EE

Detailed Schedule

GATE 2023: **Online Test Series**

ELECTRICAL ENGINEERING

MADE EASY

Topicwise Tests

Test No.	Test Syllabus	No. of Ques.	Marks	Time	Activation Date
1	**Electric Circuits (Part-1) :** Network elements: R, L,C, & M; KCL, KVL, Node and Mesh analysis, Ideal current and voltage sources; Sinusoidal steady state analysis, Complex Power and power factor in ac circuits; Thevenin's theorem, Norton's theorem, Superposition theorem, Maximum power transfer theorem, star delta transformation.	17	25	45 min	
2	**Electric Circuits (Part-2) :** Transient response of dc and ac networks, Resonance, Two port networks, balanced three phase circuits,.	17	25	45 min	
3	**Control Systems (Part-1) :** 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, Stability analysis using Routh-Hurwitz, Root loci.	17	25	45 min	
4	**Control Systems (Part-2) :** Nyquist criteria, Bode plots, Lag, Lead and Lead Lag compensators; P, PI and PID controllers; State space model, Solution of state equation of LTI Systems.	17	25	45 min	**Active**
5	**Electrical Machines (Part-1) :** Electromechanical energy conversion principles, DC machines: separately excited, series and shunt, motoring and generating mode of operation and their characteristics, speed control of dc motors; Synchronous machines: cylindrical and salient pole machines, performance & characteristics regulation and parallel operation of generators, starting of synchronous motor, Types of losses and efficiency calculations of electric machines.	17	25	45 min	
6	**Electrical Machines (Part-2):** Single phase transformers: equivalent circuit, phasor diagram, open circuit and short circuit tests, regulation and efficiency; Three phase transformers: connections, vector groups, parallel operation; Autotransformer, 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	**Power Systems (Part-1) :** Basic concepts of electrical power generation, 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, directional and distance protection; Circuit breakers.	17	25	45 min	
8	**Power Systems (Part-2) :** 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, Economic load dispatch (with and without considering transmission losses) .	17	25	45 min	**Active**
9	**Engineering Mathematics (Part-1):** Linear Algebra, Calculus, Corelation and regression analysis.	17	25	45 min	
10	**Engineering Mathematics (Part-2):** Differential Equations, Complex Analysis, Fourier Series, Probability and Statistics.	17	25	45 min	
11	**General Aptitude (Part-1):** Numerical Ability, Numerical computation, numerical estimation, and data interpretation.	17	25	45 min	
12	**General Aptitude (Part-2) :** Verbal Ability: English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning, numerical reasoning, verbal deduction and spatial aptitude.	17	25	45 min	
13	**Signals & Systems (Part-1) :** Representation of continuous and discrete time signals, Shifting and scaling properties, Linear Time Invariant and Causal systems, Fourier series representation of continuous and discrete time periodic signals, RMS value, average value calculation for any general periodic waveform.	17	25	45 min	
14	**Signals & Systems (Part-2) :** Sampling theorem, Applications of Fourier Transform for continuous and discrete time signals, Laplace Transform and z-Transform.	17	25	45 min	
15	**Power Electronics (Part-1) :** Static V-I Characteristics and firing/gating circuits of Thyristor, MOSFET, IGBT; Single and three phase configuration of uncontrolled rectifiers, voltage and current commutated thyristor based converters, Bidirectional ac to dc voltage source converters, Magnitude and phase of line current harmonics for uncontrolled and thyristor based converters, Power factor, Distortion factor of ac to dc converters.	17	25	45 min	**Active**
16	**Power Electronics (Part-2) :** DC to DC conversion: Buck, Boost and Buck-Boost converters; Single phase and three phase voltage and current source inverters, Sinusoidal pulse width modulation.	17	25	45 min	
17	**Electrical & Electronics Measurements (Part-1) :** Topic: Measurement of voltage, current, power, energy and power factor; Error analysis.	17	25	45 min	
18	**Electrical & Electronics Measurements (Part-2) :** Bridges and Potentiometers, Instrument transformers, Digital voltmeters and multimeters, Phase, Time and Frequency measurement; Oscilloscopes.	17	25	45 min	
19	**Digital Electronics (Part-1):** Combinational circuits, Multiplexers, Demultiplexers.	17	25	45 min	
20	**Digital Electronics (Part-2):** Sample and hold circuits, A/D and D/A converters, sequential logic circuits	17	25	45 min	
21	**Analog Electronics (Part-1) :** Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: Biasing, Equivalent circuit and Frequency response.	17	25	45 min	
22	**Analog Electronics (Part-2) :** Oscillators and Feedback amplifiers; Operational amplifiers: Characteristics and applications; Single stage active filters, Sallen-key, Butterworth filters, VCOs and Timers, Schmitt trigger	17	25	45 min	**Active**
23	**Electromagnetic Fields (Part-1):** 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	**Electromagnetic Fields (Part-2) :** 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	

EE

Detailed Schedule

GATE 2023: Online Test Series
ELECTRICAL ENGINEERING

MADE EASY

Test No.	Test Syllabus	No. of Ques.	Marks	Duration	Activation Date
Single Subject Tests					
25	Electric Circuits	33	50	90 min	Active
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	Active
32	Power Electronics	33	50	90 min	
33	Electrical & Electronics Measurements	33	50	90 min	
34	Digital Electronics	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	Active
38	Electrical Machines + Electrical & Electronics Measurements	33	50	90 min	
39	Analog Electronics + Power Systems	33	50	90 min	
40	Signals & Systems + Electromagnetic Fields	33	50	90 min	
41	Power Electronics + Digital Electronics	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	Active
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	Active
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	
Mock Tests					
51	GATE Mock Test 1	65	100	180 min	Active
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	