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# GATE 2019 Online Test Series

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**15<sup>th</sup> Mar, 2018**

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**54**  
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Quality Tests

**1782 Questions**

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**GATE 2019 Test Series**

**54 Tests**

**+**

**GATE 2018 Test Series**

**36 Tests**

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Note : Solo package of GATE 2018 Test Series not available

# Test Structure

## GATE 2019

# 54 Tests

Test Type	Syllabus	No. of Qs.	Marks	Time
24 Topicwise Tests	Part Syllabus	17	25	45 Minutes
12 Single Subjectwise Tests	Part Syllabus	33	50	90 Minutes
6 Multi Subject Tests	Full Syllabus	33	50	90 Minutes
4 Basic Level Tests	Full Syllabus	65	100	180 Minutes
4 Advance Level Tests	Full Syllabus	65	100	180 Minutes
4 Mock Level Tests	Full Syllabus	65	100	180 Minutes

# Civil Engineering

## Schedule of GATE 2019

### Online Test Series

#### Topicwise Tests

Test No.	Test Syllabus	No. of Ques.	Marks	Time	Activation Date
1	<b>Solid Mechanics-1:</b> Bending moment and shear force in statically determinate beams; Simple stress and strain relationships; Theories of failures.	17	25	45 min	15-03-2018
2	<b>Solid Mechanics-2:</b> Simple bending theory, flexural and shear stresses, shear centre; Uniform torsion, buckling of column, combined and direct bending stresses.	17	25	45 min	
3	<b>Concrete Structures-1:</b> Working stress, Limit state and Ultimate load design concepts; Design of beams, slabs.	17	25	45 min	
4	<b>Concrete Structures-2:</b> Columns; Bond and development length; Prestressed concrete; Analysis of beam sections at transfer and service loads.	17	25	45 min	
5	<b>Environmental Engg.-1:</b> Water : 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. <i>Air Pollution:</i> Types of pollutants, their sources and impacts, air pollution meteorology, air pollution control, air quality standards and limits. <i>Noise Pollution:</i> Impacts of noise, permissible limits of noise pollution, measurement of noise and control of noise pollution.	17	25	45 min	
6	<b>Environmental Engg.-2:</b> Waste water : 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. <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).	17	25	45 min	
7	<b>Fluid Mechanics and Hydraulics-1:</b> Properties of fluids, fluid statics; Continuity, momentum, energy and corresponding equations; Potential flow, applications of momentum and energy equations; Laminar and turbulent flow; Flow in pipes, pipe networks; Concept of boundary layer and its growth. Dimensional analysis and hydraulic similitude.	17	25	45 min	
8	<b>Fluid Mechanics and Hydraulics-2:</b> Forces on immersed bodies; Flow measurement in channels and pipes; 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.	17	25	45 min	
9	<b>Engineering Mathematics-1:</b> Linear Algebra, Calculus, Probability and Statistics.	17	25	45 min	
10	<b>Engineering Mathematics-2:</b> Ordinary Differential Equations, Partial Differential Equations, Numerical Methods.	17	25	45 min	
11	<b>General Aptitude-1:</b> Numerical Ability: Numerical computation, numerical estimation, numerical reasoning and data interpretation.	17	25	45 min	
12	<b>General Aptitude-2:</b> Verbal Ability: English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction.	17	25	45 min	
13	<b>Transportation Engg. and Geomatics Engg.-1:</b> Highway alignment and engineering surveys; Geometric design of highways - cross-sectional elements, sight distances, horizontal and vertical alignments; Geometric design of railway track; Airport runway length, taxiway and exit taxiway design. <i>Photogrammetry</i> - scale, flying height; Remote sensing - basics, platform and sensors, visual image interpretation; Basics of Geographical information system (GIS) and Geographical Positioning system (GPS).	17	25	45 min	15-04-2018
14	<b>Transportation Engg. and Geomatics Engg.-2:</b> <i>Highway Pavements:</i> Highway materials-desirable properties and quality control tests; Design of bituminous paving mixes; 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. <i>Traffic Engineering:</i> 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. <i>Principles of surveying;</i> 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.	17	25	45 min	
15	<b>Structural Analysis-1:</b> Statically determinate and indeterminate structures by force/ energy methods; Method of superposition; Analysis of trusses, arches, beams, cables and frames.	17	25	45 min	
16	<b>Structural Analysis-2:</b> Displacement methods: Slope deflection and moment distribution methods; Influence lines; Stiffness and flexibility methods of structural analysis.	17	25	45 min	
17	<b>Geotechnical Engg.-1:</b> 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; One-dimensional consolidation, time rate of consolidation.	17	25	45 min	
18	<b>Geotechnical Engg.-2:</b> Mohr's circle, stress paths, effective and total shear strength parameters, characteristics of clays and sand. <i>Foundation Engineering:</i> 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.	17	25	45 min	
19	<b>Geotechnical Engg.-3:</b> 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.	17	25	45 min	
20	<b>Steel Structures-1:</b> Working stress and Limit state design concepts; Design of tension and compression members, Plastic analysis of beams and frames.	17	25	45 min	
21	<b>Steel Structures-2:</b> Plate girders and trusses; beams and beam- columns, column bases; Connections - simple and eccentric, beam-column connections.	17	25	45 min	
22	<b>Hydrology :</b> 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.	17	25	45 min	
23	<b>Irrigation:</b> 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.	17	25	45 min	
24	<b>Engineering Mechanics, Construction Materials and Management:</b> 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. <i>Construction Materials:</i> Structural steel - composition, material properties and behaviour; Concrete - constituents, mix design, short-term and long-term properties; Bricks and mortar; Timber; Bitumen. <i>Construction Management:</i> Types of construction projects; Tendering and construction contracts; Rate analysis and standard specifications; Cost estimation; Project planning and network analysis - PERT and CPM.	17	25	45 min	

**Single Subject Tests**

Test No.	Test Syllabus	No. of Ques.	Marks	Duration	Activation Date
25	Solid Mechanics	33	50	90 min	15-05-2018
26	Concrete Structures	33	50	90 min	
27	Environmental Engineering	33	50	90 min	
28	Engineering Mathematics	33	50	90 min	
29	Fluid Mechanics and Hydraulics	33	50	90 min	
30	General Aptitude	33	50	90 min	
31	Transportation Engineering and Geomatics Engineering	33	50	90 min	15-06-2018
32	Structural Analysis	33	50	90 min	
33	Geotechnical Engineering	33	50	90 min	
34	Steel Structures	33	50	90 min	
35	Hydrology and Irrigation	33	50	90 min	
36	Engineering Mechanics, Construction Materials and Management	33	50	90 min	

**Multiple Subject Tests**

37	Solid Mechanics + Structural Analysis + Engineering Mechanics	33	50	90 min	15-07-2018
38	Geotechnical Engineering + Steel Structures	33	50	90 min	
39	Fluid Mechanics and Hydraulics + Concrete Structures + Construction Materials and Management	33	50	90 min	
40	Environmental Engineering + Hydrology + Irrigation	33	50	90 min	
41	Transportation Engineering + Geomatics Engineering	33	50	90 min	
42	Engineering Mathematics + General Aptitude	33	50	90 min	

**Full Syllabus Tests**

43	Full Syllabus Test-1 (Basic Level)	65	100	180 min	15-08-2018
44	Full Syllabus Test-2 (Basic Level)	65	100	180 min	
45	Full Syllabus Test-3 (Basic Level)	65	100	180 min	
46	Full Syllabus Test-4 (Basic Level)	65	100	180 min	
47	Full Syllabus Test-5 (Advance Level)	65	100	180 min	15-09-2018
48	Full Syllabus Test-6 (Advance Level)	65	100	180 min	
49	Full Syllabus Test-7 (Advance Level)	65	100	180 min	
50	Full Syllabus Test-8 (Advance Level)	65	100	180 min	

**Candidate has to upload GATE-2019 Admit Card to access below mentioned tests**

51	GATE Mock Test 1	65	100	180 min
52	GATE Mock Test 2	65	100	180 min
53	GATE Mock Test 3	65	100	180 min
54	GATE Mock Test 4	65	100	180 min

# Mechanical Engineering

## Schedule of GATE 2019

### Online Test Series

#### Topicwise Tests

Test No.	Test Syllabus	No. of Ques.	Marks	Time	Activation Date
1	<b>Strength of Materials-1:</b> Stress and strain, elastic constants, Poisson's ratio; Mohr's circle for plane stress and plane strain; thin cylinders; shear force and bending moment diagrams; bending and shear stresses; deflection of beams.	17	25	45 min	15-03-2018
2	<b>Strength of Materials-2:</b> torsion of circular shafts; Euler's theory of columns; energy methods; thermal stresses; strain gauges and rosettes; testing of materials with universal testing machine; testing of hardness and impact strength.	17	25	45 min	
3	<b>Thermodynamics-1:</b> Thermodynamic systems and processes; properties of pure substances, behaviour of ideal and real gases; zeroth and first laws of thermodynamics, calculation of work and heat in various processes.	17	25	45 min	
4	<b>Thermodynamics-2:</b> second law of thermodynamics; thermodynamic property charts and tables, availability and irreversibility; thermodynamic relations.	17	25	45 min	
5	<b>Fluid Mechanics &amp; Hydraulic Machines-1:</b> Fluid properties; fluid statics, manometry, buoyancy, forces on submerged bodies, stability of floating bodies; control-volume analysis of mass, momentum and energy; fluid acceleration; differential equations of continuity and momentum.	17	25	45 min	
6	<b>Fluid Mechanics &amp; Hydraulic Machines-2:</b> Bernoulli's equation; dimensional analysis; viscous flow of incompressible fluids, boundary layer, elementary turbulent flow, flow through pipes, head losses in pipes, bends and fittings; Impulse and reaction principles, velocity diagrams, Pelton-wheel, Francis and Kaplan turbines.	17	25	45 min	
7	<b>Theory of Machines-1:</b> Displacement, velocity and acceleration analysis of plane mechanisms; dynamic analysis of linkages; cams; Free and forced vibration of single degree of freedom systems.	17	25	45 min	
8	<b>Theory of Machines-2:</b> Gears and gear trains; flywheels and governors; balancing of reciprocating and rotating masses; gyroscope; effect of damping; vibration isolation; resonance; critical speeds of shafts.	17	25	45 min	
9	<b>Engineering mathematics-1:</b> Linear Algebra, Calculus, Vector Analysis, Probability and Statistics.	17	25	45 min	
10	<b>Engineering mathematics-2:</b> Differential Equations, Complex Analysis, Numerical Methods.	17	25	45 min	
11	<b>General Aptitude-1:</b> Numerical Ability: Numerical computation, numerical estimation, numerical reasoning and data interpretation.	17	25	45 min	
12	<b>General Aptitude-2:</b> Verbal Ability: English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction.	17	25	45 min	
13	<b>Heat Transfer-1:</b> Modes of heat transfer; one dimensional heat conduction, resistance concept and electrical analogy, heat transfer through fins; unsteady heat conduction, lumped parameter system, Heisler's charts; thermal boundary layer, dimensionless parameters in free and forced convective heat transfer, heat transfer correlations for flow over flat plates and through pipes, effect of turbulence.	17	25	45 min	15-04-2018
14	<b>Heat Transfer-2:</b> Heat exchanger performance, LMTD and NTU methods; radiative heat transfer, Stefan-Boltzmann law, Wien's displacement law, black and grey surfaces, view factors, radiation network analysis.	17	25	45 min	
15	<b>Engineering Mechanics and Engineering Materials-1:</b> Free-body diagrams and equilibrium; trusses and frames; virtual work; Structure and properties of engineering materials, phase diagrams	17	25	45 min	
16	<b>Engineering Mechanics and Engineering Materials-2:</b> Kinematics and dynamics of particles and of rigid bodies in plane motion; impulse and momentum (linear and angular) and energy formulations, collisions; heat treatment, stress-strain diagrams for engineering materials.	17	25	45 min	
17	<b>Manufacturing Engineering-1:</b> Different types of castings, design of patterns, moulds and cores; solidification and cooling; riser and gating design. Plastic deformation and yield criteria; fundamentals of hot and cold working processes; load estimation for bulk (forging, rolling, extrusion, drawing) and sheet (shearing, deep drawing, bending) metal forming processes; principles of powder metallurgy. Principles of welding, brazing, soldering and adhesive bonding. Basic concepts of CAD/CAM and their integration tools.	17	25	45 min	
18	<b>Manufacturing Engineering-2:</b> Mechanics of machining; basic machine tools; single and multi-point cutting tools, tool geometry and materials, tool life and wear; economics of machining; principles of non-traditional machining processes; principles of work holding, design of jigs and fixtures. Limits, fits and tolerances; linear and angular measurements; comparators; gauge design; interferometry; form and finish measurement; alignment and testing methods; tolerance analysis in manufacturing and assembly.	17	25	45 min	
19	<b>I.C Engine &amp; Power Plant:</b> Air and gas compressors; vapour and gas power cycles, concepts of regeneration and reheat. Air-standard Otto, Diesel and dual cycles.	17	25	45 min	
20	<b>Refrigeration &amp; Air-Conditioning :</b> Vapour and gas refrigeration and heat pump cycles; properties of moist air, psychrometric chart, basic psychrometric processes.	17	25	45 min	
21	<b>Industrial Engineering-1:</b> Forecasting models, aggregate production planning, scheduling, materials requirement planning.	17	25	45 min	
22	<b>Industrial Engineering-2:</b> Deterministic models; safety stock inventory control systems; linear programming, simplex method, transportation, assignment, network flow models, simple queuing models, PERT and CPM.	17	25	45 min	
23	<b>Machine Design-1:</b> Design for static and dynamic loading; failure theories; fatigue strength and the S-N diagram.	17	25	45 min	
24	<b>Machine Design-2:</b> Principles of the design of machine elements such as bolted, riveted and welded joints; shafts, gears, rolling and sliding contact bearings, brakes and clutches, springs.	17	25	45 min	

**Single Subject Tests**

Test No.	Test Syllabus	No. of Ques.	Marks	Duration	Activation Date
25	Strength of Materials	33	50	90 min	15-05-2018
26	Thermodynamics	33	50	90 min	
27	Fluid Mechanics & Hydraulic Machines	33	50	90 min	
28	Theory of Machines	33	50	90 min	
29	Engineering Mathematics	33	50	90 min	
30	General Aptitude	33	50	90 min	
31	Heat Transfer	33	50	90 min	15-06-2018
32	Engineering Mechanics and Engineering Materials	33	50	90 min	
33	Manufacturing Engineering	33	50	90 min	
34	I.C Engine, Power Plant, Refrigeration & Air-Conditioning	33	50	90 min	
35	Industrial Engineering	33	50	90 min	
36	Machine Design	33	50	90 min	

**Multiple Subject Tests**

37	Engineering Mechanics and Engineering Materials + Theory of Machines	33	50	90 min	15-07-2018
38	Strength of Materials + Machine Design	33	50	90 min	
39	Thermodynamics + Fluid Mechanics & Hydraulic Machines	33	50	90 min	
40	Manufacturing Engineering + Heat Transfer	33	50	90 min	
41	Industrial Engineering + I.C Engine, Power Plant, Refrigeration & Air-Conditioning	33	50	90 min	
42	Engineering Mathematics + General Aptitude	33	50	90 min	

**Full Syllabus Tests**

43	Full Syllabus Test-1 (Basic Level)	65	100	180 min	15-08-2018
44	Full Syllabus Test-2 (Basic Level)	65	100	180 min	
45	Full Syllabus Test-3 (Basic Level)	65	100	180 min	
46	Full Syllabus Test-4 (Basic Level)	65	100	180 min	
47	Full Syllabus Test-5 (Advance Level)	65	100	180 min	15-09-2018
48	Full Syllabus Test-6 (Advance Level)	65	100	180 min	
49	Full Syllabus Test-7 (Advance Level)	65	100	180 min	
50	Full Syllabus Test-8 (Advance Level)	65	100	180 min	

**Candidate has to upload GATE-2019 Admit Card to access below mentioned tests**

51	GATE Mock Test 1	65	100	180 min	
52	GATE Mock Test 2	65	100	180 min	
53	GATE Mock Test 3	65	100	180 min	
54	GATE Mock Test 4	65	100	180 min	



# Electrical Engineering

## Schedule of GATE 2019

### Online Test Series

Topicwise Tests					
Test No.	Test Syllabus	No. of Ques.	Marks	Time	Activation Date
1	<b>Electric Circuits-1:</b> Network graph, KCL, KVL, Node and Mesh analysis, Ideal current and voltage sources; Sinusoidal steady-state analysis, Power and power factor in ac circuits; Thevenin's theorem, Norton's theorem, Superposition theorem, Maximum power transfer theorem.	17	25	45 min	15-03-2018
2	<b>Electric Circuits-2:</b> Transient response of dc and ac networks, Resonance, Passive filters, Two-port networks.	17	25	45 min	
3	<b>Control Systems-1:</b> Mathematical modeling and representation of systems, Feedback principle, transfer function, Block diagrams and Signal flow graphs, Transient and Steady-state analysis of linear time invariant systems, Routh-Hurwitz, Root loci, Stability analysis.	17	25	45 min	
4	<b>Control Systems-2:</b> Frequency domain analysis, Nyquist criteria, Bode plots, Lag, Lead and Lead-Lag compensators; P, PI and PID controllers; State space model, State transition matrix.	17	25	45 min	
5	<b>Electrical Machines-1:</b> Electromechanical energy conversion principles, DC machines: separately excited, series and shunt, motoring and generating mode of operation and their characteristics, starting and speed control of dc motors; Synchronous machines: cylindrical and salient pole machines, performance, regulation and parallel operation of generators, starting of synchronous motor, characteristics; Types of losses and efficiency calculations of electric machines.	17	25	45 min	
6	<b>Electrical Machines-2:</b> Single phase transformer: equivalent circuit, phasor diagram, open circuit and short circuit tests, regulation and efficiency; Three phase transformers: connections, parallel operation; Auto-transformer, Three phase induction motors: principle of operation, types, performance, torque-speed characteristics, no-load and blocked rotor tests, equivalent circuit, starting and speed control; Operating principle of single phase induction motors.	17	25	45 min	
7	<b>Power Systems-1:</b> Power generation concepts, ac and dc transmission concepts, Models and performance of transmission lines and cables, Series and shunt compensation, Electric field distribution and insulators, Distribution systems, Voltage and Frequency control, Power factor correction, Principles of over-current, differential and distance protection; Circuit breakers.	17	25	45 min	
8	<b>Power Systems-2:</b> Per-unit quantities, Bus admittance matrix, Gauss-Seidel and Newton-Raphson load flow methods, Symmetrical components, Symmetrical and unsymmetrical fault analysis, System stability concepts, Equal area criterion.	17	25	45 min	
9	<b>Engineering mathematics-1:</b> Linear Algebra, Calculus, Probability and Statistics.	17	25	45 min	
10	<b>Engineering mathematics-2:</b> Differential Equations, Complex Analysis, Numerical Methods, Transform Theory.	17	25	45 min	
11	<b>General Aptitude-1:</b> Numerical Ability: Numerical computation, numerical estimation, numerical reasoning and data interpretation.	17	25	45 min	
12	<b>General Aptitude-2:</b> Verbal Ability: English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction.	17	25	45 min	
13	<b>Signals &amp; Systems-1:</b> Representation of continuous and discrete-time signals, Shifting and scaling operations, Linear Time Invariant and Causal systems, Fourier series representation of continuous periodic signals.	17	25	45 min	15-04-2018
14	<b>Signals &amp; Systems-2:</b> Sampling theorem, Applications of Fourier Transform, Laplace Transform and z-Transform.	17	25	45 min	
15	<b>Power Electronics-1:</b> Characteristics of semiconductor power devices: Diode, Thyristor, Triac, GTO, MOSFET, IGBT; Single and three phase configuration of uncontrolled rectifiers, Line commutated thyristor based converters, Bidirectional ac to dc voltage source converters, Issues of line current harmonics, Power factor, Distortion factor of ac to dc converters.	17	25	45 min	
16	<b>Power Electronics-2:</b> DC to DC conversion: Buck, Boost and Buck-Boost converters; Single phase and three phase inverters, Sinusoidal pulse width modulation.	17	25	45 min	
17	<b>Electrical &amp; Electronics Measurements-1:</b> Measurement of voltage, current, power, energy and power factor; Error analysis.	17	25	45 min	
18	<b>Electrical &amp; Electronics Measurements-2:</b> Bridges and Potentiometers, Instrument transformers, Digital voltmeters and multimeters, Phase, Time and Frequency measurement; Oscilloscopes.	17	25	45 min	
19	<b>Digital Electronics &amp; Microprocessors-1:</b> Combinational and Sequential logic circuits, Multiplexer, Demultiplexer.	17	25	45 min	
20	<b>Digital Electronics &amp; Microprocessors-2:</b> Sample and hold circuits, A/D and D/A converters, 8085 Microprocessor: Architecture, Programming and Interfacing.	17	25	45 min	
21	<b>Analog Electronics-1:</b> Characteristics of diodes, BJT, MOSFET; Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: Biasing, Equivalent circuit and Frequency response.	17	25	45 min	
22	<b>Analog Electronics-2:</b> Oscillators and Feedback amplifiers; Operational amplifiers: Characteristics and applications; Simple active filters, VCOs and Timers, Schmitt trigger.	17	25	45 min	
23	<b>Electromagnetic Fields-1:</b> Coulomb's Law, Electric Field Intensity, Electric Flux Density, Gauss's Law, Divergence, Electric field and potential due to point, line, plane and spherical charge distributions, Effect of dielectric medium, Capacitance of simple configurations.	17	25	45 min	
24	<b>Electromagnetic Fields-2:</b> Biot-Savart's law, Ampere's law, Curl, Faraday's law, Lorentz force, Inductance, Magnetomotive force, Reluctance, Magnetic circuits, Self and Mutual inductance of simple configurations.	17	25	45 min	

**Single Subject Tests**

Test No.	Test Syllabus	No. of Ques.	Marks	Duration	Activation Date
25	Electric Circuits	33	50	90 min	<b>15-05-2018</b>
26	Control Systems	33	50	90 min	
27	Electrical Machines	33	50	90 min	
28	Power Systems	33	50	90 min	
29	Engineering Mathematics	33	50	90 min	
30	General Aptitude	33	50	90 min	
31	Signals & Systems	33	50	90 min	<b>15-06-2018</b>
32	Power Electronics	33	50	90 min	
33	Electrical & Electronics Measurements	33	50	90 min	
34	Digital Electronics & Microprocessors	33	50	90 min	
35	Analog Electronics	33	50	90 min	
36	Electromagnetic Fields	33	50	90 min	

**Multiple Subject Tests**

37	Electric Circuits + Control Systems	33	50	90 min	<b>15-07-2018</b>
38	Electrical Machines + Electrical & Electronics Measurements	33	50	90 min	
39	Analog Electronics + Power Electronics	33	50	90 min	
40	Signals & Systems + Electromagnetic Fields	33	50	90 min	
41	Power Electronics + Digital Electronics & Microprocessors	33	50	90 min	
42	Engineering Mathematics + General Aptitude	33	50	90 min	

**Full Syllabus Tests**

43	Full Syllabus Test-1 (Basic Level)	65	100	180 min	<b>15-08-2018</b>
44	Full Syllabus Test-2 (Basic Level)	65	100	180 min	
45	Full Syllabus Test-3 (Basic Level)	65	100	180 min	
46	Full Syllabus Test-4 (Basic Level)	65	100	180 min	
47	Full Syllabus Test-5 (Advance Level)	65	100	180 min	<b>15-09-2018</b>
48	Full Syllabus Test-6 (Advance Level)	65	100	180 min	
49	Full Syllabus Test-7 (Advance Level)	65	100	180 min	
50	Full Syllabus Test-8 (Advance Level)	65	100	180 min	

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51	GATE Mock Test 1	65	100	180 min	
52	GATE Mock Test 2	65	100	180 min	
53	GATE Mock Test 3	65	100	180 min	
54	GATE Mock Test 4	65	100	180 min	

# Computer Science & IT

## Schedule of GATE 2019

### Online Test Series

Topicwise Tests					
Test No.	Test Syllabus	No. of Ques.	Marks	Time	Activation Date
1	<b>Theory of Computation-1:</b> Regular expressions and finite automata, Context-free grammars and push-down automata	17	25	45 min	15-03-2018
2	<b>Theory of Computation-2:</b> Regular and context-free languages, Grammar, pumping lemma, Turing machines and undecidability.	17	25	45 min	
3	<b>Algorithms -1:</b> Sorting, Asymptotic worst case time and space complexity. Algorithm design techniques: greedy and divide-and-conquer and Searching.	17	25	45 min	
4	<b>Algorithms-2:</b> Hashing, Graph search, minimum spanning trees, shortest paths and dynamic programming.	17	25	45 min	
5	<b>Computer Organization and Architecture-1:</b> Instruction pipelining, Machine instructions and addressing modes and control unit.	17	25	45 min	
6	<b>Computer Organization and Architecture-2:</b> ALU, data-path, Memory hierarchy: cache, main memory, secondary storage and I/O interface (interrupt and DMA mode).	17	25	45 min	
7	<b>Databases-1:</b> Er-model. Relational model: relational algebra normalization and indexing (e.g., B and B+ trees).	17	25	45 min	
8	<b>Databases-2:</b> Tuple calculus, SQL, Integrity constraints, File organization, Transactions and concurrency control.	17	25	45 min	
9	<b>Engineering Mathematics-1:</b> Matrices, system of linear equations, eigenvalues and eigenvectors, Random variables. Uniform, normal, exponential, poisson and binomial distributions. Mean, median, mode and standard deviation.	17	25	45 min	
10	<b>Engineering Mathematics-2:</b> Limits, continuity and differentiability. Maxima and minima. Mean value theorem. Integration, determinants and LU decomposition, Conditional probability and Bayes theorem.	17	25	45 min	
11	<b>General Aptitude-1:</b> Numerical Ability: Numerical computation, numerical estimation, numerical reasoning and data interpretation.	17	25	45 min	
12	<b>General Aptitude-2:</b> Verbal Ability: English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction.	17	25	45 min	
13	<b>Operating System-1:</b> Memory management, virtual memory and Deadlock and File systems.	17	25	45 min	15-04-2018
14	<b>Operating System-2:</b> Processes, threads, inter-process communication, concurrency, synchronization and CPU scheduling.	17	25	45 min	
15	<b>Programming and Data Structures-1:</b> Programming in C, Arrays, stacks and queues, Recursion.	17	25	45 min	
16	<b>Programming and Data Structures-2:</b> Linked lists, trees, binary search trees, binary heaps and graphs	17	25	45 min	
17	<b>Computer Networks-1:</b> Concept of layering, LAN technologies (Ethernet), Flow and error control techniques, switching, Basics of Wi-Fi, Network security, Authentication, basics of public key and private key cryptography, digital signatures and certificates	17	25	45 min	
18	<b>Computer Networks-2:</b> IPv4/IPv6, routers and routing algorithms (distance vector, link state). TCP/UDP and sockets, congestion control, Application layer protocols (DNS, SMTP, POP, FTP, HTTP) and firewalls	17	25	45 min	
19	<b>Digital Logic-1:</b> Boolean algebra, Combinational and Minimization	17	25	45 min	
20	<b>Digital Logic-2:</b> Sequential circuits, Number representations and computer arithmetic (fixed and floating point).	17	25	45 min	
21	<b>Discrete Mathematics-1:</b> Propositional and first order logic. Sets, relations, functions and counting	17	25	45 min	
22	<b>Discrete Mathematics-2:</b> Partial orders and lattices, groups, Graphs: connectivity, matching, coloring. Recurrence relations and generating functions.	17	25	45 min	
23	<b>Compiler Design-1:</b> Lexical analysis, syntax-directed translation and Intermediate code generation.	17	25	45 min	
24	<b>Compiler Design-2:</b> Parsing, Runtime environments and Intermediate code generation.	17	25	45 min	

**Single Subject Tests**

Test No.	Test Syllabus	No. of Ques.	Marks	Duration	Activation Date
25	Theory of Computation	33	50	90 min	15-05-2018
26	Algorithms	33	50	90 min	
27	Computer Organization and Architecture	33	50	90 min	
28	Operating System	33	50	90 min	
29	Engineering Mathematics	33	50	90 min	
30	General Aptitude	33	50	90 min	
31	Database	33	50	90 min	15-06-2018
32	Programming and Data Structures	33	50	90 min	
33	Computer Networks	33	50	90 min	
34	Digital Logic	33	50	90 min	
35	Compiler Design	33	50	90 min	
36	Discrete Mathematics	33	50	90 min	

**Multiple Subject Tests**

37	Theory of Computation + Compiler Design	33	50	90 min	15-07-2018
38	Algorithms + Programming and Data Structures	33	50	90 min	
39	Computer Organization and Architecture + Operating System	33	50	90 min	
40	Digital Logic + Discrete Mathematics	33	50	90 min	
41	Computer Networks + Databases	33	50	90 min	
42	Engineering Mathematics + General Aptitude	33	50	90 min	

**Full Syllabus Tests**

43	Full Syllabus Test-1 (Basic Level)	65	100	180 min	15-08-2018
44	Full Syllabus Test-2 (Basic Level)	65	100	180 min	
45	Full Syllabus Test-3 (Basic Level)	65	100	180 min	
46	Full Syllabus Test-4 (Basic Level)	65	100	180 min	
47	Full Syllabus Test-5 (Advance Level)	65	100	180 min	15-09-2018
48	Full Syllabus Test-6 (Advance Level)	65	100	180 min	
49	Full Syllabus Test-7 (Advance Level)	65	100	180 min	
50	Full Syllabus Test-8 (Advance Level)	65	100	180 min	

**Candidate has to upload GATE-2019 Admit Card to access below mentioned tests**

51	GATE Mock Test 1	65	100	180 min	
52	GATE Mock Test 2	65	100	180 min	
53	GATE Mock Test 3	65	100	180 min	
54	GATE Mock Test 4	65	100	180 min	

# Instrumentation Engineering

## Schedule of GATE 2019

### Online Test Series

Topicwise Tests					
Test No.	Test Syllabus	No. of Ques.	Marks	Time	Activation Date
1	<b>Electrical Circuits-1:</b> Voltage and current sources: independent, dependent, ideal and practical; v-i relationships of resistor, inductor, mutual inductor and capacitor; Kirchoff's laws, mesh and nodal analysis, superposition, Thevenin, Norton, maximum power transfer and reciprocity theorems; Peak-, average- and rms values of ac quantities; apparent-active- and reactive powers; phasor analysis, impedance and admittance.	17	25	45 min	15-03-2018
2	<b>Electrical Circuits-2:</b> Electrical Circuits-2: Transient analysis of RLC circuits with dc excitation; series and parallel resonance, locus diagrams, realization of basic filters with R, L and C elements. One-port and two-port networks, driving point impedance and admittance, open-and short circuit parameters.	17	25	45 min	
3	<b>Control Systems-1:</b> Feedback principles, signal flow graphs, transient response, steady-state-errors, Routh criteria, root loci.	17	25	45 min	
4	<b>Control Systems-2:</b> Control Systems-2: Bode plot, phase and gain margins, Nyquist criteria, design of lead, Lag and Lead-lag compensators, state-space representation of systems; time-delay systems.	17	25	45 min	
5	<b>Process control:</b> Mechanical, hydraulic and pneumatic system components, synchro pair, servo and stepper motors, servo valves; on-off, P, P-I, P-I-D, cascade, feedforward, and ratio controllers.	17	25	45 min	
6	<b>Sensors and Industrial Instrumentation-1:</b> Resistive, capacitive, inductive, piezoelectric, Hall effect sensors and associated signal conditioning circuits; transducers for industrial instrumentation: displacement (linear and angular), velocity, acceleration, force, torque, vibration, shock.	17	25	45 min	
7	<b>Sensors and Industrial Instrumentation-2:</b> Pressure (including low pressure), flow (differential pressure, variable area, electromagnetic, ultrasonic, turbine and open channel flow meters) temperature (thermocouple, bolometer, RTD (3/4 wire), thermistor, pyrometer and semiconductor); liquid level, pH, conductivity and viscosity measurement.	17	25	45 min	
8	<b>Microprocessors:</b> 8-bit microprocessor and microcontroller: applications, memory and input-output interfacing; basics of data acquisition systems.	17	25	45 min	
9	<b>Engineering Mathematics-1:</b> Linear Algebra, calculus, Vector Analysis, Probability and statistics	17	25	45 min	
10	<b>Engineering Mathematics-2:</b> Differential Equations, Analysis of complex variables, Numerical Methods.	17	25	45 min	
11	<b>General Aptitude-1:</b> Numerical Ability: numerical computation, numerical estimation, numerical reasoning and data interpretation.	17	25	45 min	15-04-2018
12	<b>General Aptitude-2:</b> Verbal Ability: English grammar, sentence completion, verbal analogies, Word groups, instruction, critical reasoning and verbal deduction.	17	25	45 min	
13	<b>Analog Electronics-1:</b> Characteristics and applications of diode, Zener diode, BJT and MOSFET; small signal analysis of transistor circuits, feedback amplifiers.	17	25	45 min	
14	<b>Analog Electronics-2:</b> Characteristics of operational amplifiers; applications of opamps: difference amplifier, adder, subtractor, integrator, differentiator, instrumentation amplifier, precision rectifier, active filters and other circuits. Oscillators, signal generators, voltage controlled oscillators and phase locked loop.	17	25	45 min	
15	<b>Digital Electronics-1:</b> Basics of number systems, Combinational logic circuits, minimization of Boolean functions. IC families: TTL and CMOS. Arithmetic circuits, comparators, Schmitt trigger, multi-vibrators.	17	25	45 min	
16	<b>Digital Electronics-2:</b> Sequential circuits, flip-flops, shift registers, timers and counters; sample-and-hold circuit, multiplexer, analog-to digital (successive approximation, integrating, flash and sigma-delta) and digital-to analog converters (weighted R, R-2R ladder and current steering logic). Characteristics of ADC and DAC (resolution, quantization, significant bits, conversion/settling time).	17	25	45 min	
17	<b>Signals and Systems-1:</b> Periodic, aperiodic and impulse signals; Laplace, Fourier transform, transfer function, frequency response of first and second order linear time invariant systems, impulse response, convolution, correlation.	17	25	45 min	
18	<b>Signals and Systems-2:</b> z-transforms; Discrete time system: impulse response, frequency response, pulse transfer function; DFT and FFT; basics of IIR and FIR filters.	17	25	45 min	
19	<b>Communication-1:</b> Amplitude- and frequency modulation and demodulation; Shannon's sampling theorem.	17	25	45 min	
20	<b>Communication-2:</b> Pulse code modulation; frequency and time division multiplexing, amplitude-, phase-, frequency-, pulse shift keying for digital modulation.	17	25	45 min	
21	<b>Measurement-1:</b> SI units, systematic and random errors in measurement, expression of uncertainty- accuracy and precision index, propagation of errors. PMMC, MI and dynamometer type instruments; dc potentiometer, Measurement of voltage and current-, voltage and current scaling.	17	25	45 min	
22	<b>Measurement-2:</b> bridges for measurement of R, L and C, Q-meter. Measurement of Power in single and three phase circuits; ac and dc current probes; true rms meters Instrument transformers, timer/counter, time, phase and frequency measurements, digital voltmeter, digital multimeter, oscilloscope, shielding and grounding.	17	25	45 min	
23	<b>Optical instrumentation-1:</b> Basics of fibre optic sensing, interferometer: applications in metrology.	17	25	45 min	
24	<b>Optical Instrumentation-2:</b> Optical sources and detectors: LED, laser, photo-diode, light dependent resistor and their characteristics.	17	25	45 min	

**Single Subject Tests**

Test No.	Test Syllabus	No. of Ques.	Marks	Duration	Activation Date
25	Electrical Circuits	33	50	90 min	15-05-2018
26	Control Systems	33	50	90 min	
27	Sensors & Industrial Instrumentation	33	50	90 min	
28	Process Control	33	50	90 min	
29	Engineering Mathematics	33	50	90 min	
30	General Aptitude	33	50	90 min	
31	Signals & Systems	33	50	90 min	15-06-2018
32	Measurements	33	50	90 min	
33	Communications	33	50	90 min	
34	Digital Electronics & Microprocessors	33	50	90 min	
35	Analog Electronics	33	50	90 min	
36	Optical Instrumentation	33	50	90 min	

**Multiple Subject Tests**

37	Electrical Circuits + Control Systems	33	50	90 min	15-07-2018
38	Analog Electronics + Digital Electronics & Microprocessors	33	50	90 min	
39	Sensors & Industrial Instrumentation + Process Control	33	50	90 min	
40	Signals & Systems + Communications	33	50	90 min	
41	Measurements + Optical Instrumentation	33	50	90 min	
42	Engineering Mathematics + General Aptitude	33	50	90 min	

**Full Syllabus Tests**

43	Full Syllabus Test-1 (Basic Level)	65	100	180 min	15-08-2018
44	Full Syllabus Test-2 (Basic Level)	65	100	180 min	
45	Full Syllabus Test-3 (Basic Level)	65	100	180 min	
46	Full Syllabus Test-4 (Basic Level)	65	100	180 min	
47	Full Syllabus Test-5 (Advance Level)	65	100	180 min	15-09-2018
48	Full Syllabus Test-6 (Advance Level)	65	100	180 min	
49	Full Syllabus Test-7 (Advance Level)	65	100	180 min	
50	Full Syllabus Test-8 (Advance Level)	65	100	180 min	

**Candidate has to upload GATE-2019 Admit Card to access below mentioned tests**

51	GATE Mock Test 1	65	100	180 min	
52	GATE Mock Test 2	65	100	180 min	
53	GATE Mock Test 3	65	100	180 min	
54	GATE Mock Test 4	65	100	180 min	

# Production & Industrial Engineering

## Schedule of GATE 2019

### Online Test Series

#### Topicwise Tests

Test No.	Test Syllabus	No. of Ques.	Marks	Time	Activation Date
1	<b>TOM &amp; Machine Design-1:</b> Analysis of planar mechanisms, cams and followers; governors and fly wheels.	17	25	45 min	15-03-2018
2	<b>TOM &amp; Machine Design-2:</b> design of bolted, riveted and welded joints; interference/shrink fit joints; design of shafts, keys, spur gears, belt drives, brakes and clutches; pressure vessels.	17	25	45 min	
3	<b>Fluid Mechanics:</b> Fluid statics, Bernoulli's equation, flow through pipes, equations of continuity and momentum, capillary action, contact angle and wetting.	17	25	45 min	
4	<b>Thermodynamics:</b> Zeroth, first and second law of thermodynamics, thermodynamic system and processes, calculation of work and heat for systems and control volumes.	17	25	45 min	
5	<b>Applied Mechanics-1:</b> Equivalent force systems, free body concepts, equations of equilibrium; trusses.	17	25	45 min	
6	<b>Applied Mechanics-2:</b> Stress, strain and their relationship; failure theories, Mohr's circle(stress), deflection of beams, bending and shear stress, Euler's theory of columns.	17	25	45 min	
7	<b>Manufacturing Process- 1:</b> Manufacturing Process- 1: Types of casting processes & applications; patterns – types and materials; allowances; moulds and cores – materials, making, and testing; casting techniques of cast iron, steels and nonferrous metals and alloys; analysis of solidification and microstructure development; design of gating and riser; origin of defects. Principles of fusion welding processes (manual metal arc, MIG, TIG, plasma arc, submerged arc welding processes)–different heat sources (flame, arc, resistive, laser, electron beam), and heat transfer and associated losses, flux application, feeding of filler rod; Principles of solid state welding processes (friction, explosive welding, ultrasonic welding processes); Principles of adhesive, brazing and soldering processes; Origins of welding defects.	17	25	45 min	
8	<b>Manufacturing Process- 2:</b> Stress-strain relations in elastic and plastic deformation; concept of flow stress; hot and cold working – forging, rolling, extrusion and wire drawing; sheet metal working processes – blanking, bending and deep drawing; ideal work and slab analysis; origin of metal working defects.	17	25	45 min	
9	<b>Engineering mathematics-1:</b> Linear Algebra, Calculus, Vector Analysis, Probability and Statistics.	17	25	45 min	
10	<b>Engineering mathematics-2:</b> Differential Equations, Complex Analysis, Numerical Methods.	17	25	45 min	
11	<b>General Aptitude-1:</b> Numerical Ability: Numerical computation, numerical estimation, numerical reasoning and data interpretation.	17	25	45 min	
12	<b>General Aptitude-2:</b> Verbal Ability: English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction.	17	25	45 min	
13	<b>IC Engine:</b> Air standard cycles, Basics of internal combustion engines and steam turbines.	17	25	45 min	
14	<b>Heat Transfer:</b> Basic applications of conduction, convection and radiation.	17	25	45 min	
15	<b>Material Science-1:</b> Structure and properties correlation; engineering materials (metals, ceramics, polymers and composites) – properties and applications; stress-strain behavior of metals and alloys;	17	25	45 min	
16	<b>Material Science-2:</b> Iron-carbon phase diagram, heat treatment of metals and alloys, its influence on mechanical properties.	17	25	45 min	
17	<b>Manufacturing Process- 3:</b> Basic machine tools like centre lathe, milling machine, and drilling machine – construction and kinematics; machining processes - turning, taper turning, thread cutting, drilling, boring, milling, gear cutting, thread production, grinding; geometry of single point cutting tools, chip formation, cutting forces, specific cutting energy and power requirements, Merchant's analysis; basis of selection of machining parameters; tool materials, tool wear and tool life, economics of machining, thermal aspects of machining, cutting fluids, machinability; Principles, applications, effect of process parameters on MRR and product quality of non-traditional machining processes – USM, AJM, WJM, AWJM, EDM and Wire cut EDM, LBM, EBM, PAM, CHM, ECM.	17	25	45 min	
18	<b>Manufacturing Process- 4:</b> Powder processing: Production of metal/ceramic powders, compaction and sintering of metals and ceramic powders. Polymers and Composites: Plastic processing – injection, compression and blow molding, extrusion, calendaring and thermoforming; molding of composites.	17	25	45 min	
19	<b>Manufacturing Process- 5:</b> Jigs and fixtures – principles, applications, and design. Metrology and Inspection: Limits, fits, and tolerances, gauge design, interchangeability, selective assembly; linear, angular, and form measurements(straightness, squareness, flatness, roundness, and cylindricity) by mechanical and optical methods; inspection of screw threads and gears; surface finish measurement by contact and non-contact methods; tolerance analysis in manufacturing and assembly.	17	25	45 min	
20	<b>Manufacturing Process- 6:</b> Computer Integrated Manufacturing: Basic concepts of CAD – geometric modeling, CAM – CNC and robotics – configurations, drives and controls, Group Technology and its applications – CAPP, cellular manufacturing and FMS, Manufacturing Analysis: Sources of errors in manufacturing; process capability; tolerance analysis in manufacturing and assembly; process planning; parameter selection and comparison of production alternatives; time and cost analysis; manufacturing technologies – strategies and selection.	17	25	45 min	
21	<b>Industrial Engineering-1:</b> Product Design and Development; Work System Design; Facility Design.	17	25	45 min	
22	<b>Industrial Engineering-2:</b> Engineering Economy and Costing; Production planning and inventory control.	17	25	45 min	
23	<b>Operation Research-1:</b> Operation research, quality management reliability and maintenance.	17	25	45 min	
24	<b>Operation Research-2:</b> Management information system ,intellectual property system.	17	25	45 min	

**Single Subject Tests**

Test No.	Test Syllabus	No. of Ques.	Marks	Duration	Activation Date
25	TOM & Machine Design	33	50	90 min	15-05-2018
26	Fluid Mechanics	33	50	90 min	
27	Thermodynamics	33	50	90 min	
28	Applied Mechanics	33	50	90 min	
29	Engineering Mathematics	33	50	90 min	
30	General Aptitude	33	50	90 min	
31	Manufacturing Process-I (1+2+3)	33	50	90 min	15-06-2018
32	Manufacturing Process-II (4+5+6)	33	50	90 min	
33	IC Engine + Heat Transfer	33	50	90 min	
34	Material Science	33	50	90 min	
35	Industrial Engineering	33	50	90 min	
36	Operation Research	33	50	90 min	

**Multiple Subject Tests**

37	Engineering Materials + Applied Mechanics	33	50	90 min	15-07-2018
38	TOM + Machine Design	33	50	90 min	
39	Thermodynamics + Fluid Mechanics & Hydraulic Machines + HMT + IC Engine	33	50	90 min	
40	Manufacturing (1+2+3) + Industrial Engineering	33	50	90 min	
41	Manufacturing (4+5+6) + Operation Research	33	50	90 min	
42	Engineering Mathematics + General Aptitude	33	50	90 min	

**Full Syllabus Tests**

43	Full Syllabus Test-1 (Basic Level)	65	100	180 min	15-08-2018
44	Full Syllabus Test-2 (Basic Level)	65	100	180 min	
45	Full Syllabus Test-3 (Basic Level)	65	100	180 min	
46	Full Syllabus Test-4 (Basic Level)	65	100	180 min	
47	Full Syllabus Test-5 (Advance Level)	65	100	180 min	15-09-2018
48	Full Syllabus Test-6 (Advance Level)	65	100	180 min	
49	Full Syllabus Test-7 (Advance Level)	65	100	180 min	
50	Full Syllabus Test-8 (Advance Level)	65	100	180 min	

**Candidate has to upload GATE-2019 Admit Card to access below mentioned tests**

51	GATE Mock Test 1	65	100	180 min	
52	GATE Mock Test 2	65	100	180 min	
53	GATE Mock Test 3	65	100	180 min	
54	GATE Mock Test 4	65	100	180 min	



# Electronics Engineering

## Schedule of GATE 2019

### Online Test Series

Topicwise Tests					
Test No.	Test Syllabus	No. of Ques.	Marks	Time	Activation Date
1	<b>Networks-1:</b> Network solution methods: nodal and mesh analysis, Wye-Delta transformation. Network theorems: superposition, Thevenin and Norton's, maximum power transfer. Steady state sinusoidal analysis using phasors.	17	25	45 min	15-03-2018
2	<b>Networks-2:</b> Frequency domain analysis of RLC circuits. Time domain analysis of simple linear circuits. Solution of network equations using Laplace transform. Linear 2-port network parameters: driving point and transfer functions.	17	25	45 min	
3	<b>Control Systems-1:</b> Basic control system components, feedback principle, transfer function, block diagram representation, signal flow graph. Transient and steady-state analysis of LTI systems. Routh-Hurwitz; Root-locus plots.	17	25	45 min	
4	<b>Control Systems-2:</b> Frequency response, Nyquist stability criteria and Bode plot. Lag, lead and lag-lead compensation, PID controllers. State variable model and solution of state equation of LTI systems.	17	25	45 min	
5	<b>Electronic Devices-1:</b> Energy bands in intrinsic and extrinsic silicon, Carrier transport: diffusion current, drift current, mobility and resistivity. Generation and recombination of carriers. Poisson and continuity equations. P-N junction, Zener diode.	17	25	45 min	
6	<b>Electronic Devices-2:</b> BJT, MOS capacitor, MOSFET, LED, photo diode and solar cell. Integrated circuit fabrication process: oxidation, diffusion, ion implantation, photolithography and twin-tub CMOS process.	17	25	45 min	
7	<b>Analog Circuits-1:</b> Small signal equivalent circuits of diodes. Simple diode circuits: clipping, clamping and rectifiers. Biasing, bias stability of BJTs and MOSFETs.	17	25	45 min	
8	<b>Analog Circuits-2:</b> Small signal equivalent circuits of BJTs and MOSFETs, single-stage BJT and MOSFET amplifiers, mid-frequency small signal analysis. Frequency response of BJT and MOSFET amplifiers. Multi-stage, differential, feedback and power amplifiers.	17	25	45 min	
9	<b>Engineering mathematics-1:</b> Linear Algebra, Calculus, Vector Analysis, Probability and Statistics.	17	25	45 min	
10	<b>Engineering mathematics-2:</b> Differential Equations, Complex Analysis, Numerical Methods.	17	25	45 min	
11	<b>General Aptitude-1:</b> Numerical Ability: Numerical computation, numerical estimation, numerical reasoning and data interpretation.	17	25	45 min	
12	<b>General Aptitude-2:</b> Verbal Ability: English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction.	17	25	45 min	
13	<b>Analog Circuits-3:</b> Operational amplifiers: Simple op-amp circuits, active filters. Sinusoidal oscillators: criterion for oscillation, single-transistor and op-amp configurations. Function generators, wave-shaping circuits and 555 timers. Voltage reference circuits; Power supplies: ripple removal and regulation.	17	25	45 min	15-04-2018
14	<b>Microprocessors:</b> Semiconductor memories: ROM, SRAM, DRAM; 8-bit microprocessor (8085): architecture, programming, memory and I/O interfacing.	17	25	45 min	
15	<b>Digital Circuits-1:</b> Number systems; Combinatorial circuits: Boolean algebra, minimization of functions using Boolean identities and Karnaugh map, logic gates and their static CMOS implementations, arithmetic circuits, code converters, multiplexers, decoders.	17	25	45 min	
16	<b>Digital Circuits-2:</b> Programmable logic devices. Sequential circuits: latches and flip-flops, counters, shift-registers and finite state machines. Data converters: sample and hold circuits, ADCs and DACs.	17	25	45 min	
17	<b>Signals and Systems-1:</b> Continuous-time signals: Fourier series and Fourier transform representations, sampling theorem and applications. Continuous LTI systems: definition and properties, causality, stability, impulse response, convolution, poles and zeros, parallel and cascade structures, frequency response, group delay, phase delay.	17	25	45 min	
18	<b>Signals and Systems-2:</b> Discrete-time signals: discrete-time Fourier transform (DTFT), DFT, FFT, Z-transform, interpolation of discrete-time signals. Discrete LTI systems: definition and properties, causality, stability, impulse response, convolution, poles and zeros, parallel and cascade structures, digital filter design techniques.	17	25	45 min	
19	<b>Communications-1:</b> Analog communications: amplitude modulation and demodulation, angle modulation and demodulation, spectra of AM and FM, superheterodyne receivers, circuits for analog communications.	17	25	45 min	
20	<b>Communications-2:</b> Random processes: autocorrelation and power spectral density, properties of white noise, filtering of random signals through LTI systems. Information theory: entropy, mutual information and channel capacity theorem.	17	25	45 min	
21	<b>Communications-3:</b> Digital communications: PCM, DPCM, digital modulation schemes, amplitude, phase and frequency shift keying (ASK, PSK, FSK), QAM, MAP and ML decoding, matched filter receiver, calculation of bandwidth, SNR and BER for digital modulation; Fundamentals of error correction, Hamming codes; Timing and frequency synchronization, inter-symbol interference and its mitigation; Basics of TDMA, FDMA and CDMA.	17	25	45 min	
22	<b>Electromagnetics-1:</b> Electrostatics; Maxwell's equations: differential and integral forms and their interpretation, boundary conditions, wave equation, Poynting vector.	17	25	45 min	
23	<b>Electromagnetics-2:</b> Plane waves and properties: reflection and refraction, polarization, phase and group velocity, propagation through various media, skin depth. Waveguides: modes, boundary conditions, cut-off frequencies, dispersion relations.	17	25	45 min	
24	<b>Electromagnetics-3:</b> Transmission lines: equations, characteristic impedance, impedance matching, impedance transformation, S-parameters, Smith chart. Antennas: antenna types, radiation pattern, gain and directivity, return loss, antenna arrays. Basics of radar; Light propagation in optical fibers.	17	25	45 min	

<b>Single Subject Tests</b>					
<b>Test No.</b>	<b>Test Syllabus</b>	<b>No. of Ques.</b>	<b>Marks</b>	<b>Duration</b>	<b>Activation Date</b>
25	Networks	33	50	90 min	<b>15-05-2018</b>
26	Control Systems	33	50	90 min	
27	Electronic Devices	33	50	90 min	
28	Analog Circuits	33	50	90 min	
29	Engineering Mathematics	33	50	90 min	
30	General Aptitude	33	50	90 min	
31	Signals & Systems	33	50	90 min	<b>15-06-2018</b>
32	Analog Communication Systems	33	50	90 min	
33	Digital Communication Systems	33	50	90 min	
34	Digital Circuits	33	50	90 min	
35	Electromagnetics	33	50	90 min	
36	Microprocessors	33	50	90 min	
<b>Multiple Subject Tests</b>					
37	Networks + Control Systems	33	50	90 min	<b>15-07-2018</b>
38	Electronic Devices + Analog Circuits	33	50	90 min	
39	Digital Circuits + Microprocessors	33	50	90 min	
40	Communications	33	50	90 min	
41	Electromagnetics + Signals & Systems	33	50	90 min	
42	Engineering Mathematics + General Aptitude	33	50	90 min	
<b>Full Syllabus Tests</b>					
43	Full Syllabus Test-1 (Basic Level)	65	100	180 min	<b>15-08-2018</b>
44	Full Syllabus Test-2 (Basic Level)	65	100	180 min	
45	Full Syllabus Test-3 (Basic Level)	65	100	180 min	
46	Full Syllabus Test-4 (Basic Level)	65	100	180 min	
47	Full Syllabus Test-5 (Advance Level)	65	100	180 min	<b>15-09-2018</b>
48	Full Syllabus Test-6 (Advance Level)	65	100	180 min	
49	Full Syllabus Test-7 (Advance Level)	65	100	180 min	
50	Full Syllabus Test-8 (Advance Level)	65	100	180 min	
<b>Candidate has to upload GATE-2019 Admit Card to access below mentioned tests</b>					
51	GATE Mock Test 1	65	100	180 min	
52	GATE Mock Test 2	65	100	180 min	
53	GATE Mock Test 3	65	100	180 min	
54	GATE Mock Test 4	65	100	180 min	