ACE
Engineering Academy
(Leading institute for ESE/GATE/PSUs)
Since 1995

APPSC-AEE *(Prelims)*
Online Test Series

CIVIL ENGINEERING

No. of Tests : 18

🖥 Subject Wise Tests	15
🖥 Full Length Mock Tests	3

All tests will be available till 10th Feb 2019

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
Test-01	GS	Economic development in India since independence with emphasis on Andhra Pradesh + Science & Technology and information Technology + Current affairs	30	30	30 Min	20-12-2018
Test-02	SM-1	Forces, moments, Equilibrium; Applying the Equation of Equilibrium, Planar Trusses; Friction; Lifting machines, definitions, Law of machine, study of important lifting machines; virtual work principal.	30	30	30 Min	21-12-2018
Test-03	FM-1	Fluid statics: Dimensions and units: physical properties of fluids-specific gravity, viscosity, and surface tension -vapour pressure and their influence on fluid motion-atmospheric, Pascal's law, gauge and vacuum pressures – Measurement of pressure-Piezometer, U-tube and differential manometers..Hydrostatics, Fluid forces on planes and curved surfaces, submerged and floating bodies, Buoyancy and stability. Fluid kinematics: description of flow pattern and types of fluid flows – Velocity and acceleration: convective, temporal, tangential and normal accelerations, control volume-basic principles of fluid flow, continuity equation for 3-D, 2-D, 1- D flow. Rotational and irrotational motion, Velocity potential, stream function, flow net.	30	30	30 Min	22-12-2018
Test-04	GS	Social- economic and political history of modern India with emphasis on Andhra Pradesh + General Science + Current affairs	30	30	30 Min	23-12-2018
Test-05	SM-2	Simple Stresses & Strains: Elasticity and plasticity, Types of stresses & strains, Generalized Hooke's law – Stress–strain diagram for mild steel – Working stress –Factor of safety – Lateral strain, Poisson's ratio & volumetric strain – Elastic modulii & the relationship between them – Bars of varying section – composite bars –Temperature stresses. Strain energy – Resilience – Gradual, sudden, impact and shock loadings.	30	30	30 Min	24-12-2018
Test-06	FM-2	Fluid dynamics: Surface and body forces – Euler's and Bernoulli's equations for flow along a stream line and its applications, momentum equation and its applications. Flow measurement devices – Gross measurement: Venturimeter, Orificemeter, Turbine flow meters, Rotameters; Pressure measurement: Pitot tubes, hot wire/film anemometer, their measurement principles and sources of errors; calibration. Hydrodynamic force of jets on stationary and moving flat, inclined, and curved vanes	30	30	30 Min	25-12-2018

Test No		Subject Name	No. of Questions	Max Marks	Duration	Date of Activation
Test-07	GS	Indian polity and governance: constitutional issues, public policy, reforms and e-governance initiatives with specific reference to Andhra Pradesh + Bifurcation of Andhra Pradesh and its Administrative, Economic, Social, Cultural, Political, and Legal implications/problems + Current affairs	30	30	30 Min	26-12-2018
Test-08	SM-3	Shear Force (S.F) and Bending Moment (B.M): Definition of beam –Types of beams – Concept of shear force and bending moment – S.F and B.M for cantilever, simply supported and overhanging beams subjected to point loads, U.D.L., uniformly varying loads and combination of these loads – Point of contra flexure –Relation between S.F., B.M and rate of loading at a section of a beam. Flexural Stresses: Theory of simple bending – Assumptions – bending equation: Neutral axis – bending stresses – section modulus of different sections – Design of simple beam sections. Shear Stresses: Derivation of formula –Shear stress distribution across various beam sections	30	30	30 Min	27-12-2018
Test-09	FM-3	Closed conduit flow: Reynolds experiment – Major and Minor losses in pipes-pipes in series and pipes in parallel-total energy line-hydraulic gradient line, water hammer. Boundary Layer Concepts: Definition, thicknesses, characteristics along thin plate, laminar and turbulent boundary layers boundary layer in transition, separation of boundary layer, submerged objects – Drag and lift.	30	30	30 Min	28-12-2018
Test-10	GS	Physical geography of Indian sub-continent and Andhra Pradesh + Disaster management: vulnerability profile, prevention and mitigation strategies, Application of Remote Sensing and GIS in the assessment of Disaster + Sustainable Development and Environmental Protection + Current affairs	30	30	30 Min	29-12-2018
Test-11	SM-4	Principal Stresses and Strains: Stresses on an inclined section of a bar under axial loading – Compound stresses – Normal and tangential stresses on an inclined plane for biaxial stresses – Two perpendicular normal stresses accompanied by a state of simple shear –Mohr's circle of stresses –Principal stresses and strains – Analytical and graphical solutions. Different theories of Failure: Various theories of failure.	30	30	30 Min	30-12-2018

Test No		Subject Name	No. of Questions	Max Marks	Duration	Date of Activation
Test-12	FM-4	Hydraulic Turbines: Classification of turbines, Heads and efficiencies, impulse and reaction turbines, Pelton wheel, Francis turbine and Kaplan turbine – working proportions, velocity diagrams, work done, efficiencies , hydraulic design – Draft tube theory-functions and efficiency. Performance of hydraulic turbines: Geometric similarity, Unit and specific quantities, characteristic curves, governing of turbines, selection of type of turbine, cavitation. Centrifugal pumps: Classification, working, work done – barometric head-loss and efficiencies, specific speed – Performance characteristic curves, NPSH. Selection of pumps and economic evaluation of pumping.	30	30	30 Min	31-12-2018
Test-13	GS	Logical reasoning, analytical ability and data interpretation + Data Analysis: a) Tabulation of data b) Visual representation of data c) Basic data analysis (Summary Statistics such as mean, median, mode, variance and coefficient of variation) and Interpretation	30	30	30 Min	02-01-2019
Test-14	SM-5	Columns and struts – Euler's column theory – types of end conditions; critical load on the column – derivations – Rankin's formula for columns. Torsion of Circular Shafts: Theory of pure torsion – Torsion Equations: Assumptions made in the theory of pure torsion – Torsional moment of resistance – Polar section modulus – Power transmitted by shafts – Combined bending and torsion and end thrust. Springs-Helical and leaf springs. Thin & Thick Cylinders and Spherical shells: Thin seamless shells – formula for longitudinal and circumferential stresses and max shear stresses – hoop, longitudinal and volumetric strains – changes in diameter, and volume of thin shells.	30	30	30 Min	03-01-2019
Test-15	FM-5	Hydraulic Directional Control – Check Valves, Shuttle Valves, two- three- and four-Way Directional Control Valves, Directional Control Valve Actuation. Hydraulic Pressure Control – Pressure Relief Valves, Unloading Valves, Pressure Reducing Valves, Sequence Valves, Counterbalance Valves, Pressure Compensated Pumps. Hydro Projects And Plant: Classification – Typical layouts – plant auxiliaries – plant operation, pumped storage plants. Hydro Electric Power Plant: Water power – Hydrological cycle / flow measurement – drainage area characteristics – Hydrographs – Storage and Pondage – Classification of dams and spill ways.	30	30	30 Min	04-01-2019

Full Length Mock Tests

Test No	Subject Name	No. of Questions	Max Marks	Duration	Date of Activation
Test-16	Full Length Mock Test - 1	150	150	2 Hours 30 Min	10-01-2019
Test-17	Full Length Mock Test - 2	150	150	2 Hours 30 Min	17-01-2019
Test-18	Full Length Mock Test - 3	150	150	2 Hours 30 Min	24-01-2019

Note: The Syllabus considered as per Notifications of APPSC. ACE Engineering Academy does not take any responsibility for deviations in syllabus in the final APPSC exam. As per Notification of APPSC each question carries '1' mark and negative marking of 1/3rd (i.e. 0.33 Marks) for each wrong answer.

Syllabus for General Studies & Mental Ability (Part-A)

Subject Name	Syllabus

GENERAL STUDIES AND MENTAL ABILITY	1. Events of national and international importance.
	 2. Current affairs- international, national and regional.
	 3. General Science and it applications to the day to day life Contemporary developments in Science & Technology and information Technology
	 4. Social- economic and political history of modern India with emphasis on Andhra Pradesh.
	 5. Indian polity and governance: constitutional issues, public policy, reforms and e-governance initiatives with specific reference to Andhra Pradesh.
	 6. Economic development in India since independence with emphasis on Andhra Pradesh.
	 7. Physical geography of Indian sub-continent and Andhra Pradesh.
	 8. Disaster management: vulnerability profile, prevention and mitigation strategies, Application of Remote Sensing and GIS in the assessment of Disaster.
	 9. Sustainable Development and Environmental Protection
	 10. Logical reasoning, analytical ability and data interpretation.
	 11. Data Analysis:
	   a) Tabulation of data
	   b) Visual representation of data
	   c) Basic data analysis (Summary Statistics such as mean, median, mode, variance and coefficient of variation) and Interpretation
	 12. Bifurcation of Andhra Pradesh and its Administrative, Economic, Social, Cultural, Political, and Legal implications/problems.

Syllabus for Civil Engineering (Part-B)

Subject Name	Syllabus
Strength of Material	Forces, moments, Equilibrium; Applying the Equation of Equilibrium, Planar Trusses; Friction; Simple Stresses & Strains: Elasticity and plasticity, Types of stresses & strains, Generalized Hooke's law – Stress–strain diagram for mild steel – Working stress –Factor of safety – Lateral strain, Poisson's ratio & volumetric strain – Elastic modulii & the relationship between them – Bars of varying section – composite bars –Temperature stresses. Strain energy – Resilience – Gradual, sudden, impact and shock loadings. Shear Force (S.F) and Bending Moment (B.M): Definition of beam –Types of beams – Concept of shear force and bending moment – S.F and B.M for cantilever, simply supported and overhanging beams subjected to point loads, U.D.L., uniformly varying loads and combination of these loads – Point of contra flexure –Relation between S.F., B.M and rate of loading at a section of a beam. Flexural Stresses: Theory of simple bending - Assumptions – bending equation: Neutral axis – bending stresses – section modulus of different sections – Design of simple beam sections. Shear Stresses: Derivation of formula –Shear stress distribution across various beam sections Principal Stresses and Strains: Stresses on an inclined section of a bar under axial loading – Compound stresses – Normal and tangential stresses on an inclined plane for biaxial stresses – Two perpendicular normal stresses accompanied by a state of simple shear –Mohr's circle of stresses –Principal stresses and strains – Analytical and graphical solutions. Different theories of Failure: Various theories of failure. Columns and struts – Euler's column theory – types of end conditions; critical load on the column - derivations – Rankin's formula for columns. Lifting machines, definitions, Law of machine, study of important lifting machines; virtual work principal. Torsion of Circular Shafts: Theory of pure torsion – Torsion Equations: Assumptions made in the theory of pure torsion – Torsional moment of resistance – Polar section modulus – Power transmitted by shafts – Combined bending and torsion and end thrust. Springs-Helical and leaf springs. Thin & Thick Cylinders and Spherical shells: Thin seamless shells – formula for longitudinal and circumferential stresses and max shear stresses – hoop, longitudinal and volumetric strains – changes in diameter, and volume of thin shells.

Subject Name	Syllabus
Fluid Mechanic and Machinery	Fluid statics: Dimensions and units: physical properties of fluids-specific gravity, viscosity, and surface tension -vapour pressure and their influence on fluid motion-atmospheric, Pascal's law, gauge and vacuum pressures – Measurement of pressure-Piezometer, U-tube and differential manometers..Hydrostatics, Fluid forces on planes and curved surfaces, submerged and floating bodies, Buoyancy and stability. Fluid kinematics: description of flow pattern and types of fluid flows – Velocity and acceleration: convective, temporal, tangential and normal accelerations, control volume-basic principles of fluid flow, continuity equation for 3-D, 2-D, 1- D flow. Rotational and irrotational motion, Velocity potential, stream function, flow net. Fluid dynamics: Surface and body forces – Euler's and Bernoulli's equations for flow along a stream line and its applications, momentum equation and its applications. Flow measurement devices – Gross measurement: Venturimeter, Orificemeter, Turbine flow meters, Rotameters; Pressure measurement: Pitot tubes, hot wire/film anemometer, their measurement principles and sources of errors; calibration.
	Closed conduit flow: Reynolds experiment - Major and Minor losses in pipes-pipes in series and pipes in parallel-total energy line-hydraulic gradient line, water hammer. Boundary Layer Concepts: Definition, thicknesses, characteristics along thin plate, laminar and turbulent boundary layers boundary layer in transition, separation of boundary layer, submerged objects – Drag and lift.
	Basics of turbo machinery: Hydrodynamic force of jets on stationary and moving flat, inclined, and curved vanes, velocity diagrams, work done and efficiency, Hydraulic Turbines: Classification of turbines, Heads and efficiencies, impulse and reaction turbines, Pelton wheel, Francis turbine and Kaplan turbine - working proportions, work done, efficiencies , hydraulic design – Draft tube theory-functions and efficiency. Performance of hydraulic turbines: Geometric similarity, Unit and specific quantities, characteristic curves, governing of turbines, selection of type of turbine, cavitation. Centrifugal pumps: Classification, working, work done – barometric head-loss and efficiencies, specific speed - Performance characteristic curves, NPSH. Selection of pumps and economic evaluation of pumping.
	Hydraulic Directional Control – Check Valves, Shuttle Valves, two- three- and four-Way Directional Control Valves, Directional Control Valve Actuation. Hydraulic Pressure Control –Pressure Relief Valves, Unloading Valves, Pressure Reducing Valves, Sequence Valves, Counterbalance Valves, Pressure Compensated Pumps.
	Hydro Projects And Plant: Classification – Typical layouts – plant auxiliaries – plant operation, pumped storage plants. Hydro Electric Power Plant: Water power – Hydrological cycle / flow measurement – drainage area characteristics – Hydrographs – Storage and Pondage – Classification of dams and spill ways.