



**ACE<sup>®</sup>**  
Engineering Academy  
Leading Institute for ESE/GATE/PSUs



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online**

# GATE-2024

## *Online* Test Series

### Electronics and Communication Engineering Schedule

No.of Tests : 54 + 54 *free* practice tests of GATE-2023 Online Test Series

	GATE - 2024 Test Series	Practice Tests GATE - 2023 OTS
Topic wise Tests	23	23
Grand Tests (Subject Wise Tests + Multi-Subject Wise Tests)	19	19
Full Length Mock Tests	12	12
<b>Total Tests - 108</b>		

**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-2024 Exam schedule.
- ★ Tests will be activated at 06:00 pm on the scheduled day.
- ★ All tests will be active till GATE-2024 Exam.

## Topic wise Tests

*(No. of Questions: 15, Time duration: 42 Minutes and Marks: 25 M)*

Test No	Name of the Test	Date of Activation
Test-01	<p><b>Engineering Mathematics-1:</b>            Linear Algebra: Vector space, basis, linear dependence and independence, matrix algebra, eigenvalues and eigenvectors, rank, solution of linear equations- existence and uniqueness.            Calculus: Mean value theorems, theorems of integral calculus, evaluation of definite and improper integrals, partial derivatives, maxima and minima, multiple integrals, line, surface and volume integrals, Taylor series.            Vector Analysis : Vectors in plane and space, vector operations, gradient, divergence and curl, Gauss's, Green's and Stokes' theorems.</p>	17-04-2023
Test-02	<p><b>Engineering Mathematics-2:</b>            Differential Equations: First order equations (linear and nonlinear), higher order linear differential equations, Cauchy's and Euler's equations, methods of solution using variation of parameters, complementary function and particular integral, partial differential equations, variable separable method, initial and boundary value problems.            Complex Analysis: Analytic functions, Cauchy's integral theorem, Cauchy's integral formula, sequences, series, convergence tests, Taylor and Laurent series, residue theorem.            Probability and Statistics: Mean, median, mode, standard deviation, combinatorial probability, probability distributions, binomial distribution, Poisson distribution, exponential distribution, normal distribution, joint and conditional probability.</p>	
Test-03	<p><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 stability criteria, root-locus plot.</p>	24-04-2023
Test-04	<p><b>Control Systems-2:</b>            Frequency response; Nyquist stability criteria; Bode Plot, Lag, lead and lag-lead compensation; State variable model and solution of state equation of LTI systems.</p>	
Test-05	<p><b>Signals and Systems -1:</b>            Introduction to signals, LTI systems: definition and properties, causality, stability, impulse response, convolution. Fourier series and Fourier transform representations. sampling theorem and applications. Frequency response, group delay and phase delay.</p>	
Test-06	<p><b>Signals and Systems -2:</b>            Laplace transform, discrete-time Fourier transform (DTFT), DFT, Z-transform, poles and zeros, discrete-time processing of continuous-time signals.</p>	

Test No	Name of the Test	Date of Activation
Test-07	<b>Networks-1:</b> Circuit analysis: Node and mesh analysis, superposition, Thevenin's theorem, Norton's theorem, reciprocity, maximum power transfer, wye-delta transformation	01-05-2023
Test-08	<b>Networks-2:</b> Sinusoidal steady state analysis: phasors, complex power, Time and frequency domain analysis of linear circuits: RL, RC and RLC circuits, solution of network equations using Laplace transform. Linear 2-port network parameters.	
Test-09	<b>Digital Circuits-1:</b> Binary, integer and floating-point numbers, 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.	08-05-2023
Test-10	<b>Digital Circuits-2:</b> Sequential circuits: latches and flip-flops, counters, shift-registers, finite state machines, propagation delay, setup and hold time, critical path delay. Semiconductor memories: ROM, SRAM, DRAM. Data converters: sample and hold circuits, ADCs and DACs.	
Test-11	<b>Digital Circuits-3:</b> Computer organization: Machine instructions and addressing modes, ALU, data-path and control unit, instruction pipelining.	
Test-12	<b>Analog Circuits-1:</b> Diode circuits: clipping, clamping and rectifiers. BJT and MOSFET amplifiers: biasing, ac coupling, small signal analysis, frequency response, Current mirrors.	15-05-2023
Test-13	<b>Analog Circuits-2:</b> Op-amp circuits: Amplifiers, summers, differentiators, integrators, active filters, Schmitt triggers and oscillators. Differential amplifiers.	
Test-14	<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, BJT. Direct and Indirect band-gap semiconductor.	22-05-2023
Test-15	<b>Electronic Devices-2:</b> MOS capacitor, MOSFET, LED, photo diode and solar cell.	

Test No	Name of the Test	Date of Activation
Test-16	<b>Communications-1:</b> Analog communications: amplitude modulation and demodulation, angle modulation and demodulation, spectra of AM and FM, superheterodyne receivers.	29-05-2023
Test-17	<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.	
Test-18	<b>Communications-3:</b> Digital communications: PCM, DPCM, digital modulation schemes (ASK, PSK, FSK, QAM), bandwidth, inter-symbol interference, MAP, ML detection, matched filter receiver, SNR and BER. Fundamentals of error correction, Hamming codes, CRC.	
Test-19	<b>Electromagnetics-1:</b> Maxwell's equations: differential and integral forms and their interpretation, boundary conditions, wave equation, Poynting vector; Plane waves and properties: reflection and refraction, polarization, phase and group velocity, propagation through various media, skin depth.	05-06-2023
Test-20	<b>Electromagnetics-2:</b> Transmission lines: equations, characteristic impedance, impedance matching, impedance transformation, S-parameters, Smith chart; Rectangular and circular waveguides, light propagation in optical fibers, dipole and monopole antennas, linear antenna arrays.	
Test-21	<b>Verbal Ability:</b> 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.	12-06-2023
Test-22	<b>Quantitative Aptitude:</b> 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.	
Test-23	<b>Analytical Aptitude:</b> Logic: deduction and induction, Analogy, Numerical relations and reasoning <b>Spatial Aptitude:</b> Transformation of shapes: translation, rotation, scaling, mirroring, assembling, and grouping Paper folding, cutting, and patterns in 2 and 3 dimensions	

Test No	Name of the Test	Date of Activation
<b>Subject Wise Grand Tests</b> <i>(No. of Questions: 30, Time duration: 83 Minutes and Marks: 50 M)</i>		
Test-24	Engineering Mathematics	26-06-2023
Test-25	Control Systems	
Test-26	Signals and Systems	03-07-2023
Test-27	Digital Circuits	
Test-28	Networks	10-07-2023
Test-29	Electronic Devices	
Test-30	Analog Circuits	17-07-2023
Test-31	Communications	
Test-32	Electromagnetics	24-07-2023
Test-33	General Aptitude	31-07-2023

<b>Full Length Mock Test - 1<sup>st</sup> Series</b> <i>(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)</i>		
Test-34	Full Length Mock Test-1	14-08-2023
Test-35	Full Length Mock Test-2	21-08-2023
Test-36	Full Length Mock Test-3	28-08-2023
Test-37	Full Length Mock Test-4	11-09-2023
Test-38	Full Length Mock Test-5	18-09-2023
Test-39	Full Length Mock Test-6	25-09-2023

Test No	Name of the Test	Date of Activation
<b>Multi-Subject Wise Grand Tests</b> <i>(No. of Questions: 30, Time duration: 83 Minutes and Marks: 50 M)</i>		
Test-40	Networks & Electromagnetics	02-10-2023
Test-41	Control Systems & Signals and Systems	
Test-42	Electronic Devices & Analog Circuits	09-10-2023
Test-43	Communications & Digital Circuits	
Test-44	Engineering Mathematics & General Aptitude	16-10-2023
Test-45	Networks & Signals and Systems	20-10-2023
Test-46	Analog Circuits & Digital Circuits	
Test-47	Electromagnetics & Electronic Devices	21-10-2023
Test-48	Communications & Control Systems	

<b>Full Length Mock Test - 2<sup>nd</sup> Series</b> <i>(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)</i>		
Test-49	Full Length Mock Test-7	30-10-2023
Test-50	Full Length Mock Test-8	06-11-2023
Test-51	Full Length Mock Test-9	27-11-2023
Test-52	Full Length Mock Test-10	04-12-2023
Test-53	Full Length Mock Test-11	01-01-2024
Test-54	Full Length Mock Test-12	08-01-2024

# Free Practice Tests of GATE-2023 Online Test Series

## Topic wise Tests

(No. of Questions: 15, Time duration: 42 Minutes and Marks: 25 M)

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Test-02	<p><b>Engineering Mathematics-2:</b>            Differential Equations: First order equations (linear and nonlinear), higher order linear differential equations, Cauchy's and Euler's equations, methods of solution using variation of parameters, complementary function and particular integral, partial differential equations, variable separable method, initial and boundary value problems.            Complex Analysis: Analytic functions, Cauchy's integral theorem, Cauchy's integral formula, sequences, series, convergence tests, Taylor and Laurent series, residue theorem.            Probability and Statistics: Mean, median, mode, standard deviation, combinatorial probability, probability distributions, binomial distribution, Poisson distribution, exponential distribution, normal distribution, joint and conditional probability.</p>	
Test-03	<p><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 stability criteria, root-locus plot.</p>	
Test-04	<p><b>Control Systems-2:</b>            Frequency response; Nyquist stability criteria; Bode Plot, Lag, lead and lag-lead compensation; State variable model and solution of state equation of LTI systems.</p>	
Test-05	<p><b>Signals and Systems -1:</b>            Introduction to signals, LTI systems: definition and properties, causality, stability, impulse response, convolution. Fourier series and Fourier transform representations. sampling theorem and applications. Frequency response, group delay and phase delay.</p>	
Test-06	<p><b>Signals and Systems -2:</b>            Laplace transform, discrete-time Fourier transform (DTFT), DFT, Z-transform, poles and zeros, discrete-time processing of continuous-time signals.</p>	

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Test-08	<b>Networks-2:</b> Sinusoidal steady state analysis: phasors, complex power, Time and frequency domain analysis of linear circuits: RL, RC and RLC circuits, solution of network equations using Laplace transform. Linear 2-port network parameters.	
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Test-10	<b>Digital Circuits-2:</b> Sequential circuits: latches and flip-flops, counters, shift-registers, finite state machines, propagation delay, setup and hold time, critical path delay. Data converters: sample and hold circuits, ADCs and DACs.	
Test-11	<b>Digital Circuits-3:</b> Semiconductor memories: ROM, SRAM, DRAM Computer organization: Machine instructions and addressing modes, ALU, data-path and control unit, instruction pipelining.	
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Test-17	<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.	
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Test-24	Engineering Mathematics	<b>25-03-2023</b>
Test-25	Control Systems	
Test-26	Signals and Systems	
Test-27	Digital Circuits	
Test-28	Networks	
Test-29	Electronic Devices	
Test-30	Analog Circuits	
Test-31	Communications	
Test-32	Electromagnetics	
Test-33	General Aptitude	

<b>Multi-Subject Wise Grand Tests</b> <i>(No. of Questions: 30, Time duration: 83 Minutes and Marks: 50 M)</i>		
Test-34	Networks & Electromagnetics	<b>25-03-2023</b>
Test-35	Control Systems & Signals and Systems	
Test-36	Electronic Devices & Analog Circuits	
Test-37	Communications & Digital Circuits	
Test-38	Engineering Mathematics & General Aptitude	
Test-39	Networks & Signals and Systems	
Test-40	Analog Circuits & Digital Circuits	
Test-41	Electromagnetics & Electronic Devices	
Test-42	Communications & Control Systems	

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<b>Full Length Mock Tests</b> <i>(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)</i>		
Test-43	Full Length Mock Test-1	<b>01-04-2023</b>
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	