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

GATE - 2018
ONLINE TEST SERIES

ELECTRICAL ENGINEERING (EE)

No. of Tests : 62

Chapter / Topic wise Tests	20
Subject Wise / Multi Subject Grand Tests	30
Full Length Mock Tests	12

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.

Division of Subjects into Various Topics

Subject & Code	Topic Code	Topic/Chapter
Electrical Circuits **Subject code:GEC**	GEC-1	KCL, KVL, Node and Mesh analysis, Ideal current and voltage sources, Thevenin's theorem, Norton's theorem, Superposition theorem, Maximum power transfer theorem,
	GEC -2	Network graph, Transient response of dc and ac networks, Sinusoidal steady-state analysis, Resonance, Passive filters, Two-port networks, Three phase circuits, Power and power factor in ac circuits.
Electromagnetic Fields **Subject code:GEF**	GEF-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
	GEF-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.
Signals & Systems **Subject code: GSS**	GSS-1	Representation of continuous and discrete-time signals, Shifting and scaling operations, Linear Time Invariant and Causal systems, Fourier series representation of continuous periodic signals, Applications of Fourier Transform,
	GSS-2	Sampling theorem, Laplace Transform and z-Transform.
Electrical Machines **Subject code: GMC**	GMC-1	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.
	GMC-2	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.

Subject & Code	Topic Code	Topic/Chapter
Power Systems **Subject code: GPS**	GPS-1	Power generation concepts, Per-unit quantities, Bus admittance matrix, Gauss-Seidel and Newton-Raphson load flow methods, Voltage and Frequency control, Symmetrical components, Symmetrical and unsymmetrical fault analysis, System stability concepts, Equal area criterion
	GPS-2	Models and performance of transmission lines and cables, Series and shunt compensation, Power factor correction, Electric field distribution and insulators, Distribution systems, ac and dc transmission concepts,Principles of over-current, differential and distance protection; Circuit breakers
Control systems **Subject code: GCS**	GCS-1	Feedback principle, transfer function, Block diagrams and Signal flow graphs, Transient and Steady-state analysis of linear time invariant systems, Routh-Hurwitz, Root loci and Stability analysis
	GCS-2	Mathematical modeling and representation of systems, and Nyquist criteria, Bode plots, Lag, Lead and Lead-Lag compensators; P, PI and PID controllers; State space model, State transition matrix.
Measurements **Subject code: GME**	GME-1	Bridges and Potentiometers, Measurement of voltage, current, power, energy and power factor; Instrument transformers,Error analysis.
	GME-2	Digital voltmeters and multimeters, Phase, Time and Frequency measurement; Oscilloscopes
AnalogElectronics **Subject code:GAE**	GAE-1	Characteristics of diodes, BJT, MOSFET; Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: Biasing, Equivalent circuit and Frequency response,
	GAE-2	Oscillators and Feedback amplifiers; Operational amplifiers: Characteristics and applications; Simple active filters, VCOs and Timers
Digital Electronics **Subject code: GDE**	GDE-1	Combinational and Sequential logic circuits, Multiplexer, Demultiplexer, Schmitt trigger
	GDE-2	Sample and hold circuits, A/D and D/A converters, 8085 Microprocessor: Architecture, Programming and Interfacing.
Power Electronics **Subject code:GPE**	GPE-1	Characteristics of semiconductor power devices: Diode, Thyristor, Triac, GTO, MOSFET, IGBT; Single and three phase configuration of uncontrolled rectifiers, Line commutated thyristor based converters, Issues of line current harmonics, Power factor, Distortion factor of ac to dc converters.
	GPE-2	DC to DC conversion: Buck, Boost and Buck-Boost converters; Bidirectional ac to dc voltage source converters, Single phase and three phase inverters, Sinusoidal pulse width modulation.

Subject & Code	Topic Code	Topic/Chapter
Engineering Mathematics **Subject code:GEM**	GEM-1	Linear Algebra: Matrix Algebra, Systems of linear equations, Eigen values, Eigenvectors. Calculus: Mean value theorems, Theorems of integral calculus, Evaluation of definite and improper integrals, Partial Derivatives, Maxima and minima, Multiple integrals, Fourier series, Vector identities, Directional derivatives, Line integral, Surface integral, Volume integral, Stokes's theorem, Gauss's theorem, Green's theorem. Differential equations: First order equations (linear and nonlinear), Higher order linear differential equations with constant coefficients, Method of variation of parameters, Cauchy's equation, Euler's equation, Initial and boundary value problems, Partial Differential Equations, Method of separation of variables.
	GEM-2	Complex variables: Analytic functions, Cauchy's integral theorem, Cauchy's integral formula, Taylor series, Laurent series, Residue theorem, Solution integrals. Probability and Statistics: Sampling theorems, Conditional probability, Mean, Median, Mode, Standard Deviation, Random variables, Discrete and Continuous distributions, Poisson distribution, Normal distribution, Binomial distribution, Correlation analysis, Regression analysis. NumericalMethods: Solutions of nonlinear algebraic equations, Single and Multi-step methods for differential equations. Transform Theory: Fourier Transform, Laplace Transform, Z-Transform.
General Aptitude **Subject code: GGA**	GVA	English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction
	GNA	Numerical computation, numerical estimation, numerical reasoning and data interpretation.

Topic/Chapter-wise Tests

Each test carries 25 marks and 45 minutes duration

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

Commences from 10th June, 2017 onwards, the detailed test schedule is as follows:

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

Test No	Topic codes	Date of Activation
EE-01	GEC – 1	10.06.2017
EE-02	GEC – 2	13.06.2017
EE-03	GSS-1	16.06.2017
EE-04	GSS-2	19.06.2017
EE-05	GCS-1	22.06.2017
EE-06	GCS-2	25.06.2017
EE-07	GAE-1,GDE-1	28.06.2017
EE-08	GAE-2,GDE-2	01.07.2017
EE-09	GMC-1	04.07.2017
EE-10	GMC-2	07.07.2017
EE-11	GPS-1	11.07.2017
EE-12	GPS-2	14.07.2017
EE-13	GME-1	17.07.2017
EE-14	GME-2	20.07.2017
EE-15	GEF-1	23.07.2017
EE-16	GEF-2	26.07.2017
EE-17	GPE – 1	29.07.2017
EE-18	GPE – 2	01.08.2017
EE-19	GEM – 1 & GVA	04.08.2017
EE-20	GEM – 2 & GNA	07.08.2017

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

Commences from 10th August, 2017 onwards, the detailed test schedule is as follows:

Test No	Subject codes	Date of Activation
EE-21	GEC	10.08.2017
EE-22	GSS	13.08.2017
EE-23	GCS	17.08.2017
EE-24	GDE	20.08.2017
EE-25	GMC	23.08.2017
EE-26	GAE	27.08.2017
EE-27	GME	30.08.2017
EE-28	GEF	02.09.2017
EE-29	GPS	06.09.2017
EE-30	GPE	09.09.2017
EE-31	GEM	11.09.2017
EE-32	GGA	12.09.2017

Full Length Mock GATE -1st Series

As per GATE Pattern

Each test carries 100 marks and 3 hours duration.

Commences from 13th September, 2017 onwards, the detailed test schedule is as follows:

Test No	Mock GATE codes	Date of Activation
EE-33	Mock – 1	13.09.2017
EE-34	Mock – 2	16.09.2017
EE-35	Mock – 3	19.09.2017

Subject-wise Grand Tests- 2ⁿᵈ Series

Each test carries 50 marks and 90 minutes duration.

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

Commences from 22ⁿᵈ September, 2017 onwards, the detailed test schedule is as follows:

Test No	Subject codes	Date of Activation
EE-36	GEC	22.09.2017
EE-37	GSS	25.09.2017
EE-38	GCS	02.10.2017
EE-39	GDE	05.10.2017
EE-40	GMC	08.10.2017
EE-41	GAE	11.10.2017
EE-42	GME	14.10.2017
EE-43	GEF	17.10.2017
EE-44	GPS	21.10.2017
EE-45	GPE	24.10.2017
EE-46	GEM	26.10.2017
EE-47	GGA	27.10.2017

Full Length Mock GATE -2ⁿᵈ Series

As per GATE Pattern

Each test carries 100 marks and 3 hours duration.

Commences from 29ᵗʰ October, 2017 onwards, the detailed test schedule is as follows:

Test No	Mock GATE codes	Date of Activation
EE-48	Mock – 4	29.10.2017
EE-49	Mock – 5	05.11.2017
EE-50	Mock – 6	12.11.2017

Multi Subject Grand Tests

Each test carries 50 marks and 90 minutes duration.

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

Commences from 18th November , 2017 onwards, the detailed test schedule is as follows:

Test No	Subjects Codes	Date of Activation
EE-51	GEC, GEF	18.11.2017
EE-52	GCS, GSS	22.11.2017
EE-53	GPE, GAE	26.11.2017
EE-54	GMC, GDE	01.12.2017
EE-55	GME, GPS	05.12.2017
EE-56	GEM, GGA	10.12.2017

Full Length Mock GATE 3rd Series

As per GATE Pattern

Each test carries 100 marks and 3 hours duration.

Commences from 19th December, 2017 onwards, the detailed test schedule is as follows:

Test No	Mock GATE codes	Date of Activation
EE-57	Mock – 7	19.12.2017
EE-58	Mock – 8	26.12.2017
EE-59	Mock – 9	02.01.2018
EE-60	Mock – 10	10.01.2018
EE-61	Mock – 11	18.01.2018
EE-62	Mock – 12	25.01.2018

NOTE: The Dates of above MOCK GATE Exams may Change according to the GATE – 2018 Exam schedule.