



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

TNPSC - AE

ONLINE TEST SERIES



CIVIL ENGINEERING (CE)

≡ No. of Tests : 22 ≡

	Subject Wise Grand Tests	18
	Full Length Mock Tests	4

All tests will be available till 20th May 2018

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	BUILDING MATERIALS AND CONSTRUCTION PRACTICES	PAPER-I	34	51	30 Min	15-04-2018
CE02	GENERAL SCIENCE	PAPER-II	25	50	30 Min	16-04-2018
CE03	ENGINEERING SURVEY	PAPER-I	34	51	30 Min	17-04-2018
CE04	CURRENT EVENTS	PAPER-II	25	50	30 Min	18-04-2018
CE05	STRENGTH OF MATERIALS	PAPER-I	34	51	30 Min	19-04-2018
CE06	GEOGRAPHY	PAPER-II	25	50	30 Min	20-04-2018
CE07	STRUCTURAL ANALYSIS	PAPER-I	34	51	30 Min	21-04-2018
CE08	HISTORY AND CULTURE OF INDIA	PAPER-II	25	50	30 Min	22-04-2018
CE09	GEOTECHNICAL ENGINEERING	PAPER-I	34	51	30 Min	23-04-2018
CE10	INDIAN POLITY	PAPER-II	25	50	30 Min	24-04-2018
CE11	ENVIRONMENTAL ENGINEERING AND POLLUTION CONTROL	PAPER-I	34	51	30 Min	25-04-2018
CE12	INDIAN ECONOMY	PAPER-II	25	50	30 Min	26-04-2018
CE13	DESIGN OF REINFORCED CONCRETE, PRESTRESSED CONCRETE AND STEEL STRUCTURES	PAPER-I	34	51	30 Min	27-04-2018
CE14	INDIAN NATIONAL MOVEMENT	PAPER-II	25	50	30 Min	28-04-2018
CE15	HYDRAULICS AND WATER RESOURCES ENGINEERING	PAPER-I	34	51	30 Min	29-04-2018
CE16	APTITUDE AND MENTAL ABILITY TESTS	PAPER-II	25	50	30 Min	30-04-2018
CE17	URBAN AND TRANSPORTATION ENGINEERING	PAPER-I	34	51	30 Min	01-05-2018
CE18	PROJECT MANAGEMENT AND ESTIMATING	PAPER-I	34	51	30 Min	02-05-2018

Full Length Mock Tests

Test No	Mock codes		No. of Questions	Max Marks	Duration	Date of Activation
CE19	Mock-1 PAPER-1 (Civil Engineering)	PAPER-I	200	300	180 Min	06-05-2018
CE20	Mock-1 PAPER-2 (General Studies)	PAPER-II	100	200	120 Min	07-05-2018
CE21	Mock-2 PAPER-1 (Civil Engineering)	PAPER-I	200	300	180 Min	12-05-2018
CE22	Mock-2 PAPER-2 (General Studies)	PAPER-II	100	200	120 Min	13-05-2018

Syllabus for Civil Engineering(Paper-I)

Subject Name	Syllabus
BUILDING MATERIALS AND CONSTRUCTION PRACTICES	Properties of engineering materials-brick, stones, aggregates, cement (types and grades), concrete (mix design), Concrete admixtures, Self compacting Concrete, steel and new materials. - Construction of stone masonry, brick masonry and R.C.C. and block masonry – construction equipments - Building bye - laws and Development regulations practiced in Tamil Nadu - Provisions for fire safety, lighting and ventilation- Acoustics.
ENGINEERING SURVEY	Survey - computation of areas - Chain Survey - Compass surveying - Plane table survey - levelling - fly levelling - L.S. and C.S. - Contour volumes - Theodolite survey - Traversing - Heights and Distances - Geodetic Observations- Tachometry and Triangulation - Use of EDM, GPS and Remote sensing techniques.
STRENGTH OF MATERIALS	Stresses and strains -Thermal stresses- elastic constants - Beams and bending - Bending moment and shear force in beams - Theory of simple bending - deflection of beams - torsion - Combined stresses – stresses on inclined planes - Principal stresses and principal planes - Theories of Failure – Analysis of plane trusses.
STRUCTURAL ANALYSIS	Indeterminate beams - Stiffness and flexibility methods of structural analysis - Slope deflection - Moment Distribution method – Arches and suspension cables - Theory of columns - moving loads and influence lines – Matrix method- Stability of retaining walls – plastic theory.
GEOTECHNICAL ENGINEERING	Formation of soils - types of soils - classification of soils for engineering practice - Field identification of soils - Physical properties of soils - Three phase diagram - permeability characteristics of soils - stress distribution in soils - Theory of consolidation, shear strength parameters of soils - Compaction of soils. Soil exploration - Soil sampling techniques - Borelog profile - shallow foundations - Terzhagi's bearing capacity theory - Pile foundation - Group action of piles - settlement of foundations.
ENVIRONMENTAL ENGINEERING AND POLLUTION CONTROL	Sources of water - Ground water Hydraulics - Characteristics of water - Water analysis - water treatment - water borne diseases. Sewerage system - Design of sewerage systems - sewer appurtenances - Pumping of sewage - sewage treatment and disposal - Industrial waste treatment - solid waste management - Air, water and Noise pollution control- e waste management.

Subject Name	Syllabus
DESIGN OF REINFORCED CONCRETE, PRESTRESSED CONCRETE AND STEEL STRUCTURES	Design of concrete members - limit state and working stress design concepts - design of slabs - one way, two way and flat slabs - Design of singly and doubly reinforced sections and flanged sections - design of columns and footings – pre-stressing - systems and methods- post tensioning slabs - Design of pre-stressed members for flexure. Design of tension and compression members - Design of Bolted and welded connections design of members of Truss - designs of columns and bases - design of beams, plate girders and gantry girder.
HYDRAULICS AND WATER RESOURCES ENGINEERING	Hydrostatics-applications of Bernoulli equation – flow measurement in channels, Applications of Momentum equation, Kinematics of flow. Water resources in Tamil Nadu - Water resource planning - Master plan for water management flood control –Runoff estimation – hydrograph – flood routing - Soil plant water relationship - Water requirement of crops - Irrigation methods –Design of alluvial canal and design of headworks. Waterlogging and land reclamation - Cross drainage works.
URBAN AND TRANSPORTATION ENGINEERING	Urbanisation trend and impact - Slum clearance and slum improvement programmes - Different modes of transport and their characteristics. Geometric design of highways. – Design and Construction of bituminous and concrete roads - Maintenance of roads. Railways-Components of permanent way - Signalling, Interlocking and train control. Airport planning-Components of Airport - Site selection – Runways – Planning of terminal buildings. Harbours & Ports- Layout of a harbour - Docks - Breakwaters.
PROJECT MANAGEMENT AND ESTIMATING	Construction management - Construction planning - Scheduling and monitoring - Cost control, Quality control and inspection - Network analysis - CPM and PERT methods of project management - Resources planning and resource management. Types of estimates - Preparation of technical specifications and tender documents - Building valuation - law relating to contracts and arbitration.

Syllabus for General Studies (Paper-II)

Subject Name	Syllabus
GENERAL SCIENCE	<p>Physics: Universe-General Scientific laws-Scientific instruments-Inventions and discoveries-National scientific laboratories-Science glossary-Mechanics and properties of matter-Physical quantities, standards and units-Force, motion and energy-Electricity and Magnetism, Electronics and Communication -Heat, light and sound-Atomic and nuclear physics-Solid State Physics – Spectroscopy-Geophysics - Astronomy and space science.</p> <p>Chemistry: Elements and Compounds-Acids, bases and salts-Oxidation and reductionChemistry of ores and metals-Carbon, nitrogen and their compounds-Fertilizers, pesticides, insecticides-Biochemistry and biotechnology-Electrochemistry-Polymers and plastics.</p> <p>Botany: Main Concepts of life science-The cell-basic unit of life-Classification of living organism-Nutrition and dietetics-Respiration-Excretion of metabolic waste-Biocommunication.</p> <p>Zoology: Blood and blood circulation-Endocrine system-Reproductive system-Genetics the science of heredity-Environment, ecology, health and hygiene, Bio-diversity and its conservation-Human diseases-Communicable diseases and non-communicable diseases- prevention and remedies- Alcoholism and drug abuse-Animals, plants and human life.</p>
CURRENT EVENTS	<p>History: Latest diary of events – National--National symbols-Profile of States-Defence, national security and terrorism-World organizations-pacts and summits-Eminent persons & places in news-Sports & games-Books & authors -Awards & honours-Cultural panoramaLatest historical events - India and its neighbours - Latest terminology- Appointments-who is who?</p> <p>Political Science: 1. India’s foreign policy 2. Latest court verdicts – public opinion 3. Problems in conduct of public elections 4. Political parties and political system in India 5. Public awareness & General administration 6. Role of Voluntary organizations & Govt., 7. Welfare oriented govt. schemes, their utility</p> <p>Geography: Geographical landmarks-Policy on environment and ecology.</p> <p>Economics: Current socio-economic problems-New economic policy & govt. sector.</p> <p>Science: Latest inventions on science & technology-Latest discoveries in Health ScienceMass media & communication.</p>
GEOGRAPHY	<p>Earth and Universe - Solar system-Atmosphere hydrosphere, lithosphere - Monsoon, rainfall, weather and climate - Water resources - rivers in India-Soil, minerals & natural resources - Natural vegetation - Forest & wildlife-Agricultural pattern, livestock & fisheries - Transport including Surface transport & communication - Social geography – population - density and distribution-Natural calamities – disaster management-Climate change - impact and consequences - mitigation measures - Pollution Control.</p>

Subject Name	Syllabus
<p>HISTORY AND CULTURE OF INDIA</p>	<p>Pre-historic events -Indus valley civilization-Vedic, Aryan and Sangam age-Maurya dynasty-Buddhism and Jainism-Guptas, Delhi Sultans, Mughals and Marathas-Age of Vijayanagaram and the bahmanis-South Indian history - Culture and Heritage of Tamil people-Advent of European invasion-Expansion and consolidation of British rule - Effect of British rule on socio-economic factors-Social reforms and religious movements - India since independence-Characteristics of Indian culture-Unity in diversity – race, colour, language, custom-India-as secular state-Organizations for fine arts, dance, drama, music Growth of rationalist, Dravidian movement in TN-Political parties and populist schemes Prominent personalities in the various spheres – Arts, Science, literature and Philosophy – Mother Teresa, Swami Vivekananda, Pandit Ravishankar , M.S.Subbulakshmi, Rukmani Arundel and J.Krishnamoorthy etc.</p>
<p>INDIAN POLITY</p>	<p>Constitution of India - Preamble to the constitution- Salient features of constitution- Union, State and territory- Citizenship-rights amend duties- Fundamental rights- Fundamental duties- Human rights charter- Union legislature – Parliament- State executive- State Legislature – assembly- Status of Jammu & Kashmir- Local government – panchayat raj – Tamil Nadu- Judiciary in India – Rule of law/Due process of law- Indian federalism – center – state relations-. Emergency provisions- Civil services in India- Administrative challenges in a welfare state- Complexities of district administration- Elections - Election Commission Union and State. Official language and Schedule-VIII- Amendments to constitution- Schedules to constitution-. Administrative reforms & tribunals- Corruption in public life- Anti-corruption measures – Central Vigilance Commission, lok-adalats, Ombudsman, - Comptroller and Auditor General of India- Right to information - Central and State Commission- Empowerment of women- Voluntary organizations and public grievances Redressal- Consumer protection forms.</p>
<p>INDIAN ECONOMY</p>	<p>Nature of Indian economy-Need for economic planning-Five-year plan models-an assessment-Land reforms & agriculture-Application of science in agriculture Industrial growth-Capital formation and investment-Role of public sector & disinvestmentDevelopment of infrastructure- National income- Public finance & fiscal policy- Price policy & public distribution- Banking, money & monetary policy- Role of Foreign Direct Investment (FDI)- WTO-globalization & privatization- Rural welfare oriented programmesSocial sector problems – population, education, health, employment, poverty-HRD – sustainable economic growth- Economic trends in Tamil Nadu - Energy Different sources and development- Finance Commission -Planning Commission- National Development Council.</p>

Subject Name	Syllabus
INDIAN NATIONAL MOVEMENT	National renaissance-Early uprising against British rule-1857 Revolt- Indian National Congress-Emergence of national leaders-Gandhi, Nehru, Tagore, Nethaji - Growth of militant movements -Different modes of agitations-Era of different Acts & Pacts-World war & final phase struggle-Communalism led to partition-Role of Tamil Nadu in freedom struggle - Rajaji, VOC, Periyar, Bharathiar & Others-Birth of political parties /political system in India since independence.
APTITUDE AND MENTAL ABILITY TESTS	Conversion of information to data-Collection, compilation and presentation of data - Tables, graphs, diagrams-Parametric representation of data-Analytical interpretation of data -Simplification-Percentage-Highest Common Factor (HCF)-Lowest Common Multiple (LCM)-Ratio and Proportion-Simple interest-Compound interest-Area-Volume-Time and Work-Behavioural ability -Basic terms, Communications in information technologyApplication of Information and Communication Technology (ICT)- Decision making and problem solving-Logical Reasoning-Puzzles-Dice-Visual Reasoning-Alpha numeric Reasoning-Number Series-Logical Number/Alphabetical/Diagrammatic Sequences.