TGTRANSCO

TRANSMISSION CORPORATION OF TELANGANA LIMITED ASSISTANT ENGINEER

Online Test Series

Electrical Engineering - Schedule

No.of Tests : 16 + 14 *free* practice tests		
	TGTRANSCO-AE-2024	**Practice Tests**
Subject Wise Tests	13	11
Full Length Mock Tests	3	3
Total Tests - 30		

Note:

❖ The Syllabus considered as per previous Notification of TGTRANSCO. ACE Engineering Academy does not take any responsibility for deviations in syllabus in the final TSSPDCL exam. As per Notification of TGTRANSCO each question carries '1' marks.

❖ The Dates of above Mock Tests may Change according to the TGTRANSCO Exam schedule.

❖ Tests will be activated at 6:00 pm on scheduled day.

❖ All tests will be Active upto TGTRANSCO Examination.

❖ Test series available in ENGLISH medium only.

Subject wise Tests
(No.of Questions: 30, Time duration: 36 Minutes and Marks: 30 M)

Test No	Name of the Subject	Date of Activation
Test-01	Engineering Mathematics	15-12-2024
Test-02	Electric Circuits	19-12-2024
Test-03	Control Systems	23-12-2024
Test-04	Signals and Systems	27-12-2024
Test-05	Electrical Machines	31-12-2024
Test-06	Power Systems	04-01-2025
Test-07	Electromagnetic Fields	08-01-2025
Test-08	Electrical and Electronic Measurements	12-01-2025
Test-09	Analog and Digital Electronics	16-01-2025
Test-10	Power Electronics	20-01-2025
Test-11	**General Awareness and Numerical Ability :** i) Analytical & Numerical Ability ii) English	24-01-2025
Test-12	**General Awareness and Numerical Ability :** Related to Telangana Culture & Movement	28-01-2025
Test-13	**General Awareness and Numerical Ability :** i) General Awareness ii) Computer Knowledge	01-02-2025

Full Length Mock Test
(No.of Questions: 100, Time duration: 120Minutesand Marks: 100 M)

Test No	Name of the Mock	Date of Activation
Test-14	Full Length Mock Test-1	07-02-2025
Test-15	Full Length Mock Test-2	13-02-2025
Test-16	Full Length Mock Test-3	19-02-2025

Free Practice Tests

Subject wise Tests
(No.of Questions: 30, Time duration: 36 Minutes and Marks: 30 M)

Test No	Name of the Subject	Date of Activation
Test-01	Engineering Mathematics	
Test-02	Electric Circuits	
Test-03	Control Systems	
Test-04	Signals and Systems	
Test-05	Electrical Machines	
Test-06	Power Systems	**10-12-2024**
Test-07	Electromagnetic Fields	
Test-08	Electrical and Electronic Measurements	
Test-09	Analog and Digital Electronics	
Test-10	Power Electronics	
Test-11	General Awareness and Numerical Ability	

Full Length Mock Test
(No.of Questions: 100, Time duration: 120Minutesand Marks: 100 M)

Test No	Name of the Mock	Date of Activation
Test-12	Full Length Mock Test-1	
Test-13	Full Length Mock Test-2	**13-12-2024**
Test-14	Full Length Mock Test-3	

Syllabus

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.

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.

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.

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.

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.

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.

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.

General Awareness and Numerical Ability :
1) Analytical & Numerical Ability
2) English
3) Related to Telangana Culture & Movement
4) General Awareness
5) Computer Knowledge