VANI INSTITUTE
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GATE-2024

ONLINE TEST SERIES

SCHEDULE - ELECTRICAL ENGINEERING

Number of Tests

Topic Wise	Subject Wise	Mock Test	MSQ	Total
44	25	12	1	82

TOPIC WISE TESTS

- Each test carries 25 marks and 45 minutes duration
- Test consists of 5 one mark questions and 10 two marks questions

TEST NO	TEST NAME : SYLLABUS	DATE OF ACTIVATION
EE-01	**Basic Level Electric Circuits – 1:** Network graph, KCL, KVL, Node and Mesh analysis, Transient response of dc and ac networks, Sinusoidal steady-state analysis, Resonance, Passive filters, Ideal current and voltage sources	Available Now
EE-02	**Basic Level Electric Circuits – 2:** Thevenin's theorem, Norton's theorem, Superposition theorem, Maximum power transfer theorem, Two-port networks, Three phase circuits, Power and power factor in ac circuits.	Available Now
EE-03	**Basic Level Electromagnetic Fields – 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	Available Now
EE-04	**Basic Level Electromagnetic Fields – 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.	Available Now
EE-05	**Basic Level Signals and Systems – 1:** Representation of continuous and discrete-time signals, Shifting and scaling operations, Linear Time Invariant and Causal systems	Available Now
EE-06	**Basic Level Signals and Systems – 2:** Fourier series representation of continuous periodic signals, Sampling theorem, Applications of Fourier Transform, Laplace Transform and z-Transform.	Available Now
EE-07	**Basic Level Electrical Machines – 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, 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	Available Now
EE-08	**Basic Level Electrical Machines – 2:** 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; 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.	Available Now
EE-09	**Basic Level Power Systems–1:** Power generation concepts, ac and dc transmission concepts, Models and performance of transmission lines and cables, Series and shunt compensation, Electric field distribution and insulators, Distribution systems, Per-unit quantities	Available Now

TEST NO	TEST NAME : SYLLABUS	DATE OF ACTIVATION
EE-10	**Basic Level Power Systems – 2:** Bus admittance matrix, GaussSeidel and Newton-Raphson load flow methods, Voltage and Frequency control, Power factor correction, Symmetrical components, Symmetrical and unsymmetrical fault analysis, Principles of over-current, differential and distance protection; Circuit breakers, System stability concepts, Equal area criterion.	Available Now
EE-11	**Basic Level Control Systems – 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	Available Now
EE-12	**Basic Level Control Systems – 2:** Routh-Hurwitz and Nyquist criteria, Bode plots, Root loci, Stability analysis, Lag, Lead and Lead-Lag compensators; P, PI and PID controllers; State space model, State transition matrix.	Available Now
EE-13	**Basic Level Electrical and Electronic Measurements - 1:** Bridges and Potentiometers, Measurement of voltage, current, power, energy and power factor; Instrument transformers	Available Now
EE-14	**Basic Level Electrical and Electronic Measurements - 2:** Digital voltmeters and multimeters, Phase, Time and Frequency measurement; Oscilloscopes, Error analysis	Available Now
EE-15	**Basic Level Analog and Digital Electronics -1:** Characteristics of diodes, BJT, MOSFET; Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: Biasing, Equivalent circuit and Frequency response; Oscillators and Feedback amplifiers; Operational amplifiers: Characteristics and applications; Simple active filters, VCOs and Timers	Available Now
EE-16	**Basic Level Analog and Digital Electronics - 2:** Combinational and Sequential logic circuits, Multiplexer, Demultiplexer, Schmitt trigger, Sample and hold circuits, A/D and D/A converters, 8085Microprocessor: Architecture, Programming and Interfacing	Available Now
EE-17	**Basic Level Power Electronics - 1:** Combinational and Sequential logic circuits, Multiplexer, Demultiplexer, Schmitt trigger, Sample and hold circuits, A/D and D/A converters, 8085Microprocessor: Architecture, Programming and Interfacing	Available Now
EE-18	**Basic Level Power Electronics - 2:** Single and three phase configuration of uncontrolled rectifiers, Line commutated thyristor based converters, Bidirectional ac to dc voltage source converters, Issues of line current harmonics, Power factor, Distortion factor of ac to dc converters, Single phase and three phase inverters, Sinusoidal pulse width modulation	Available Now
EE-19	**Basic Level Engg. Mathematics - 1:** **Linear Algebra**: Matrix Algebra, Systems of linear equations, Eigenvalues, 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.	Available Now
EE-20	**Basic Level Engg. Mathematics - 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,	Available Now

TEST NO	TEST NAME : SYLLABUS	DATE OF ACTIVATION
	Median, Mode, Standard Deviation, Random variables, Discrete and Continuous distributions, Poisson distribution, Normal distribution, Binomial distribution, Correlation analysis, Regression analysis. **Numerical Methods**: Solutions of nonlinear algebraic equations, Single and Multi-step methods for differential equations. **Transform Theory**: Fourier Transform, Laplace Transform, z-Transform.	
EE-21	**Basic Level General Aptitude - 1:** English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction	Available Now
EE-22	**Basic Level General Aptitude-2:** Numerical computation, numerical estimation, numerical reasoning and data interpretation	Available Now
EE-23	**Advance Level Electric Circuits – 1:** Network graph, KCL, KVL, Node and Mesh analysis, Transient response of dc and ac networks, Sinusoidal steady-state analysis, Resonance, Passive filters, Ideal current and voltage sources	Available Now
EE-24	**Advance Level Electric Circuits – 2:** Thevenin's theorem, Norton's theorem, Superposition theorem, Maximum power transfer theorem, Two-port networks, Three phase circuits, Power and power factor in ac circuits.	Available Now
EE-25	**Advance Level Electromagnetic Fields – 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	Available Now
EE-26	**Advance Level Electromagnetic Fields – 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.	Available Now
EE-27	**Advance Level Signals and Systems – 1:** Representation of continuous and discrete-time signals, Shifting and scaling operations, Linear Time Invariant and Causal systems	Available Now
EE-28	**Advance Level Signals and Systems – 2:** Fourier series representation of continuous periodic signals, Sampling theorem, Applications of Fourier Transform, Laplace Transform and z-Transform	Available Now
EE-29	**Advance Level Electrical Machines – 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, 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	Available Now
EE-30	**Advance Level Electrical Machines – 2:** 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; 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	Available Now
EE-31	**Advance Level Power Systems – 1:** Power generation concepts, ac and dc transmission concepts, Models and performance of transmission lines and cables, Series and shunt compensation, Electric field distribution and insulators, Distribution systems, Per-unit quantities	Available Now

TEST NO	TEST NAME : SYLLABUS	DATE OF ACTIVATION
EE-32	**Advance Level Power Systems – 2:** Bus admittance matrix, GaussSeidel and Newton-Raphson load flow methods, Voltage and Frequency control, Power factor correction, Symmetrical components, Symmetrical and unsymmetrical fault analysis, Principles of over-current, differential and distance protection; Circuit breakers, System stability concepts, Equal area criterion.	Available Now
EE-33	**Advance Level Control Systems – 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	Available Now
EE-34	**Advance Level Control Systems - 2 :** Routh-Hurwitz and Nyquist criteria, Bode plots, Root loci, Stability analysis, Lag, Lead and Lead-Lag compensators; P, PI and PID controllers; State space model, State transition matrix.	Available Now
EE-35	**Advance Level Electrical and Electronic Measurements - 1 :** Bridges and Potentiometers, Measurement of voltage, current, power, energy and power factor; Instrument transformers	Available Now
EE-36	**Advance Level Electrical and Electronic Measurements - 2:** Digital voltmeters and multimeters, Phase, Time and Frequency measurement; Oscilloscopes, Error analysis	Available Now
EE-37	**Advance Level Analog and Digital Electronics - 1:** Characteristics of diodes, BJT, MOSFET; Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: Biasing, Equivalent circuit and Frequency response; Oscillators and Feedback amplifiers; Operational amplifiers: Characteristics and applications; Simple active filters, VCOs and Timers	Available Now
EE-38	**Advance Level Analog and Digital Electronics - 2:** Combinational and Sequential logic circuits, Multiplexer, Demultiplexer, Schmitt trigger, Sample and hold circuits, A/D and D/A converters, 8085Microprocessor: Architecture, Programming and Interfacing	Available Now
EE-39	**Advance Level Power Electronics - 1:** Characteristics of semiconductor power devices: Diode, Thyristor, Triac, GTO, MOSFET, IGBT; DC to DC conversion: Buck, Boost and Buck-Boost converters;	Available Now
EE-40	**Advance Level Power Electronics - 2:** Single and three phase configuration of uncontrolled rectifiers, Line commutated thyristor based converters, Bidirectional ac to dc voltage source converters, Issues of line current harmonics, Power factor, Distortion factor of ac to dc converters, Single phase and three phase inverters, Sinusoidal pulse width modulation.	Available Now
EE-41	**Advance Level Engg. Mathematics - 1:** **Linear Algebra**: Matrix Algebra, Systems of linear equations, Eigenvalues, 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	Available Now

TEST NO	TEST NAME : SYLLABUS	DATE OF ACTIVATION
EE-42	**Advance Level Engg. Mathematics - 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. **Numerical Methods**: Solutions of nonlinear algebraic equations, Single and Multi-step methods for differential equations. **Transform Theory**: Fourier Transform, Laplace Transform, z-Transform.	Available Now
EE-43	**Advance Level General Aptitude -1:** English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction	Available Now
EE-44	**Advance Level General Aptitude-2:** Numerical computation, numerical estimation, numerical reasoning and data interpretation	Available Now

SUBJECT WISE TESTS

- Each test carries 50 marks and 90 minutes duration
- Test consists of 10 one mark questions and 20 two marks questions

TEST NO	TEST NAME : SYLLABUS	DATE OF ACTIVATION
EE-45	**Basic Level Electric Circuits:** Network graph, KCL, KVL, Node- and Mesh analysis, Transient response of dc and ac networks, Sinusoidal steady state analysis, Resonance, Passive filters, Ideal current and voltage sources, Thevenin's theorem,- Norton's theorem, Superposition theorem, Maximum power transfer theorem, Two port networks, Three phase circuits, Power and power factor in ac circuits.	Available Now
EE-46	**Basic Level Electromagnetic Fields:** 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, 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.	Available Now
EE-47	**Basic Level Signals and Systems:** Representation of continuous and discrete-time signals, Shifting and scaling operations, Linear Time Invariant and Causal systems, Fourier series representation of continuous periodic signals, Sampling theorem, Applications of Fourier Transform, Laplace Transform and z-Transform.	Available Now
EE-48	**Basic Level Electrical Machines:** Single phase transformer: equivalent circuit, phasor diagram, open circuit and short circuit tests,-regulation and efficiency; Three phase transformers: connections, parallel operation; Auto transformer, 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; 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; 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.	Available Now
EE-49	**Basic Level Power Systems:** Power generation concepts, ac and dc transmission concepts, Models and performance of transmission lines and cables, Series and- shunt compensation, Electric field distribution and insulators, Distribution systems, Per unit quantities, Bus admittance matrix, Gauss-Seidel and Newton-Raphson load flow methods, Voltage and Frequency control, Power factor correction, Symmetrical- components, Symmetrical and unsymmetrical fault analysis, Principles of over current, differential and distance protection; Circuit breakers, System stability concepts, Equal area criterion.	Available Now
EE-50	**Basic Level Control Systems:** 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, Routh-Hurwitz- and Nyquist criteria, Bode plots, Root loci, Stability analysis, Lag, Lead and Lead Lag compensators; P, PI and PID controllers; State space model, State transition matrix.	Available Now
EE-51	**Basic Level Electrical and Electronic Measurements:** Bridges and Potentiometers, Measurement of voltage, current, power, energy and power factor; Instrument transformers, Digital voltmeters and multimeters, Phase, Time and Frequency measurement; Oscilloscopes, Error analysis.	Available Now
EE-52	**Basic Level Analog and Digital Electronics:** Characteristics of diodes, BJT, MOSFET; Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: Biasing,	Available Now

TEST NO	TEST NAME : SYLLABUS	DATE OF ACTIVATION
	Equivalent circuit and Frequency response; Oscillators and Feedback amplifiers; Operational amplifiers: Characteristics and applications; Simple active filters, VCOs and Timers, Combinational and Sequential logic circuits, Multiplexer, Demultiplexer, Schmitt trigger, Sample and hold circuits, A/D and D/A converters, 8085Microprocessor: Architecture, Programming and Interfacing.	
EE-53	**Basic Level Power Electronics:** Characteristics of semiconductor power devices: Diode, Thyristor, Triac, GTO, MOSFET, IGBT; DC to DC conversion: Buck, Boost and Buck-Boost converters; Single and three phase configuration of uncontrolled rectifiers, Line commutated thyristor based converters, Bidirectional ac to dc voltage source converters, Issues of line current harmonics, Power factor, Distortion factor of ac to dc converters, Single phase and three phase inverters, Sinusoidal pulse width modulation.	Available Now
EE-54	**Basic Level Engg. Mathematics:** **Linear Algebra**: Matrix Algebra, Systems of linear equations, Eigenvalues, 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. **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. **Numerical Methods**: Solutions of nonlinear algebraic equations, Single and Multi-step methods for differential equations. **Transform Theory**: Fourier Transform, Laplace Transform, z-Transform	Available Now
EE-55	**Basic Level General Aptitude:** English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction, Numerical computation, numerical estimation, numerical reasoning and data interpretation	Available Now
EE-56	**Advanced Electric Circuits & Electromagnetic Fields: Electric Circuits :** Network graph, KCL, KVL, Node- and Mesh analysis, Transient response of dc and ac networks, Sinusoidal steady state analysis, Resonance, Passive filters, Ideal current and voltage sources, Thevenin's theorem,- Norton's theorem, Superposition theorem, Maximum power transfer theorem, Two port networks, Three phase circuits, Power and power factor in ac circuits. **Electromagnetic Fields:** 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, 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.	Available Now
EE-57	**Advanced Signals and Systems & Electrical Machines: Signals and Systems:** Representation of continuous and discrete-time signals, Shifting and scaling operations, Linear Time Invariant and Causal systems, Fourier series representation of continuous periodic signals, Sampling theorem, Applications of Fourier Transform, Laplace	Available Now

TEST NO	TEST NAME : SYLLABUS	DATE OF ACTIVATION
	Transform and z-Transform. **Electrical Machines:** Single phase transformer: equivalent circuit, phasor diagram, open circuit and short circuit tests,-regulation and efficiency; Three phase transformers: connections, parallel operation; Auto transformer, 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; 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; 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.	
EE-58	**Advanced Control Systems & Electrical and Electronic Measurements:** **Control Systems:** 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, Routh-Hurwitz- and Nyquist criteria, Bode plots, Root loci, Stability analysis, Lag, Lead and Lead Lag compensators; P, PI and PID controllers; State space model, State transition matrix. **Electrical and Electronic Measurements:** Bridges and Potentiometers, Measurement of voltage, current, power, energy and power factor; Instrument transformers, Digital voltmeters and multimeters, Phase, Time and Frequency measurement; Oscilloscopes, Error analysis.	Available Now
EE-59	**Advanced Power Electronics & Analog and Digital Electronics:** **Power Electronics:** Characteristics of semiconductor power devices: Diode, Thyristor, Triac, GTO, MOSFET, IGBT; DC to DC conversion: Buck, Boost and Buck-Boost converters; Single and three phase configuration of uncontrolled rectifiers, Line commutated thyristor based converters, Bidirectional ac to dc voltage source converters, Issues of line current harmonics, Power factor, Distortion factor of ac to dc converters, Single phase and three phase inverters, Sinusoidal pulse width modulation. **Analog and Digital Electronics:** Characteristics of diodes, BJT, MOSFET; Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: Biasing, Equivalent circuit and Frequency response; Oscillators and Feedback amplifiers; Operational amplifiers: Characteristics and applications; Simple active filters, VCOs and Timers, Combinational and Sequential logic circuits, Multiplexer, Demultiplexer, Schmitt trigger, Sample and hold circuits, A/D and D/A converters, 8085Microprocessor: Architecture, Programming and Interfacing.	Available Now
EE-60	**Advanced Power Systems:** Power generation concepts, ac and dc transmission concepts, Models and performance of transmission lines and cables, Series and- shunt compensation, Electric field distribution and insulators, Distribution systems, Per unit quantities, Bus admittance matrix, Gauss-Seidel and Newton-Raphson load flow methods, Voltage and Frequency control, Power factor correction, Symmetrical- components, Symmetrical and unsymmetrical fault analysis, Principles of over current, differential and distance protection; Circuit breakers, System stability concepts, Equal area criterion.	Available Now
EE-61	**Advanced Engineering Mathematics:** **Linear Algebra**: Matrix Algebra, Systems of linear equations, Eigenvalues, 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	Available Now

TEST NO	TEST NAME : SYLLABUS	DATE OF ACTIVATION
	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. **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. **Numerical Methods**: Solutions of nonlinear algebraic equations, Single and Multi-step methods for differential equations. **Transform Theory**: Fourier Transform, Laplace Transform, z-Transform	
EE-62	**Advanced General Aptitude:** English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction, Numerical computation, numerical estimation, numerical reasoning and data interpretation.	Available Now
EE-63	**Electric Circuits & Electromagnetic Fields:** **Electric Circuits :** Network graph, KCL, KVL, Node- and Mesh analysis, Transient response of dc and ac networks, Sinusoidal steady state analysis, Resonance, Passive filters, Ideal current and voltage sources, Thevenin's theorem,- Norton's theorem, Superposition theorem, Maximum power transfer theorem, Two port networks, Three phase circuits, Power and power factor in ac circuits. **Electromagnetic Fields:** 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, 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	Available Now
EE-64	**Signals and Systems & Electrical Machines:** **Signals and Systems:** Representation of continuous and discrete-time signals, Shifting and scaling operations, Linear Time Invariant and Causal systems, Fourier series representation of continuous periodic signals, Sampling theorem, Applications of Fourier Transform, Laplace Transform and z-Transform. **Electrical Machines:** Single phase transformer: equivalent circuit, phasor diagram, open circuit and short circuit tests,-regulation and efficiency; Three phase transformers: connections, parallel operation; Auto transformer, 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; 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; 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.	Available Now
EE-65	**Control Systems & Electrical and Electronic Measurements:** **Control Systems:** 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, Routh-Hurwitz- and Nyquist criteria, Bode plots, Root loci, Stability analysis, Lag, Lead and Lead Lag compensators; P, PI and PID controllers; State space model, State transition matrix.	Available Now

TEST NO	TEST NAME : SYLLABUS	DATE OF ACTIVATION
	Electrical and Electronic Measurements: Bridges and Potentiometers, Measurement of voltage, current, power, energy and power factor; Instrument transformers, Digital voltmeters and multimeters, Phase, Time and Frequency measurement; Oscilloscopes, Error analysis.	
EE-66	**Power Electronics & Analog and Digital Electronics:** **Power Electronics:** Characteristics of semiconductor power devices: Diode, Thyristor, Triac, GTO, MOSFET, IGBT; DC to DC conversion: Buck, Boost and Buck-Boost converters; Single and three phase configuration of uncontrolled rectifiers, Line commutated thyristor based converters, Bidirectional ac to dc voltage source converters, Issues of line current harmonics, Power factor, Distortion factor of ac to dc converters, Single phase and three phase inverters, Sinusoidal pulse width modulation. **Analog and Digital Electronics:** Characteristics of diodes, BJT, MOSFET; Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: Biasing, Equivalent circuit and Frequency response; Oscillators and Feedback amplifiers; Operational amplifiers: Characteristics and applications; Simple active filters, VCOs and Timers, Combinational and Sequential logic circuits, Multiplexer, Demultiplexer, Schmitt trigger, Sample and hold circuits, A/D and D/A converters, 8085Microprocessor: Architecture, Programming and Interfacing.	Available Now
EE-67	**Power Systems:** Power generation concepts, ac and dc transmission concepts, Models and performance of transmission lines and cables, Series and- shunt compensation, Electric field distribution and insulators, Distribution systems, Per unit quantities, Bus admittance matrix, Gauss-Seidel and Newton-Raphson load flow methods, Voltage and Frequency control, Power factor correction, Symmetrical- components, Symmetrical and unsymmetrical fault analysis, Principles of over current, differential and distance protection; Circuit breakers, System stability concepts, Equal area criterion.	Available Now
EE-68	**Engineering Mathematics:** **Linear Algebra**: Matrix Algebra, Systems of linear equations, Eigenvalues, 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. **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. **Numerical Methods**: Solutions of nonlinear algebraic equations, Single and Multi-step methods for differential equations. **Transform Theory**: Fourier Transform, Laplace Transform, z-Transform	Available Now
EE-69	**General Aptitude:** English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction, Numerical computation, numerical estimation, numerical reasoning and data interpretation.	Available Now

MOCK TESTS

- Each test carries 100 marks and 3 hours duration

TEST NO	TEST NAME	DATE OF ACTIVATION
EE-70	Full Syllabus Test-1 (Basic Level)	Available Now
EE-71	Full Syllabus Test-2 (Basic Level)	Available Now
EE-72	Full Syllabus Test-3 (Basic Level)	Available Now
EE-73	Full Syllabus Test-1 (Advance Level)	Available Now
EE-74	Full Syllabus Test-2 (Advance Level)	Available Now
EE-75	Full Syllabus Test-3 (Advance Level)	Available Now
EE-76	GATE MOCK TEST-1	Available Now
EE-77	GATE MOCK TEST-2	Available Now
EE-78	GATE MOCK TEST-3	Available Now
EE-79	GATE MOCK TEST -4	Available Now
EE-80	GATE MOCK TEST-5	Available Now
EE-81	GATE MOCK TEST-6	Available Now

MSQ TYPE TESTS (Subject Wise)

- Each test carries 40 marks and 60 Minutes duration

TEST NO	TEST NAME	DATE OF ACTIVATION
EE-82	General Aptitude	Available Now