






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

GATE – 2020

Online Test Series

CIVIL ENGINEERING (CE)

No. of Tests : 64 + **Free** 52 Practice Tests of GATE - 2019 Online Test Series

	GATE - 2020 Test Series	Practice Tests GATE - 2019 Test Series
 Topic wise Tests	22	22
 Subject Wise / Multi Subject Grand Tests	30	18
 Full Length Mock Tests	12	12

All tests will be available till GATE -2020 Examination.

TEST SERIES HIGHLIGHTS

- ★ All India 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.

Topic wise Tests

Each test carries 25 marks and 45 minutes duration

Test consists of 5 one mark questions and 10 two marks questions

Tests will be activated at 2:00 pm on scheduled day

Test No	Topic code	Topic	Date of Activation
CE-01	GEM-1 (Engineering Mathematics)	Linear Algebra, Calculus, Ordinary Differential Equation & Partial Differential Equation	02-05-2019
CE-02	GEM-2 (Engineering Mathematics)	Numerical Methods, Probability and Statistics, Laplace transform & Fourier series	
CE-03	GMC-1 (Engineering Mechanics)	System of forces, free-body diagrams, equilibrium equations; Internal forces in structures; Friction and its applications; Kinematics of point mass and rigid body; Centre of mass; Euler's equations of motion; Impulse-momentum; Energy methods; Principles of virtual work.	
CE-04	GGT - 1 (Geotechnical Engineering)	Origin of soils, soil structure and fabric; Three-phase system and phase relationships, index properties; Unified and Indian standard soil classification system; Permeability - one dimensional flow, Darcy's law; Seepage through soils - two-dimensional flow, flow nets, uplift pressure, piping; Principle of effective stress, capillarity, seepage force and quicksand condition; Compaction in laboratory and field conditions; Onedimensional consolidation, time rate of consolidation; Mohr's circle, stress paths, effective and total shear strength parameters, characteristics of clays and sand.	
CE-05	GGT - 2 (Geotechnical Engineering)	Foundation Engineering: Sub-surface investigations - scope, 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, method of slices and Bishop's method; Stress distribution in soils - Boussinesq's and Westergaard's theories, 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 - types of piles, dynamic and static formulae, load capacity of piles in sands and clays, pile load test, negative skin friction.	
CE-06	GSA - 1 (Structural Analysis)	Statically determinate and indeterminate structures by force/ energy methods; Method of superposition; Analysis of trusses, Arches, cables.	09-05-2019
CE-07	GSA - 2 (Structural Analysis)	Analysis of Beams, and frames; Displacement methods: Slope deflection and moment distribution methods; Influence lines; Stiffness and flexibility methods of structural analysis.	
CE-08	GCS - 1 (Concrete Structures) & GSS - 1 (Steel Structures)	Working stress, Limit state and Ultimate load design concepts; Design of beams; Shear; Bond and development length. Riveted, bolted, Welded and Eccentric Connections, Tension & Compression Members, Column Bases & Column Splices.	
CE-09	GCS - 2 (Concrete Structures) & GSS - 2 (Steel Structures)	Design of Slabs, columns; Footing, Limit State of Serviceability; Prestressed concrete; Analysis of beam sections at transfer and service loads. Plastic analysis of beams and frames, Beams, Plate Girder, Gantry Girders & Roof Trusses.	
CE-10	GSM - 1 (Solid Mechanics)	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	16-05-2019
CE-11	GSM - 2 (Solid Mechanics)	Simple bending theory, flexural and shear stresses, shear centre; Uniform torsion, Moment of Inertia, Theories of Failures.	

Test No	Topic code	Topic	Date of Activation
CE-12	GFM – 1 (Fluid Mechanics)	Properties of fluids, fluid statics; Forces on immersed bodies; Continuity, momentum, energy and corresponding equations; Potential flow, applications of momentum and energy equations; Flow measurement in channels and pipes; Laminar and turbulent flow; Flow in pipes, pipe networks; Concept of boundary layer and its growth.	16-05-2019
CE-13	GFM – 2 (Fluid Mechanics)	Dimensional analysis and hydraulic similitude; Kinematics of flow, velocity triangles; Basics of hydraulic machines, specific speed of pumps and turbines; Channel Hydraulics - Energy-depth relationships, specific energy, critical flow, slope profile, hydraulic jump, uniform flow and gradually varied flow.	
CE-14	GHI – 1 (Hydrology & Irrigation)	Hydrologic cycle, precipitation, evaporation, evapo-transpiration, watershed, infiltration, unit hydrographs, hydrograph analysis, flood estimation and routing, reservoir capacity, reservoir and channel routing, surface run-off models, ground water hydrology - steady state well hydraulics and aquifers; Application of Darcy's law.	23-05-2019
CE-15	GHI – 2 (Hydrology & Irrigation)	Duty, delta, estimation of evapo-transpiration; Crop water requirements; Design of lined and unlined canals, head works, gravity dams and spillways; Design of weirs on permeable foundation; Types of irrigation systems, irrigation methods; Water logging and drainage; Canal regulatory works, cross-drainage structures, outlets and escapes.	
CE-16	GEE – 1 (Environmental engineering)	Quality standards, basic unit processes and operations for water treatment. Drinking water standards, water requirements, basic unit operations and unit processes for surface water treatment, distribution of water.	
CE-17	GEE – 2 (Environmental engineering)	Sewage and sewerage treatment, quantity and characteristics of wastewater. Primary, secondary and tertiary treatment of wastewater, effluent discharge standards. Domestic wastewater treatment, quantity of characteristics of domestic wastewater, primary and secondary treatment. Unit operations and unit processes of domestic wastewater, sludge disposal. Air Pollution: Types of pollutants, their sources and impacts, air pollution meteorology, air pollution control, air quality standards and limits. Municipal Solid Wastes: Characteristics, generation, collection and transportation of solid wastes, engineered systems for solid waste management (reuse/ recycle, energy recovery, treatment and disposal). Noise Pollution: Impacts of noise, permissible limits of noise pollution, measurement of noise and control of noise pollution.	
CE-18	GTE – 1 (Transportation Engineering) & GGE-1 (Geomatics Engineering)	Highway alignment and engineering surveys; Geometric design of highways - cross-sectional elements, sight distances, horizontal and vertical alignments; Highway materials - desirable properties and quality control tests; Design of bituminous paving mixes. Geometric design of railway track; Airport runway length, taxiway and exit taxiway design. Errors and their adjustment; Maps - scale, coordinate system; Distance and angle measurement - Levelling and trigonometric levelling; Traversing survey; Contours; Areas and volumes.	30-05-2019
CE-19	GTE-2 (Transportation Engineering) & GGE – 2 (Geomatics Engineering)	Design factors for flexible and rigid pavements; Design of flexible pavement using IRC: 37-2012; Design of rigid pavements using IRC: 58-2011; Distresses in concrete pavements. Traffic Engineering: Traffic studies on flow, speed, travel time - delay and O-D study, PCU, peak hour factor, parking study, accident study and analysis, statistical analysis of traffic data; Microscopic and macroscopic parameters of traffic flow, fundamental relationships; Control devices, signal design by Webster's method; Types of intersections and channelization . Highway capacity and level of service of rural highways and urban roads. Triangulation survey; Total station; Horizontal and vertical curves. Photogrammetry - scale, flying height; Remote sensing - basics, platform and sensors, visual image interpretation; Basics of Geographical information system (GIS) and Geographical Positioning system (GPS).	
CE-20	GCM (Construction Materials & Management)	Construction materials: Construction Materials: Structural steel - composition, material properties and behaviour; Concrete - constituents, mix design, short-term and long-term properties; Bricks and mortar; Timber; Bitumen. Construction Management: Types of projects, Tendering & Contracts, Rate analysis, standard specifications, Cost Estimation, Project planning and Network Analysis – PERT and CPM.	
CE-21	GGA– 1 (General Aptitude)	English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction.	
CE-22	GGA– 1 (General Aptitude)	Numerical computation, numerical estimation, numerical reasoning and data interpretation.	

Subject-wise Grand Tests 1st Series

Each test carries 50 marks and 90 minutes duration

Test consists of 10 one mark questions and 20 two marks questions

Test No	Subject Code	Name of the Subject	Date of Activation
CE-23	GEM	Engineering Mathematics	06-06-2019
CE-24	GMC & GSM	Engineering Mechanics & Strength of Materials(Solid Mechanics)	
CE-25	GEE	Environmental engineering	13-06-2019
CE-26	GSA	Structural Analysis	
CE-27	GCS & GSS	Concrete Structures & Steel Structures	20-06-2019
CE-28	GGT	Geotechnical Engineering	
CE-29	GHI	Hydrology & Irrigation	27-06-2019
CE-30	GFM	Fluid Mechanics	
CE-31	GTE	Transportation Engineering	04-07-2019
CE-32	GGE	Geomatics Engineering	
CE-33	GCM	Construction Materials & Management	06-07-2019
CE-34	GGA	General Aptitude	

Full Length Mock GATE - 1st Series

As per GATE pattern

Each test carries 100 Marks and 3 Hours duration

Test No	Mock codes	Name of the Subject	Date of Activation
CE-35	Mock – 1	Full Length GATE Mock Test-1	11-07-2019
CE-36	Mock – 2	Full Length GATE Mock Test-2	18-07-2019
CE-37	Mock – 3	Full Length GATE Mock Test-3	25-07-2019

Subject-wise Grand Tests 2nd Series

Each test carries 50 marks and 90 minutes duration

Test No	Subject Code	Name of the Subject	Date of Activation
CE-38	GEM	Engineering Mathematics	08-08-2019
CE-39	GMC & GSM	Engineering Mechanics & Strength of Materials(Solid Mechanics)	
CE-40	GEE	Environmental engineering	15-08-2019
CE-41	GSA	Structural Analysis	
CE-42	GCS & GSS	Concrete Structures & Steel Structures	22-08-2019
CE-43	GGT	Geotechnical Engineering	
CE-44	GHI	Hydrology & Irrigation	29-08-2019
CE-45	GFM	Fluid Mechanics	
CE-46	GTE	Transportation Engineering	05-09-2019
CE-47	GGE	Geomatics Engineering	
CE-48	GCM	Construction Materials & Management	07-09-2019
CE-49	GGA	General Aptitude	

Full Length Mock GATE - 2nd Series (As per GATE pattern)

Test No	Mock codes		Date of Activation
CE-50	Mock – 4	Full Length GATE Mock Test-4	12-09-2019
CE-51	Mock – 5	Full Length GATE Mock Test-5	19-09-2019
CE-52	Mock – 6	Full Length GATE Mock Test-6	26-09-2019

Multi-Subject wise Grand Tests**Each test carries 50 marks and 90 minutes duration**

Test No	Subject Code	Name of the Subject	Date of Activation
CE-53	GMC, GSM & GSA	Engineering Mechanics, Solid Mechanics & Structural Analysis	03-10-2019
CE-54	GGT & GFM	Geotechnical Engineering & Fluid Mechanics	
CE-55	GCM, GCS & GSS	Construction Materials & Management, Concrete Structures & Steel Structures	17-10-2019
CE-56	GHI & GEE	Hydrology & Irrigation & Environmental engineering	
CE-57	GTE & GGE	Transportation Engineering & Geomatics Engineering	24-10-2019
CE-58	GEM & GGA	Engineering Mathematics & General Aptitude	

Full Length Mock GATE - 3rd Series (As per GATE pattern)

Test No	Mock codes		Date of Activation
CE-59	Mock – 7	Full Length GATE Mock Test-7	07-11-2019
CE-60	Mock – 8	Full Length GATE Mock Test-8	14-11-2019
CE-61	Mock – 9	Full Length GATE Mock Test-9	21-11-2019
CE-62	Mock – 10	Full Length GATE Mock Test-10	09-01-2020
CE-63	Mock – 11	Full Length GATE Mock Test-11	19-01-2020
CE-64	Mock – 12	Full Length GATE Mock Test-12	26-01-2020

Free Practice Tests of GATE-2019 Online Test Series

Topic wise Tests

Each test carries 25 marks and 45 minutes duration

Test No	Topic code	Topic	Date of Activation
CE-P01	GEM-1 (Engineering Mathematics)	Linear Algebra, Calculus, Ordinary Differential Equation & Partial Differential Equation	02-05-2019
CE-P02	GEM-2 (Engineering Mathematics)	Numerical Methods, Probability and Statistics, Laplace transform & Fourier series	
CE-P03	GMC-1 (Engineering Mechanics)	System of forces, free-body diagrams, equilibrium equations; Internal forces in structures; Friction and its applications; Kinematics of point mass and rigid body; Centre of mass; Euler's equations of motion; Impulse-momentum; Energy methods; Principles of virtual work.	
CE-P04	GGT - 1 (Geotechnical Engineering)	Origin of soils, soil structure and fabric; Three-phase system and phase relationships, index properties; Unified and Indian standard soil classification system; Permeability - one dimensional flow, Darcy's law; Seepage through soils - two-dimensional flow, flow nets, uplift pressure, piping; Principle of effective stress, capillarity, seepage force and quicksand condition; Compaction in laboratory and field conditions; Onedimensional consolidation, time rate of consolidation; Mohr's circle, stress paths, effective and total shear strength parameters, characteristics of clays and sand.	
CE-P05	GGT - 2 (Geotechnical Engineering)	Foundation Engineering: Sub-surface investigations - scope, 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, method of slices and Bishop's method; Stress distribution in soils - Boussinesq's and Westergaard's theories, 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 - types of piles, dynamic and static formulae, load capacity of piles in sands and clays, pile load test, negative skin friction.	
CE-P06	GSA - 1 (Structural Analysis)	Statically determinate and indeterminate structures by force/ energy methods; Method of superposition; Analysis of trusses, Arches, cables.	
CE-P07	GSA - 2 (Structural Analysis)	Analysis of Beams, and frames; Displacement methods: Slope deflection and moment distribution methods; Influence lines; Stiffness and flexibility methods of structural analysis.	
CE-P08	GCS - 1 (Concrete Structures) & GSS - 1 (Steel Structures)	Working stress, Limit state and Ultimate load design concepts; Design of beams; Shear; Bond and development length. Riveted, bolted, Welded and Eccentric Connections, Tension & Compression Members, Column Bases & Column Splices.	
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CE-P13	GFM – 2 (Fluid Mechanics)	Dimensional analysis and hydraulic similitude; Kinematics of flow, velocity triangles; Basics of hydraulic machines, specific speed of pumps and turbines; Channel Hydraulics - Energy-depth relationships, specific energy, critical flow, slope profile, hydraulic jump, uniform flow and gradually varied flow.	
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CE-P18	GTE – 1 (Transportation Engineering) & GGE–1 (Geomatics Engineering)	Highway alignment and engineering surveys; Geometric design of highways - cross-sectional elements, sight distances, horizontal and vertical alignments; Highway materials - desirable properties and quality control tests; Design of bituminous paving mixes. Geometric design of railway track; Airport runway length, taxiway and exit taxiway design. Errors and their adjustment; Maps - scale, coordinate system; Distance and angle measurement - Levelling and trigonometric levelling; Traversing survey; Contours; Areas and volumes.	
CE-P19	GTE–2 (Transportation Engineering) & GGE –2 (Geomatics Engineering)	Design factors for flexible and rigid pavements; Design of flexible pavement using IRC: 37-2012; Design of rigid pavements using IRC: 58-2011; Distresses in concrete pavements. Traffic Engineering: Traffic studies on flow, speed, travel time - delay and O-D study, PCU, peak hour factor, parking study, accident study and analysis, statistical analysis of traffic data; Microscopic and macroscopic parameters of traffic flow, fundamental relationships; Control devices, signal design by Webster's method; Types of intersections and channelization . Highway capacity and level of service of rural highways and urban roads. Triangulation survey; Total station; Horizontal and vertical curves. Photogrammetry - scale, flying height; Remote sensing - basics, platform and sensors, visual image interpretation; Basics of Geographical information system (GIS) and Geographical Positioning system (GPS).	
CE-P20	GCM (Construction Materials & Management)	Construction materials: Construction Materials: Structural steel - composition, material properties and behaviour; Concrete - constituents, mix design, short-term and long-term properties; Bricks and mortar; Timber; Bitumen. Construction Management: Types of projects, Tendering & Contracts, Rate analysis, standard specifications, Cost Estimation, Project planning and Network Analysis – PERT and CPM.	
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CE-P25	GEE	Environmental engineering	
CE-P26	GSA	Structural Analysis	
CE-P27	GCS & GSS	Concrete Structures & Steel Structures	
CE-P28	GGT	Geotechnical Engineering	
CE-P29	GHI	Hydrology & Irrigation	
CE-P30	GFM	Fluid Mechanics	
CE-P31	GTE	Transportation Engineering	
CE-P32	GGE	Geomatics Engineering	
CE-P33	GCM	Construction Materials & Management	
CE-P34	GGA	General Aptitude	

Multi-Subject wise Grand Tests

Each test carries 50 marks and 90 minutes duration

Test No	Subject Code	Name of the Subject	Date of Activation
CE-P35	GMC, GSM & GSA	Engineering Mechanics, Solid Mechanics & Structural Analysis	02-05-2019
CE-P36	GGT & GFM	Geotechnical Engineering & Fluid Mechanics	
CE-P37	GCM, GCS & GSS	Construction Materials & Management, Concrete Structures & Steel Structures	
CE-P38	GHI & GEE	Hydrology & Irrigation & Environmental engineering	
CE-P39	GTE & GGE	Transportation Engineering & Geomatics Engineering	
CE-P40	GEM & GGA	Engineering Mathematics & General Aptitude	

Full Length Mock GATE (As per GATE pattern)

Test No	Mock Codes	Name of the Subject	Date of Activation
CE-P41	Mock – 1	Full Length GATE Mock Test-1	25-05-2019
CE-P42	Mock – 2	Full Length GATE Mock Test-2	
CE-P43	Mock – 3	Full Length GATE Mock Test-3	
CE-P44	Mock – 4	Full Length GATE Mock Test-4	
CE-P45	Mock – 5	Full Length GATE Mock Test-5	
CE-P46	Mock – 6	Full Length GATE Mock Test-6	
CE-P47	Mock – 7	Full Length GATE Mock Test-7	
CE-P48	Mock – 8	Full Length GATE Mock Test-8	
CE-P49	Mock – 9	Full Length GATE Mock Test-9	
CE-P50	Mock – 10	Full Length GATE Mock Test-10	
CE-P51	Mock – 11	Full Length GATE Mock Test-11	
CE-P52	Mock – 12	Full Length GATE Mock Test-12	