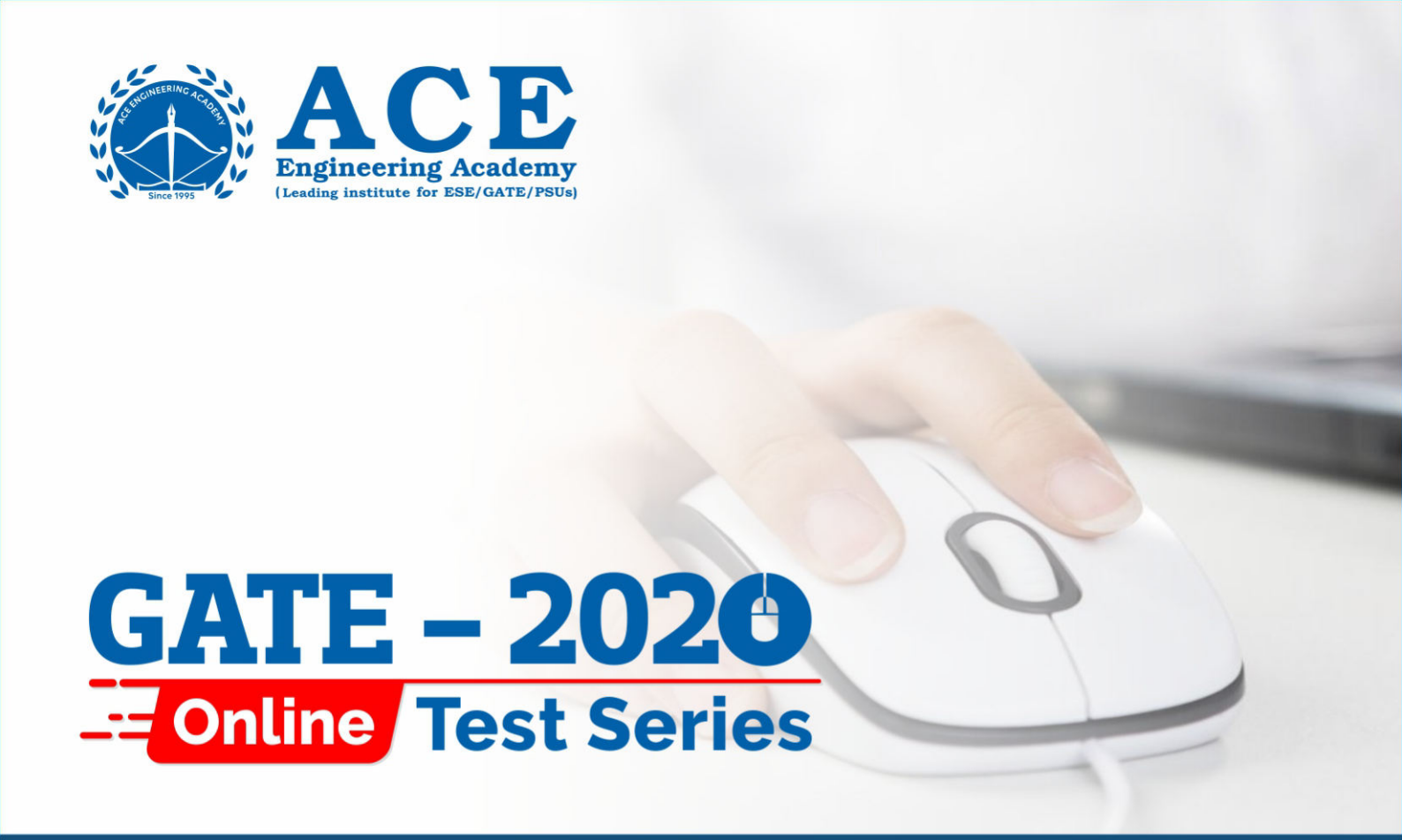
ACE Engineering Academy
(Leading institute for ESE/GATE/PSUs)



GATE – 2020

Online Test Series

ELECTRONICS & COMMUNICATION ENGINEERING (EC)

No. of Tests : 64 + Free 54 Practice Tests of GATE - 2019 Online Test Series

	GATE - 2020 Test Series	Practice Tests GATE - 2019 Test Series
Topic wise Tests	22	22
Subject Wise / Multi Subject Grand Tests	30	20
Full Length Mock Tests	12	12

All tests will be available till GATE -2020 Examination.

TEST SERIES HIGHLIGHTS

- ★ All India Rank will be given for each test.
- ★ Test wise and overall statistics.
- ★ Comparison with toppers.
- ★ Question wise and test wise time analysis & comparison with toppers on time management.

Topic wise Tests

Each test carries 25 marks and 45 minutes duration

Test consists of 5 one mark questions and 10 two marks questions

Tests will be activated at 2:00 pm on scheduled day

Test No	Topic code	Topic	Date of Activation
EC-01	GEM – 1 (Engineering Mathematics)	Linear Algebra, Calculus, Differential Equations and Vector Analysis.	02-05-2019
EC-02	GEM – 2 (Engineering Mathematics)	Complex Anaysis, Numerical Methods and Probability and Statistics.	
EC-03	GCS – 1 (Control Systems)	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.	
EC-04	GCS – 2 (Control Systems)	Frequency response; Nyquist stability criteria; Bode Plot, Lag, lead and lag-lead compensation; State variable model and solution of state equation of LTI systems.	
EC-05	GSS – 1 (Signals and Systems)	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.	08-05-2019
EC-06	GSS – 2 (Signals and Systems)	Laplace transform, discrete-time Fourier transform (DTFT), DFT, FFT, Z-transform, interpolation of discrete-time signals, poles and zeros, parallel and cascade structure, digital filter design techniques.	
EC-07	GDC – 1 (Digital Circuits)	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 and PLAs;	
EC-08	GDC – 2 (Digital Circuits)	Sequential circuits: latches and flip-flops, counters, shift-registers and finite state machines. Data converters: sample and hold circuits, ADCs and DACs;	
EC-09	GDC – 3 (Digital Circuits)	Semiconductor memories: ROM, SRAM, DRAM, 8-bit microprocessor (8085): architecture, programming, memory and I/O interfacing.	
EC-10	GNW – 1 (Networks)	Network solution methods: nodal and mesh analysis; Network theorems: superposition, Thevenin and Norton's, maximum power transfer; Wye-Delta transformation	15-05-2019
EC-11	GNW – 2 (Networks)	Steady state sinusoidal analysis using phasors; Time domain analysis of simple linear circuits; Solution of network equations using Laplace transform; Frequency domain analysis of RLC circuits; Linear 2-port network parameters: driving point and transfer functions; State equations for networks.	
EC-12	GEDC – 1 (Electronic Devices)	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.	
EC-13	GEDC – 2 (Electronic Devices)	MOS capacitor, MOSFET, LED, photo diode and solar cell; Integrated circuit fabrication process: oxidation, diffusion, ion implantation, photolithography and twin-tub CMOS process.	
EC-14	GAC – 1 (Analog Circuits)	Small signal equivalent circuits of diodes, BJTs and MOSFETs; Simple diode circuits: clipping, clamping and rectifiers; Single-stage BJT and MOSFET amplifiers: biasing, bias stability, mid-frequency small signal analysis and frequency response; BJT and MOSFET amplifiers: multi-stage.	22-05-2019
EC-15	GAC – 2 (Analog Circuits)	Differential, feedback, power and operational; 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.	

Test No	Topic code	Topic	Date of Activation
EC-16	GCMS – 1 (Communications)	Analog communications: amplitude modulation and demodulation, angle modulation and demodulation, spectra of AM and FM, superheterodyne receivers, circuits for analog communications.	22-05-2019
EC-17	GCMS – 2 (Communications)	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.	
EC-18	GCMS – 3 (Communications)	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.	
EC-19	GEMT – 1 (Electromagnetics)	Electrostatics; 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.	29-05-2019
EC-20	GEMT – 2 (Electromagnetics)	Transmission lines: equations, characteristic impedance, impedance matching, impedance transformation, S-parameters, Smith chart; Waveguides: modes, boundary conditions, cut-off frequencies, dispersion relations; Antennas: antenna types, radiation pattern, gain and directivity, return loss, antenna arrays; Basics of radar; Light propagation in optical fibers.	
EC-21	GVA (General Aptitude)	English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction.	
EC-22	GNA (General Aptitude)	Numerical computation, numerical estimation, numerical reasoning and data interpretation.	

Subject-wise Grand Tests 1st Series

Each test carries 50 marks and 90 minutes duration

Test consists of 10 one mark questions and 20 two marks questions

Test No	Subject Code	Name of the Subject	Date of Activation
EC-23	GEM	Engineering Mathematics	05-06-2019
EC-24	GCS	Control Systems	
EC-25	GSS	Signals and Systems	12-06-2019
EC-26	GDC	Digital Circuits	
EC-27	GNW	Networks	19-06-2019
EC-28	GEDC	Electronic Devices	
EC-29	GAC	Analog Circuits	26-06-2019
EC-30	GCMS	Communications	
EC-31	GEMT	Electromagnetics	03-07-2019
EC-32	GGA	General Aptitude	

Full Length Mock GATE - 1st Series

As per GATE pattern

Each test carries 100 Marks and 3 Hours duration

Test No	Mock codes		Date of Activation
EC-33	Mock-1	Full Length GATE Mock Test-1	10-07-2019
EC-34	Mock-2	Full Length GATE Mock Test-2	17-07-2019
EC-35	Mock-3	Full Length GATE Mock Test-3	24-07-2019

Subject-wise Grand Tests 2nd Series

Each test carries 50 marks and 90 minutes duration

Test No	Subject Code	Name of the Subject	Date of Activation
EC-36	GEM	Engineering Mathematics	07-08-2019
EC-37	GCS	Control Systems	
EC-38	GSS	Signals and Systems	14-08-2019
EC-39	GDC	Digital Circuits	
EC-40	GNW	Networks	21-08-2019
EC-41	GEDC	Electronic Devices	
EC-42	GAC	Analog Circuits	28-08-2019
EC-43	GCMS	Communications	
EC-44	GEMT	Electromagnetics	04-09-2019
EC-45	GGA	General Aptitude	

Full Length Mock GATE - 2nd Series (As per GATE pattern)

Test No	Mock codes		Date of Activation
EC-46	Mock-4	Full Length GATE Mock Test-4	11-09-2019
EC-47	Mock-5	Full Length GATE Mock Test-5	18-09-2019
EC-48	Mock-6	Full Length GATE Mock Test-6	25-09-2019

Multi-Subject wise Grand Tests

Each test carries 50 marks and 90 minutes duration

Test No	Subject Code	Name of the Subject	Date of Activation
EC-49	GNW & GEMT	Networks & Electromagnetics	02-10-2019
EC-50	GCS & GSS	Control Systems & Signals and Systems	
EC-51	GEDC & GAC	Electronic Devices & Analog Circuits	16-10-2019
EC-52	GCMS & GDC	Communications & Digital Circuits	
EC-53	GEM & GGA	Engineering Mathematics & General Aptitude	23-10-2019
EC-54	GCS, GSS, GDC & GAC	Control Systems, Signals and Systems, Digital Circuits & Analog Circuits	
EC-55	GEDC, GNW, GCMS & GEMT	Electronic Devices, Networks, Communications & Electromagnetics	30-10-2019
EC-56	GSS, GAC, GEDC & GCMS	Signals and Systems, Analog Circuits, Electronic Devices & Communications	
EC-57	GCS, GNW, GDC & GEMT	Control Systems, Neworks, Digital Circuits & Electromagnetics	01-11-2019
EC-58	GEM & GGA	Engineering Mathematics & General Aptitude	

Full Length Mock GATE - 3rd Series (As per GATE pattern)

Test No	Mock codes		Date of Activation
EC-59	Mock-7	Full Length GATE Mock Test-7	06-11-2019
EC-60	Mock-8	Full Length GATE Mock Test-8	13-11-2019
EC-61	Mock-9	Full Length GATE Mock Test-9	20-11-2019
EC-62	Mock-10	Full Length GATE Mock Test-10	08-01-2020
EC-63	Mock-11	Full Length GATE Mock Test-11	18-01-2020
EC-64	Mock-12	Full Length GATE Mock Test-12	25-01-2020

Free Practice Tests of GATE-2019 Online Test Series

Topic wise Tests

Each test carries 25 marks and 45 minutes duration

Test No	Topic code	Topic	Date of Activation
EC-P01	GEM – 1 (Engineering Mathematics)	Linear Algebra, Calculus, Differential Equations and Vector Analysis.	02-05-2019
EC-P02	GEM – 2 (Engineering Mathematics)	Complex Anaysis, Numerical Methods and Probability and Statistics.	
EC-P03	GCS – 1 (Control Systems)	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.	
EC-P04	GCS – 2 (Control Systems)	Frequency response; Nyquist stability criteria; Bode Plot, Lag, lead and lag-lead compensation; State variable model and solution of state equation of LTI systems.	
EC-P05	GSS – 1 (Signals and Systems)	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.	
EC-P06	GSS – 2 (Signals and Systems)	Laplace transform, discrete-time Fourier transform (DTFT), DFT, FFT, Z-transform, interpolation of discrete-time signals, poles and zeros, parallel and cascade structure, digital filter design techniques.	
EC-P07	GDC – 1 (Digital Circuits)	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 and PLAs;	
EC-P08	GDC – 2 (Digital Circuits)	Sequential circuits: latches and flip-flops, counters, shift-registers and finite state machines. Data converters: sample and hold circuits, ADCs and DACs;	
EC-P09	GDC – 3 (Digital Circuits)	Semiconductor memories: ROM, SRAM, DRAM, 8-bit microprocessor (8085): architecture, programming, memory and I/O interfacing.	
EC-P10	GNW – 1 (Networks)	Network solution methods: nodal and mesh analysis; Network theorems: superposition, Thevenin and Norton's, maximum power transfer; Wye-Delta transformation	

Test No	Topic code	Topic	Date of Activation
EC-P11	GNW – 2 (Networks)	Steady state sinusoidal analysis using phasors; Time domain analysis of simple linear circuits; Solution of network equations using Laplace transform; Frequency domain analysis of RLC circuits; Linear 2-port network parameters: driving point and transfer functions; State equations for networks.	
EC-P12	GEDC – 1 (Electronic Devices)	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.	
EC-P13	GEDC – 2 (Electronic Devices)	MOS capacitor, MOSFET, LED, photo diode and solar cell; Integrated circuit fabrication process: oxidation, diffusion, ion implantation, photolithography and twin-tub CMOS process.	
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EC-P17	GCMS – 2 (Communications)	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.	02-05-2019
EC-P18	GCMS – 3 (Communications)	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.	
EC-P19	GEMT – 1 (Electromagnetics)	Electrostatics; 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.	
EC-P20	GEMT – 2 (Electromagnetics)	Transmission lines: equations, characteristic impedance, impedance matching, impedance transformation, S-parameters, Smith chart; Waveguides: modes, boundary conditions, cut-off frequencies, dispersion relations; Antennas: antenna types, radiation pattern, gain and directivity, return loss, antenna arrays; Basics of radar; Light propagation in optical fibers.	
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EC-P23	GEM	Engineering Mathematics	02-05-2019
EC-P24	GCS	Control Systems	
EC-P25	GSS	Signals and Systems	
EC-P26	GDC	Digital Circuits	
EC-P27	GNW	Networks	
EC-P28	GEDC	Electronic Devices	
EC-P29	GAC	Analog Circuits	
EC-P30	GCMS	Communications	
EC-P31	GEMT	Electromagnetics	
EC-P32	GGA	General Aptitude	

Multi-Subject wise Grand Tests

Each test carries 50 marks and 90 minutes duration

Test No	Subject Code	Name of the Subject	Date of Activation
EC-P33	GNW & GEMT	Networks & Electromagnetics	02-05-2019
EC-P34	GCS & GSS	Control Systems & Signals and Systems	
EC-P35	GEDC & GAC	Electronic Devices & Analog Circuits	
EC-P36	GCMS & GDC	Communications & Digital Circuits	
EC-P37	GEM & GGA	Engineering Mathematics & General Aptitude	
EC-P38	GCS, GSS, GDC & GAC	Control Systems, Signals and Systems, Digital Circuits & Analog Circuits	
EC-P39	GEDC, GNW, GCMS & GEMT	Electronic Devices, Networks, Communications & Electromagnetics	
EC-P40	GSS, GAC, GEDC & GCMS	Signals and Systems, Analog Circuits, Electronic Devices & Communications	
EC-P41	GCS, GNW, GDC & GEMT	Control Systems, Neworks, Digital Circuits & Electromagnetics	
EC-P42	GEM & GGA	Engineering Mathematics & General Aptitude	

Full Length Mock GATE(As per GATE pattern)			
Test No	**Mock codes**		**Date of Activation**
EC-P43	Mock-1	Full Length GATE Mock Test-1	25-05-2019
EC-P44	Mock-2	Full Length GATE Mock Test-2	
EC-P45	Mock-3	Full Length GATE Mock Test-3	
EC-P46	Mock-4	Full Length GATE Mock Test-4	
EC-P47	Mock-5	Full Length GATE Mock Test-5	
EC-P48	Mock-6	Full Length GATE Mock Test-6	
EC-P49	Mock-7	Full Length GATE Mock Test-7	
EC-P50	Mock-8	Full Length GATE Mock Test-8	
EC-P51	Mock-9	Full Length GATE Mock Test-9	
EC-P52	Mock-10	Full Length GATE Mock Test-10	
EC-P53	Mock-11	Full Length GATE Mock Test-11	
EC-P54	Mock-12	Full Length GATE Mock Test-12	