam; Spillways – types, energy dissipation, stilling basin, Appurtenances; Canals – alignment, Kennedy’s and Lacey’s theories, lining of Canals; Weirs – components, design of vertical drop and sloping glacis weir; Seepage forces – Bligh’s Theory, Khosla’s theory; Canal falls – types and design principles; Cross drainage works – classification and design principles of aqueducts; Hydropower – classification and principle components of Hydroelectric power plants.</p>
<p style="text-align: center;">Building Materials and Construction & Estimation, Costing and Construction Management</p>	<p>Bricks– Types of Bricks, Indian standard classification, properties; Stones – Types of stones, classification, properties, dressing and polishing of stones; Methods of Quarrying; Cement – Different grades and types of cement, properties and IS specifications; Aggregates – coarse and fine aggregate, properties and IS specifications; Cement Mortar – Proportions of cement mortar for various applications; Concrete – Constituents of Concrete, Different grades of Concrete, mix proportioning using IS Code, Properties of fresh and hardened Concrete; Admixtures – Types of Admixtures</p> <p>Abstract estimate: Detailed estimate – centerline, long & short wall method, various items of Civil Engineering works as per Indian Standard, General Specifications - Earth Work, Brick / Stone Masonry in Cement Mortar, RCC, Plastering in Cement Mortar, Floor finishes, white wash, colour wash; Standard schedule of rates, lead and lift, preparation of lead statement; Computation of earth work – Mid-ordinate, Mean Sectional area, Trepezoidal method, Prismoidal Rule; Approximate estimate – Plinth area and cubic rate estimate.</p>