



**ACE**  
Engineering Academy  
(Leading Institute for ESE/GATE/PSUs)

**TSPSC - AEE**

**ONLINE TEST SERIES**



**CIVIL ENGINEERING (CE)**

**—≡ No. of Tests : 20 ≡—**



Subject Wise Grand Tests

16



Full Length Mock Tests

4

**All tests will be available till TSPSC Examination**

**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	30	60	30 Min	05.02.2018
CE02	Strength of Materials	30	60	30 Min	06.02.2018
CE03	Test-1 on General Studies & General Abilities	30	30	30 Min	07.02.2018
CE04	Soil Mechanics and Foundation Engineering	30	60	30 Min	08.02.2018
CE05	Theory of Structures	30	60	30 Min	09.02.2018
CE06	Test-2 on General Studies & General Abilities	30	30	30 Min	10.02.2018
CE07	Hydrology and Water Resources Engineering	30	60	30 Min	11.02.2018
CE08	Transportation Engineering & Surveying	30	60	30 Min	12.02.2018
CE09	Test-3 on General Studies & General Abilities	30	30	30 Min	13.02.2018
CE10	Environmental Engineering	30	60	30 Min	14.02.2018
CE11	Concrete Structures and Pre-Stressed Concrete	30	60	30 Min	15.02.2018
CE12	Test-4 on General Studies & General Abilities	30	30	30 Min	16.02.2018
CE13	Steel Structures & Engineering Geology	30	60	30 Min	17.02.2018
CE14	Test-5 on General Studies & General Abilities	30	30	30 Min	18.02.2018
CE15	Building Materials and Construction & Estimation, Costing and Construction Management	30	60	30 Min	19.02.2018
CE16	Test-6 on General Studies & General Abilities	30	30	30 Min	20.02.2018

## Full Length Mock Tests

Test No	Mock codes	No. of Questions	Max Marks	Duration	Date of Activation
CE17	Mock-1 PAPER-1 (General Studies & General Abilities)	150	150	150 Min	25.02.2018
CE18	Mock-1 PAPER-2 (Engineering Discipline)	150	300	150 Min	26.02.2018
CE19	Mock-2 PAPER-1 (General Studies & General Abilities)	150	150	150 Min	05.03.2018
CE20	Mock-2 PAPER-2 (Engineering Discipline)	150	300	150 Min	06.03.2018

## Syllabus for General Studies & Abilities (Paper-1)

Subject Name	Syllabus
<b>Test-1 on General Studies &amp; General Abilities</b>	Society, Culture, Heritage, Arts and Literature of Telangana. Policies of Telangana State. Current affairs – Regional, National and International. International Relations and Events.
<b>Test-2 on General Studies &amp; General Abilities</b>	Economic and Social Development of India and Telangana. 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. International Relations and Events.
<b>Test-3 on General Studies &amp; General Abilities</b>	Physical, Social and Economic Geography of India. Physical, Social and Economic Geography and Demography of Telangana. Current affairs – Regional, National and International. International Relations and Events.
<b>Test-4 on General Studies &amp; General Abilities</b>	General Science; India's Achievements in Science and Technology. Environmental issues; Disaster Management- Prevention and Mitigation Strategies. Current affairs – Regional, National and International. International Relations and Events.
<b>Test-5 on General Studies &amp; General Abilities</b>	Socio-economic, Political and Cultural History of Modern India with special emphasis on Indian National Movement. Indian Constitution; Indian Political System; Governance and Public Policy. Current affairs – Regional, National and International. International Relations and Events.
<b>Test-6 on General Studies &amp; General Abilities</b>	Logical Reasoning; Analytical Ability and Data Interpretation. Basic English. (10th Class Standard)

## Syllabus for Civil Engineering( Paper-2)

Subject Name	Syllabus
<b>Strength of Materials</b>	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.
<b>Fluid Mechanics and Hydraulics</b>	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.
<b>Soil Mechanics and Foundation Engineering</b>	<b>Soil Mechanics:</b> Physical properties of soils, Classification and identification, Permeability, Capillarity, Seepage, Compaction, Consolidation, Shear Strength, Earth pressure, Slope stability; <b>Foundation Engineering:</b> 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.
<b>Theory of Structures</b>	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
<b>Environmental Engineering</b>	<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>
<b>Concrete Structures and Pre-Stressed Concrete</b>	<p><b>Concrete Structures:</b> 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><b>Pre-Stressed Concrete:</b> Basic concepts, material for pre-stressing, losses in Pre-stress, classification of pre-stressing system; Analysis of PSC Sections.</p>
<b>Steel Structures &amp; Engineering Geology</b>	<p><b>Steel Structures:</b> 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><b>Engineering Geology:</b> Mineralogy, Structural Geology, Groundwater Exploration methods; Engineering Geology applications for Tunnels, Dams and Reservoirs; Geological hazards and preventive measures.</p>
<b>Transportation Engineering &amp; Surveying</b>	<p><b>Transportation Engineering:</b> 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><b>Surveying:</b> 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 &amp; GPS.</p>

Subject Name	Syllabus
<p style="text-align: center;"><b>Hydrology and Water Resources Engineering</b></p>	<p>Hydrological cycle; Rainfall – types and measurement, network design; Infiltration - <math>\Phi</math>- 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;"><b>Building Materials and Construction &amp; Estimation, Costing and Construction Management</b></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 &amp; 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>