



ACE®

Engineering Academy
Leading Institute for ESE/GATE/PSUs

GATE-2023

Online Test Series

Civil Engineering Schedule

No. of Tests : 54 + 54 *free* practice tests of GATE-2022 Online Test Series

	GATE - 2023 Test Series	Practice Tests GATE - 2022 OTS
Topic wise Tests	24	24
Grand Tests (Subject Wise Tests + Multi-Subject Wise Tests)	18	18
Full Length Mock Tests	12	12
Total Tests - 108		

Note:

- ★ The Syllabus considered as per Previous year Notification of GATE. ACE Engineering Academy does not take any responsibility for deviations in syllabus in the final exam.
- ★ The Dates of Tests may Change according to the GATE-2023 Exam schedule.
- ★ Tests will be activated at 06:00 pm on the scheduled day.

Topic wise Tests

(No. of Questions: 15, Time duration: 45 Minutes and Marks: 25 M)

Test No	Name of the Test	Date of Activation
Test-01	<p>Engineering Mathematics-1: Linear Algebra: Matrix algebra; Systems of linear equations; Eigen values and Eigen vectors. Calculus: Functions of single variable; Limit, continuity and differentiability; Mean value theorems, local maxima and minima; Taylor series; Evaluation of definite and indefinite integrals, application of definite integral to obtain area and volume; Partial derivatives; Total derivative; Gradient, Divergence and Curl, Vector identities; Directional derivatives; Line, Surface and Volume integrals. Ordinary Differential Equation (ODE): First order (linear and non-linear) equations; higher order linear equations with constant coefficients; Euler-Cauchy equations; initial and boundary value problems.</p>	15-04-2022
Test-02	<p>Engineering Mathematics-2: Partial Differential Equation (PDE): Fourier series; separation of variables; solutions of one- dimensional diffusion equation; first and second order one-dimensional wave equation and two-dimensional Laplace equation. Probability and Statistics: Sampling theorems; Conditional probability; Descriptive statistics - Mean, median, mode and standard deviation; Random Variables – Discrete and Continuous, Poisson and Normal Distribution; Linear regression. Numerical Methods: Error analysis. Numerical solutions of linear and non-linear algebraic equations; Newton's and Lagrange polynomials; numerical differentiation; Integration by trapezoidal and Simpson's rule; Single and multi-step methods for first order differential equations.</p>	
Test-03	<p>Geotechnical Engineering-1: <i>Soil Mechanics:</i> Three-phase system and phase relationships, index properties; Unified and Indian standard soil classification system; Permeability - one dimensional flow, Seepage through soils – two - dimensional flow, flow nets, uplift pressure, piping, capillarity, seepage force; Principle of effective stress and quicksand condition; Compaction of soils; One- dimensional consolidation, time rate of consolidation; Shear Strength, Mohr's circle, effective and total shear strength parameters, Stress-Strain characteristics of clays and sand; Stress paths.</p>	19-04-2022
Test-04	<p>Geotechnical Engineering-2: <i>Foundation Engineering:</i> Sub-surface investigations - Drilling bore holes, sampling, plate load test, standard penetration and cone penetration tests; Earth pressure theories - Rankine and Coulomb; Stability of slopes – Finite and infinite slopes, Bishop's method; Stress distribution in soils – Boussinesq's theory; Pressure bulbs, Shallow foundations – Terzaghi's and Meyerhoff's bearing capacity theories, effect of water table; Combined footing and raft foundation; Contact pressure; Settlement analysis in sands and clays; Deep foundations - dynamic and static formulae, Axial load capacity of piles in sands and clays, pile load test, pile under lateral loading, pile group efficiency, negative skin friction.</p>	

Test No	Name of the Test	Date of Activation
Test-05	Structural Analysis-1: Statically determinate and indeterminate structures by force/ energy methods; Method of superposition; Analysis of trusses, Arches, cables.	26-04-2022
Test-06	Structural Analysis-2 Analysis of Beams, and frames; Displacement methods: Slope deflection and moment distribution methods; Influence lines; Stiffness and flexibility methods of structural analysis.	
Test-07	Concrete Structures: Working stress and Limit state design concepts; Design of beams, slabs, columns; Bond and development length; Prestressed concrete beams.	
Test-08	Steel Structures: Working stress and Limit state design concepts; Design of tension and compression members, beams and beam- columns, column bases; Connections - simple and eccentric, beam-column connections, plate girders and trusses; Concept of plastic analysis - beams and frames.	
Test-09	Solid Mechanics-1: Simple stress and strain relationships, Complex Stresses and Strains, Bending moment and shear force in statically determinate beams; Deflections & Slopes, buckling of column, combined and direct bending stresses	03-05-2022
Test-10	Solid Mechanics-2: Simple bending theory, flexural and shear stresses, shear centre; Uniform torsion, Moment of Inertia.	
Test-11	Fluid Mechanics: Properties of fluids, fluid statics; Continuity, momentum and energy equations and their applications; Potential flow, Laminar and turbulent flow; Flow in pipes, pipe networks; Concept of boundary layer and its growth; Concept of lift and drag.	
Test-12	Hydraulics: Forces on immersed bodies; Flow measurement in channels and pipes; Dimensional analysis and hydraulic similitude; Channel Hydraulics - Energy-depth relationships, specific energy, critical flow, hydraulic jump, uniform flow, gradually varied flow and water surface profiles.	
Test-13	Hydrology: Hydrologic cycle, precipitation, evaporation, evapo-transpiration, watershed, infiltration, unit hydrographs, hydrograph analysis, flood estimation and routing, reservoir capacity, surface run-off models, ground water hydrology - steady state well hydraulics and aquifers; Application of Darcy's law.	10-05-2022
Test-14	Irrigation: Types of irrigation systems and methods; Crop water requirements - Duty, delta, evapo-transpiration; Gravity Dams and Spillways; Lined and unlined canals, Design of weirs on permeable foundation; cross drainage structures.	

Test No	Name of the Test	Date of Activation
Test-15	<p>Environmental Engineering-1: <i>Water and Waste Water Quality and Treatment:</i> Basics of water quality standards – Physical, chemical and biological parameters; Water quality index; Unit processes and operations; Water requirement; Water distribution system; Drinking water treatment.</p>	
Test-16	<p>Environmental Engineering-2: <i>Water and Waste Water Quality and Treatment:</i> Sewerage system design, quantity of domestic wastewater, primary and secondary treatment. Effluent discharge standards; Sludge disposal; Reuse of treated sewage for different applications. <i>Air Pollution:</i> Types of pollutants, their sources and impacts, air pollution control, air quality standards, Air quality Index and limits. <i>Municipal Solid Wastes:</i> Characteristics, generation, collection and transportation of solid wastes, engineered systems for solid waste management (reuse/ recycle, energy recovery, treatment and disposal).</p>	17-05-2022
Test-17	<p>Transportation Engineering-1: <i>Transportation Infrastructure:</i> Geometric design of highways - cross-sectional elements, sight distances, horizontal and vertical alignments. Geometric design of railway Track – Speed and Cant. Concept of airport runway length, calculations and corrections; taxiway and exit taxiway design. <i>Highway Pavements:</i> Highway materials - desirable properties and tests; Desirable properties of bituminous paving mixes:</p>	24-05-2022
Test-18	<p>Transportation Engineering-2: <i>Highway Pavements:</i> Design factors for flexible and rigid pavements; Design of flexible and rigid pavement using IRC codes. <i>Traffic Engineering:</i> Traffic studies on flow and speed, peak hour factor, accident study, statistical analysis of traffic data; Microscopic and macroscopic parameters of traffic flow, fundamental relationships; Traffic signs; Signal design by Webster’s method; Types of intersections; Highway capacity</p>	24-05-2022
Test-19	<p>Geomatics Engineering: Principles of surveying; Errors and their adjustment; Maps - scale, coordinate system; Distance and angle measurement - Levelling and trigonometric levelling; Traversing and triangulation survey; Total station; Horizontal and vertical curves. Photogrammetry and Remote Sensing - Scale, flying height; Basics of remote sensing and GIS.</p>	
Test-20	<p>Engineering Mechanics: System of forces, free-body diagrams, equilibrium equations; Internal forces in structures; Friction and its applications; Centre of mass; Free vibration of undamped SDOF system.</p>	31-05-2022

Test No	Name of the Test	Date of Activation
Test-21	Construction Materials and CPM <i>Construction materials:</i> Structural steel - composition, material properties and behaviour; Concrete - constituents, mix design, short-term and long-term properties; <i>Construction Management:</i> Types of construction projects; Project planning and network analysis - PERT and CPM; Cost estimation	
Test-22	Verbal Ability: Basic English grammar: tenses, articles, adjectives, prepositions, conjunctions, verb-noun agreement, and other parts of speech. Basic vocabulary: words, idioms, and phrases in context. Reading and comprehension. Narrative sequencing.	
Test-23	Quantitative Aptitude: Data interpretation: data graphs (bar graphs, pie charts, and other graphs representing data), 2- and 3-dimensional plots, maps, and tables. Numerical computation and estimation: ratios, percentages, powers, exponents and logarithms, permutations and combinations, and series. Mensuration and geometry. Elementary statistics and probability.	07-06-2022
Test-24	Analytical Aptitude: Logic: deduction and induction, Analogy, Numerical relations and reasoning Spatial Aptitude: Transformation of shapes: translation, rotation, scaling, mirroring, assembling, and grouping Paper folding, cutting, and patterns in 2 and 3 dimensions	

Subject Wise Grand Tests

(No. of Questions: 30, Time duration: 90 Minutes and Marks: 50 M)

Test-25	Engineering Mathematics	28-06-2022
Test-26	Engineering Mechanics and Solid Mechanics	
Test-27	Environmental engineering	05-07-2022
Test-28	Structural Analysis	
Test-29	Concrete Structures & Steel Structures	12-07-2022
Test-30	Geotechnical Engineering	
Test-31	Hydrology & Irrigation	19-07-2022
Test-32	Fluid Mechanics and Hydraulics	
Test-33	Transportation Engineering	26-07-2022
Test-34	Geomatics Engineering	
Test-35	Construction Materials & CPM	02-08-2022
Test-36	General Aptitude	

Full Length Mock Test - 1st Series

(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)

Test No	Name of the Test	Date of Activation
Test-37	Full Length Mock Test-1	16-08-2022
Test-38	Full Length Mock Test-2	23-08-2022
Test-39	Full Length Mock Test-3	30-08-2022
Test-40	Full Length Mock Test-4	13-09-2022
Test-41	Full Length Mock Test-5	20-09-2022
Test-42	Full Length Mock Test-6	27-09-2022

Multi-Subject Wise Grand Tests

(No. of Questions: 30, Time duration: 90 Minutes and Marks: 50 M)

Test-43	Engineering Mechanics, Solid Mechanics and Structural Analysis	11-10-2022
Test-44	Geotechnical Engineering and Fluid Mechanics and Hydraulics	
Test-45	Construction Materials and CPM, Concrete Structures and Steel Structures	18-10-2022
Test-46	Hydrology, Irrigation and Environmental engineering	
Test-47	Transportation Engineering and Geomatics Engineering	25-10-2022
Test-48	Engineering Mathematics and General Aptitude	

Full Length Mock Test - 2nd Series

(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)

Test-49	Full Length Mock Test-7	15-11-2022
Test-50	Full Length Mock Test-8	22-11-2022
Test-51	Full Length Mock Test-9	29-11-2022
Test-52	Full Length Mock Test-10	27-12-2022
Test-53	Full Length Mock Test-11	03-01-2023
Test-54	Full Length Mock Test-12	10-01-2023

Free Practice Tests of GATE-2022 Online Test Series

Topic wise Tests

(No. of Questions: 15, Time duration: 45 Minutes and Marks: 25 M)

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Test-01	<p>Engineering Mathematics-1: Linear Algebra: Matrix algebra; Systems of linear equations; Eigen values and Eigen vectors. Calculus: Functions of single variable; Limit, continuity and differentiability; Mean value theorems, local maxima and minima; Taylor series; Evaluation of definite and indefinite integrals, application of definite integral to obtain area and volume; Partial derivatives; Total derivative; Gradient, Divergence and Curl, Vector identities; Directional derivatives; Line, Surface and Volume integrals. Ordinary Differential Equation (ODE): First order (linear and non-linear) equations; higher order linear equations with constant coefficients; Euler-Cauchy equations; initial and boundary value problems.</p>	14-03-2022
Test-02	<p>Engineering Mathematics-2: Partial Differential Equation (PDE): Fourier series; separation of variables; solutions of one- dimensional diffusion equation; first and second order one-dimensional wave equation and two-dimensional Laplace equation. Probability and Statistics: Sampling theorems; Conditional probability; Descriptive statistics - Mean, median, mode and standard deviation; Random Variables – Discrete and Continuous, Poisson and Normal Distribution; Linear regression. Numerical Methods: Error analysis. Numerical solutions of linear and non-linear algebraic equations; Newton's and Lagrange polynomials; numerical differentiation; Integration by trapezoidal and Simpson's rule; Single and multi-step methods for first order differential equations.</p>	
Test-03	<p>Geotechnical Engineering-1: <i>Soil Mechanics:</i> Three-phase system and phase relationships, index properties; Unified and Indian standard soil classification system; Permeability - one dimensional flow, Seepage through soils – two - dimensional flow, flow nets, uplift pressure, piping, capillarity, seepage force; Principle of effective stress and quicksand condition; Compaction of soils; One- dimensional consolidation, time rate of consolidation; Shear Strength, Mohr's circle, effective and total shear strength parameters, Stress-Strain characteristics of clays and sand; Stress paths.</p>	
Test-04	<p>Geotechnical Engineering-2: <i>Foundation Engineering:</i> Sub-surface investigations - Drilling bore holes, sampling, plate load test, standard penetration and cone penetration tests; Earth pressure theories - Rankine and Coulomb; Stability of slopes – Finite and infinite slopes, Bishop's method; Stress distribution in soils – Boussinesq's theory; Pressure bulbs, Shallow foundations – Terzaghi's and Meyerhoff's bearing capacity theories, effect of water table; Combined footing and raft foundation; Contact pressure; Settlement analysis in sands and clays; Deep foundations - dynamic and static formulae, Axial load capacity of piles in sands and clays, pile load test, pile under lateral loading, pile group efficiency, negative skin friction.</p>	

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Test-16	<p>Environmental Engineering-2: <i>Water and Waste Water Quality and Treatment:</i> Sewerage system design, quantity of domestic wastewater, primary and secondary treatment. Effluent discharge standards; Sludge disposal; Reuse of treated sewage for different applications. <i>Air Pollution:</i> Types of pollutants, their sources and impacts, air pollution control, air quality standards, Air quality Index and limits. <i>Municipal Solid Wastes:</i> Characteristics, generation, collection and transportation of solid wastes, engineered systems for solid waste management (reuse/ recycle, energy recovery, treatment and disposal).</p>		
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Subject Wise Grand Tests

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Test-33	Transportation Engineering	
Test-34	Geomatics Engineering	
Test-35	Construction Materials & CPM	
Test-36	General Aptitude	

Test No	Name of the Test	Date of Activation
Multi-Subject Wise Grand Tests <i>(No. of Questions: 30, Time duration: 90 Minutes and Marks: 50 M)</i>		
Test-37	Engineering Mechanics, Solid Mechanics and Structural Analysis	20-03-2022
Test-38	Geotechnical Engineering and Fluid Mechanics and Hydraulics	
Test-39	Construction Materials and CPM, Concrete Structures and Steel Structures	
Test-40	Hydrology, Irrigation and Environmental engineering	
Test-41	Transportation Engineering and Geomatics Engineering	
Test-42	Engineering Mathematics and General Aptitude	

Full Length Mock Tests <i>(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)</i>		
Test-43	Full Length Mock Test-1	01-04-2022
Test-44	Full Length Mock Test-2	
Test-45	Full Length Mock Test-3	
Test-46	Full Length Mock Test-4	
Test-47	Full Length Mock Test-5	
Test-48	Full Length Mock Test-6	
Test-49	Full Length Mock Test-7	
Test-50	Full Length Mock Test-8	
Test-51	Full Length Mock Test-9	
Test-52	Full Length Mock Test-10	
Test-53	Full Length Mock Test-11	
Test-54	Full Length Mock Test-12	