

**Topicwise Tests**

Tests	Test Activation Date	Test Closing Date	Test Syllabus	No. of Ques.	Marks	Timing		
TWT-1	15/03/2019	20/02/2020	<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		
TWT-2			<b>Electric Circuits-2:</b> Transient response of dc and ac networks, Resonance, Passive filters, Two-port networks.	17	25	45 min		
TWT-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		
TWT-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		
TWT-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		
TWT-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		
TWT-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		
TWT-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		
TWT-9			<b>Engineering mathematics-1:</b> Linear Algebra, Calculus, Probability and Statistics.	17	25	45 min		
TWT-10			<b>Engineering mathematics-2:</b> Differential Equations, Complex Analysis, Numerical Methods, Transform Theory.	17	25	45 min		
TWT-11			<b>General Aptitude-1:</b> Numerical Ability: Numerical computation, numerical estimation, numerical reasoning and data interpretation.	17	25	45 min		
TWT-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		
TWT-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
TWT-14					<b>Signals &amp; Systems-2 :</b> Sampling theorem, Applications of Fourier Transform, Laplace Transform and z-Transform.	17	25	45 min
TWT-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		
TWT-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		
TWT-17	<b>Electrical &amp; Electronics Measurements-1:</b> Measurement of voltage, current, power, energy and power factor; Error analysis.	17			25	45 min		

TWT-18	15/04/2019	20/02/2020	<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
TWT-19			<b>Digital Electronics &amp; Microprocessors-1:</b> Combinational and Sequential logic circuits, Multiplexer, Demultiplexer.	17	25	45 min
TWT-20			<b>Digital Electronics &amp; Microprocessors-2:</b> Sample and hold circuits, A/D and D/A converters, 8085Microprocessor: Architecture, Programming and Interfacing.	17	25	45 min
TWT-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
TWT-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
TWT-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
TWT-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
<b>Single Subject Tests</b>						
SST-1	15/05/2019	20/02/2020	Electric Circuits	33	50	90 min
SST-2			Control Systems	33	50	90 min
SST-3			Electrical Machines	33	50	90 min
SST-4			Power Systems	33	50	90 min
SST-5			Engineering Mathematics	33	50	90 min
SST-6			General Aptitude	33	50	90 min
SST-7	15/06/2019	20/02/2020	Signals & Systems	33	50	90 min
SST-8			Power Electronics	33	50	90 min
SST-9			Electrical & Electronics Measurements	33	50	90 min
SST-10			Digital Electronics & Microprocessors	33	50	90 min
SST-11			Analog Electronics	33	50	90 min
SST-12			Electromagnetic Fields	33	50	90 min
<b>Multiple Subject Tests</b>						
MST-1	15/07/2019	20/02/2020	Electric Circuits + Control Systems	33	50	90 min
MST-2			Electrical Machines + Electrical & Electronics Measurements	33	50	90 min
MST-3			Analog Electronics + Power System	33	50	90 min
MST-4			Signals & Systems + Electromagnetic Fields	33	50	90 min
MST-5			Power Electronics + Digital Electronics & Microprocessors	33	50	90 min
MST-6			Engineering Mathematics + General Aptitude	33	50	90 min
<b>Full Syllabus Tests</b>						
FST-1	15/08/2019	20/02/2020	Full Syllabus Test-1	65	100	180 min
FST-2			Full Syllabus Test-2	65	100	180 min
FST-3			Full Syllabus Test-3	65	100	180 min
FST-4			Full Syllabus Test-4	65	100	180 min
FST-5	15/09/2019	20/02/2020	Full Syllabus Test-5	65	100	180 min
FST-6			Full Syllabus Test-6	65	100	180 min
FST-7			Full Syllabus Test-7	65	100	180 min
FST-8			Full Syllabus Test-8	65	100	180 min
<b>Candidate has to upload GATE-2020 Admit Card to access below mentioned Tests</b>						
GMT-1	04/01/2020	20/02/2020	GATE Mock Test 1	65	100	180 min
GMT-2			GATE Mock Test 2	65	100	180 min
GMT-3			GATE Mock Test 3	65	100	180 min
GMT-4			GATE Mock Test 4	65	100	180 min