



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

TSNPDCL

**Northern Power Distribution Company of Telangana
Ltd**

ASSISTANT ENGINEER

Online Test Series

Electrical Engineering - Schedule

No.of Tests : 16	
Subject Wise Tests	13
Full Length Mock Tests	3

Note:

- ❖ The Syllabus considered as per Notification of TSNPDCL. ACE Engineering Academy does not take any responsibility for deviations in syllabus in the final TSNPDCL exam. As per Notification of TSNPDCL each question carries '1' marks.
- ❖ Tests will be activated at 6:00 pm on scheduled day.
- ❖ All tests will be Active upto TSNPDCL Examination.

Subject wise Tests

(No. of Questions: 30, Time duration: 36 Minutes)

Test No	Name of the Subject	Max Marks	Date of Activation
Test-01	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.	30	24-05-2022
Test-02	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.	30	27-05-2022
Test-03	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.	30	30-05-2022
Test-04	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.	30	02-06-2022
Test-05	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.	30	05-06-2022
Test-06	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.	30	08-06-2022
Test-07	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.	30	11-06-2022
Test-08	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.	30	14-06-2022
Test-09	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, 8085 Microprocessor: Architecture, Programming and Interfacing.	30	17-06-2022

Test-10	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.	30	20-06-2022
Test-11	General Awareness and Numerical Ability : i) Analytical & Numerical Ability ii) English	30	22-06-2022
Test-12	General Awareness and Numerical Ability : Related to Telangana Culture & Movement	30	24-06-2022
Test-13	General Awareness and Numerical Ability : i) General Awareness ii) Computer Knowledge	30	26-06-2022

Full Length Mock Test

(No. of Questions: 100, Time duration: 120Minutes)

Test No	Name of the Mock	Max Marks	Date of Activation
Test-14	Full Length Mock Test-1	100	28-06-2022
Test-15	Full Length Mock Test-2	100	04-07-2022
Test-16	Full Length Mock Test-3	100	11-07-2022