



ACE[®]
Engineering Academy
Leading Institute for ESE/GATE/PSUs

GATE-2023

Online Test Series

Electronics and Communication Engineering Schedule

No. of Tests : 54 + 54 *free* practice tests of GATE-2022 Online Test Series

| | GATE - 2023 Test Series | Practice Tests GATE - 2022 OTS |
|--|----------------------------|-----------------------------------|
| Topic wise Tests | 23 | 23 |
| Grand Tests (Subject Wise Tests + Multi-Subject Wise Tests) | 19 | 19 |
| Full Length Mock Tests | 12 | 12 |
| Total Tests - 108 | | |

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-2023 Exam schedule.
- ★ Tests will be activated at 06:00 pm on the scheduled day.

Topic wise Tests

(No. of Questions: 15, Time duration: 45 Minutes and Marks: 25 M)

| Test No | Name of the Test | Date of Activation |
|---------|---|--------------------|
| Test-01 | <p>Engineering Mathematics-1: 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> | 15-04-2022 |
| Test-02 | <p>Engineering Mathematics-2: 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>Control Systems-1: 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> | 18-04-2022 |
| Test-04 | <p>Control Systems-2: 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>Signals and Systems -1: 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>Signals and Systems -2: 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 | Networks-1: Circuit analysis: Node and mesh analysis, superposition, Thevenin's theorem, Norton's theorem, reciprocity, maximum power transfer, wye-delta transformation | 25-04-2022 |
| Test-08 | Networks-2: 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 | Digital Circuits-1: 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. | 02-05-2022 |
| Test-10 | Digital Circuits-2: 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 | Digital Circuits-3: Semiconductor memories: ROM, SRAM, DRAM Computer organization: Machine instructions and addressing modes, ALU, data-path and control unit, instruction pipelining. | |
| Test-12 | Analog Circuits-1: Diode circuits: clipping, clamping and rectifiers. BJT and MOSFET amplifiers: biasing, ac coupling, small signal analysis, frequency response, Current mirrors. | 09-05-2022 |
| Test-13 | Analog Circuits-2: Op-amp circuits: Amplifiers, summers, differentiators, integrators, active filters, Schmitt triggers and oscillators. Differential amplifiers. | |
| Test-14 | Electronic Devices-1: 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. | 16-05-2022 |
| Test-15 | Electronic Devices-2: MOS capacitor, MOSFET, LED, photo diode and solar cell. | |

| Test No | Name of the Test | Date of Activation |
|---------|--|--------------------|
| Test-16 | Communications-1: Analog communications: amplitude modulation and demodulation, angle modulation and demodulation, spectra of AM and FM, superheterodyne receivers. | 23-05-2022 |
| Test-17 | Communications-2: 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 | Communications-3: 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 | Electromagnetics-1: 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. | 30-05-2022 |
| Test-20 | Electromagnetics-2: 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 | Verbal Ability: 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. | 06-06-2022 |
| Test-22 | Quantitative Aptitude: 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 | Analytical Aptitude: Logic: deduction and induction, Analogy, Numerical relations and reasoning Spatial Aptitude: 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 |
|---|-------------------------|--------------------|
| Subject Wise Grand Tests <i>(No. of Questions: 30, Time duration: 90 Minutes and Marks: 50 M)</i> | | |
| Test-24 | Engineering Mathematics | 27-06-2022 |
| Test-25 | Control Systems | |
| Test-26 | Signals and Systems | 04-07-2022 |
| Test-27 | Digital Circuits | |
| Test-28 | Networks | 11-07-2022 |
| Test-29 | Electronic Devices | |
| Test-30 | Analog Circuits | 18-07-2022 |
| Test-31 | Communications | |
| Test-32 | Electromagnetics | 25-07-2022 |
| Test-33 | General Aptitude | 01-08-2022 |

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| Full Length Mock Test - 1st Series <i>(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)</i> | | |
| Test-34 | Full Length Mock Test-1 | 15-08-2022 |
| Test-35 | Full Length Mock Test-2 | 22-08-2022 |
| Test-36 | Full Length Mock Test-3 | 29-08-2022 |
| Test-37 | Full Length Mock Test-4 | 12-09-2022 |
| Test-38 | Full Length Mock Test-5 | 19-09-2022 |
| Test-39 | Full Length Mock Test-6 | 26-09-2022 |

| Test No | Name of the Test | Date of Activation |
|---|--|--------------------|
| Multi-Subject Wise Grand Tests <i>(No. of Questions: 30, Time duration: 90 Minutes and Marks: 50 M)</i> | | |
| Test-40 | Networks & Electromagnetics | 10-10-2022 |
| Test-41 | Control Systems & Signals and Systems | |
| Test-42 | Electronic Devices & Analog Circuits | 17-10-2022 |
| Test-43 | Communications & Digital Circuits | |
| Test-44 | Engineering Mathematics & General Aptitude | 24-10-2022 |
| Test-45 | Networks & Signals and Systems | 28-10-2022 |
| Test-46 | Analog Circuits & Digital Circuits | |
| Test-47 | Electromagnetics & Electronic Devices | 31-10-2022 |
| Test-48 | Communications & Control Systems | |

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| Full Length Mock Test - 2nd Series <i>(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)</i> | | |
| Test-49 | Full Length Mock Test-7 | 14-11-2022 |
| Test-50 | Full Length Mock Test-8 | 21-11-2022 |
| Test-51 | Full Length Mock Test-9 | 28-11-2022 |
| Test-52 | Full Length Mock Test-10 | 26-12-2022 |
| Test-53 | Full Length Mock Test-11 | 02-01-2023 |
| Test-54 | Full Length Mock Test-12 | 09-01-2023 |

Free Practice Tests of GATE-2022 Online Test Series

Topic wise Tests

(No. of Questions: 15, Time duration: 45 Minutes and Marks: 25 M)

| Test No | Name of the Test | Date of Activation |
|---------|---|--------------------|
| Test-01 | <p>Engineering Mathematics-1: 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> | 14-03-2022 |
| Test-02 | <p>Engineering Mathematics-2: 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>Control Systems-1: 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>Control Systems-2: 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>Signals and Systems -1: 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>Signals and Systems -2: 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 | Digital Circuits-1: 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. | 14-03-2022 |
| Test-08 | Digital Circuits-2: 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-09 | Digital Circuits-3: Semiconductor memories: ROM, SRAM, DRAM Computer organization: Machine instructions and addressing modes, ALU, data-path and control unit, instruction pipelining. | |
| Test-10 | Networks-1: Circuit analysis: Node and mesh analysis, superposition, Thevenin's theorem, Norton's theorem, reciprocity, maximum power transfer, wye-delta transformation | |
| Test-11 | Networks-2: 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-12 | Electronic Devices-1: 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. | |
| Test-13 | Electronic Devices-2: MOS capacitor, MOSFET, LED, photo diode and solar cell. | |
| Test-14 | Analog Circuits-1: Diode circuits: clipping, clamping and rectifiers. BJT and MOSFET amplifiers: biasing, ac coupling, small signal analysis, frequency response, Current mirrors. | |
| Test-15 | Analog Circuits-2: Op-amp circuits: Amplifiers, summers, differentiators, integrators, active filters, Schmitt triggers and oscillators. Differential amplifiers. | |

| Test No | Name of the Test | Date of Activation |
|---------|--|--------------------|
| Test-16 | Communications-1: Analog communications: amplitude modulation and demodulation, angle modulation and demodulation, spectra of AM and FM, superheterodyne receivers. | 14-03-2022 |
| Test-17 | Communications-2: 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 | Communications-3: 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 | Electromagnetics-1: 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. | |
| Test-20 | Electromagnetics-2: 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 | Verbal Ability: 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. | |
| Test-22 | Quantitative Aptitude: 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 | Analytical Aptitude: Logic: deduction and induction, Analogy, Numerical relations and reasoning Spatial Aptitude: 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 |
|---|-------------------------|--------------------|
| Subject Wise Grand Tests <i>(No. of Questions: 30, Time duration: 90 Minutes and Marks: 50 M)</i> | | |
| Test-24 | Engineering Mathematics | 14-03-2022 |
| 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 | |

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|---|--|-------------------|
| Multi-Subject Wise Grand Tests <i>(No. of Questions: 30, Time duration: 90 Minutes and Marks: 50 M)</i> | | |
| Test-34 | Networks & Electromagnetics | 20-03-2022 |
| 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 | |

| Test No | Name of the Test | Date of Activation |
|---|--------------------------|--------------------|
| Full Length Mock Tests <i>(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)</i> | | |
| Test-43 | Full Length Mock Test-1 | 01-04-2022 |
| 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 | |