TSGENCO AE Syllabus 2024

Candidates should review the TSGENCO AE Syllabus to ensure they are familiar with all of the exam's key topics. To meet the TSGENCO AE cut-off marks set by the board for the written test, students should dedicate equal attention to all topics. The department has yet to issue a complete syllabus for the exam. For the convenience of candidates, we have included the expected TSGENCO AE syllabus below.

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TSGENCO AE Syllabus for Electrical Engineering

Subject	Topics	Subtopics
Electrical Engineering Materials	Electrical Engineering Materials	Crystal structures and defects, ceramic materials, insulating materials, magnetic materials– basics, properties and applications, ferrites, ferro-magnetic materials and components, basics of solid state physics, conductors, photo-conductivity, basics of nano materials and superconductors
Electric Circuits and Fields	Circuit elements	Network graph, KCL, KVL, Node and Mesh analysis, ideal current and voltage sources, Thevenin's, Norton's, Superposition and Maximum Power Transfer theorems, transient response of DC and AC networks, Sinusoidal steady state analysis, basic filter concepts, two-port networks, three-phase circuits, resonance, magnetically coupled circuits
	Electric fields and potentials	Gauss Theorem, electric field and potential due to point, line, plane and spherical charge distributions, Ampere's and Biot-Savart's laws, inductance, dielectrics, capacitance, Maxwell's equations
Electrical and Electronics Measurements	Principles of measurement	Accuracy, precision and standards, bridges and potentiometers, moving coil, moving iron, dynamometer and induction type instruments, measurement of voltage, current, power, energy and power factor, instrument transformers, digital voltmeters and multi-meters, phase, time and frequency measurement, Q-meters, oscilloscopes, potentiometric recorders, error analysis, basics of sensors, transducers, basics of data acquisition systems

Analog and Digital Electronics	Operational amplifiers	Characteristics and applications, combinational and sequential logic circuits, multiplexers, multi-vibrators, sample and hold circuits, A/D and D/A converters, basics of filter circuits and applications, simple active filters
	Microprocessor basics	Interfaces and applications, basics of linear integrated circuits
	Analog communication basics	Modulation and de-modulation, noise and bandwidth, transmitters and receivers, signal to noise ratio
	Digital communication basics	Sampling, quantizing, coding, frequency and time domain multiplexing, power line carrier communication systems
Systems and Signal Processing	Representation of signals	Continuous and discrete-time signals, shifting and scaling operations, linear, time-invariant and causal systems, Fourier series representation of continuous periodic signals
	Transforms and filters	Sampling theorem, Fourier and Laplace transforms, Z transforms, Discrete Fourier transform, FFT, linear convolution, discrete cosine transform, FIR filter, IIR filter, bilinear transformation
Control Systems	Modeling of physical systems	Principles of feedback, transfer function, block diagrams and signal flow graphs, steady-state errors, transforms and their applications, Routh-hurwitz criterion, Nyquist techniques, Bode plots, root loci, lag, lead and lead-lag compensation, stability analysis, transient and frequency response analysis, state space model, state transition matrix, controllability and observability, linear state variable feedback, PID and industrial controllers
Electrical Machines	Transformers	Single phase transformers, three phase transformers - connections, parallel operation, auto-transformer

	Energy conversion principles	DC machines - types, windings, generator characteristics, armature reaction and commutation, methods of excitation, starting and speed control of motors
	Induction motors	Principles, types, performance characteristics, starting and speed control
	Synchronous machines	Performance, regulation, parallel operation of generators, motor starting, characteristics and applications, servo and stepper motors
Power Systems	Transmission concepts	AC and DC transmission concepts, transmission line models and performance, cable performance, insulation, corona and radio interference, power factor correction, Per unit quantities, symmetrical components, analysis of symmetrical and unsymmetrical faults
	Switchgear Protection	Principles of over current, differential and distance protections, various types of circuit breakers and their functions, Relays, Protection for Generator, Transformers, feeder and Bus bars, Grounding, Protection against Over Voltages
	Distribution systems	Functions of Radial and ring-main distribution systems, concept of power system stability, swing curves and equal area criterion
	Power System Operation & Control	Matrix representation of power systems, load flow analysis, voltage control and economic operation, HVDC transmission and FACTS concepts, Concepts of power system dynamics, smart grid concepts, batteries and battery chargers
Power Plant Engineering	Power generation concepts	Basic power generation concepts, Steam Power Plants with Sub-critical, critical and super critical technology, Combustion Process, Gas Turbine Plant, Direct Energy Conservation, Hydro Electric Power Plant, nuclear & Power from Non-conventional sources, Introduction to Quality management and Environmental protection

	Power plant economics	Capital cost, Investment of fixed charges, operating cost, arrangements for power distribution, load curves, connected load, maximum demand, demand factor, average load, load factor, diversity factor
	Environmental considerations	Effluents from Power Plants and impact of environment, Pollution and pollution standards- Methods of pollution control, Power plant components-their theory and design, types and applications
Power Electronics and Drives	Semiconductor devices	Basics of Semiconductor diodes and transistors and characteristics, Junction and field effect transistors (BJT, FET and MOSFETS), Triacs, GTOs and IGBTs - static characteristics and principles of operation, triggering circuits, phase control rectifiers, bridge converters - fully controlled and half controlled
	Power converters	Principles of choppers and inverters, basic concepts of adjustable speed DC and AC drives, DC-DC switched mode converters, DC-AC switched mode converters, resonant converters, high frequency inductors and transformers, power supplies
Thermodynamics	Thermodynamic systems and processes	Properties of pure substance, Zeroth, First and Second Laws of Thermodynamics, Entropy, Irreversibility and availability, analysis of thermodynamic cycles related to energy conversion: Rankine, modified Rankine, Otto, Diesel and Dual Cycles, ideal and real gases, compressibility factor, Gas mixtures
Heat-Transfer	Modes of heat transfer	One dimensional heat conduction, resistance concept and electrical analogy, heat transfer through fins, unsteady heat conduction, lumped parameter system, Heisler's charts, thermal boundary layer, dimensionless parameters in free and forced convective heat transfer, heat transfer correlations for flow over flat plates and through pipes, effect of turbulence, heat exchanger performance, LMTD and NTU methods, radiative heat transfer, Stefan-Boltzmann law, Wien's displacement law, black and grey surfaces, view factors, radiation network analysis

TSGENCO AE Syllabus for Mechanical Engineering

Subject	Topics	Subtopics
Engineering Mechanics	Free-body diagrams and equilibrium	Friction and its applications, rolling friction, belt-pulley, brakes, clutches, screw jack, wedge, vehicles, trusses and frames, virtual work, kinematics and dynamics of rigid bodies in plane motion, impulse and momentum (linear and angular), energy formulations, Lagrange's equation
Mechanics of Materials	Stress and strain	Elastic constants, Poisson's ratio, Mohr's circle for plane stress and plane strain, thin cylinders, shear force and bending moment diagrams, bending and shear stresses, concept of shear centre, deflection of beams, torsion of circular shafts, Euler's theory of columns, energy methods, thermal stresses, strain gauges and rosettes, testing of materials with universal testing machine, testing of hardness and impact strength
Theory of Machines	Analysis of mechanisms	Displacement, velocity and acceleration analysis of plane mechanisms, dynamic analysis of linkages, cams, gears and gear trains, flywheels and governors, balancing of reciprocating and rotating masses, gyroscope
Vibrations	Single degree of freedom systems	Free and forced vibration, effect of damping, vibration isolation, resonance, critical speeds of shafts
Thermodynamics	Thermodynamic systems and processes	Properties of pure substance, Zeroth, First and Second Laws of Thermodynamics, Entropy, Irreversibility and availability, analysis of thermodynamic cycles related to energy conversion: Rankine, modified Rankine, Otto, Diesel and Dual Cycles, ideal and real gases, compressibility factor, Gas mixtures
Fluid Mechanics	Fluid properties	Fluid statics, forces on submerged bodies, stability of floating bodies, control-volume analysis of mass, momentum and energy, fluid acceleration, differential equations of continuity and momentum, Bernoulli's equation, dimensional analysis, viscous flow of incompressible fluids, boundary layer, elementary turbulent flow, flow through pipes, head losses in pipes, bends and fittings, basics of compressible fluid flow
Heat-Transfer	Modes of heat transfer	One dimensional heat conduction, resistance concept and electrical analogy, heat transfer through fins, unsteady heat conduction, lumped parameter system, Heisler's charts, thermal boundary layer, dimensionless parameters in free and forced convective heat transfer, heat transfer correlations for flow over flat plates and through pipes, effect of turbulence, heat exchanger performance, LMTD and NTU methods, radiative heat transfer, Stefan-Boltzmann law, Wien's displacement law, black and grey surfaces, view factors, radiation network analysis
Engineering Materials	Structure and properties	Phase diagrams, heat treatment, stress-strain diagrams for engineering materials
Casting, Forming and Joining Processes	Different types of castings	Design of patterns, moulds and cores, solidification and cooling, riser and gating design, plastic deformation and yield criteria, fundamentals of hot and cold working processes, load estimation for bulk (forging, rolling, extrusion, drawing) and sheet (shearing, deep drawing, bending) metal forming processes, principles of powder

		metallurgy, principles of welding, brazing, soldering and adhesive bonding
Machining and Machine Tool Operations	Mechanics of machining	Basic machine tools, single and multi-point cutting tools, tool geometry and materials, tool life and wear, economics of machining, principles of non-traditional machining processes, principles of work holding, jigs and fixtures, abrasive machining processes, NC/CNC machines and CNC programming
Metrology and Inspection	Limits, fits and tolerances	Linear and angular measurements, comparators, interferometry, form and finish measurement, alignment and testing methods, tolerance analysis in manufacturing and assembly, concepts of coordinate-measuring machine (CMM)
Computer Integrated Manufacturing	Basic concepts of CAD/CAM	Integration tools, additive manufacturing
Production Planning and Control	Forecasting models	Aggregate production planning, scheduling, materials requirement planning, lean manufacturing
Inventory Control	Deterministic models	Safety stock inventory control systems
Operations Research	Linear programming	Simplex method, transportation, assignment, network flow models, simple queuing models, PERT and CPM
IC Engines, Refrigeration and Air conditioning	SI and CI Engines	Engine Systems and Components, Performance characteristics and testing of IC Engines, Fuels, Emissions and Emission Control, Vapour compression refrigeration, Refrigerants and Working cycles, Compressors, Condensers, Evaporators and Expansion devices, other types of refrigeration systems like Vapour Absorption, Vapour jet, thermoelectric and Vortex tube refrigeration, Psychometric properties and processes, Comfort chart, Comfort and industrial air conditioning, Load calculations and Heat pumps
Power Plant Engineering	Power generation concepts	Basic power generation concepts, Steam Power Plants with Sub-critical, critical and super critical technology, Combustion Process, Gas Turbine Plant, Direct Energy Conservation, Hydro Electric Power Plant, nuclear & Power from Non-conventional sources, Power plant economics-Capital cost, Investment of fixed charges, operating cost, arrangements for power distribution, load curves, connected load, maximum demand, demand factor, average load, load factor, diversity factor, Environmental considerations- Effluents from Power Plants and impact of environment, Pollution and pollution standards-Methods of pollution control, Power plant components-their theory and design, types and applications
Design of Machine Elements	Design for static and dynamic loading	Failure theories, fatigue strength and the S-N diagram, principles of the design of machine elements such as riveted, welded and bolted joints, Shafts, Spur gears, rolling and sliding contact bearings, Brakes and clutches, flywheels

	Electrical Circuits	Basics, Ohm's Law, Kirchhoff's Law, Inductive & Capacitive Networks, Series & Parallel Circuits, Star & Delta Transformers
	Instruments	Basic Principles of indicating instruments, PMMC & Moving Iron Instruments
	DC Machines	DC Generator, DC motors and their applications
	Transformers	Operation, EMF Equation, Losses, efficiency & Regulation
	AC Machines	Operation of Synchronous and Induction motors, their Characteristics & applications
Basic Electrical Engineering	Batteries	Basics of batteries and their uses

TSGENCO AE Syllabus for Electronics and Communication

Subject	Topics	Subtopics
Networks, Signals and Systems	Circuit analysis	KCL, KVL, Node and mesh analysis, superposition, Thevenin's theorem, Norton's theorem, reciprocity
	Sinusoidal steady state analysis	Phasors, complex power, maximum power transfer
	Time and frequency domain analysis	Linear circuits: RL, RC and RLC circuits, solution of network equations using Laplace transform
	Linear 2-port network parameters	Wye-delta transformation
	Continuous-time signals	Fourier series and Fourier transform, sampling theorem and applications
	Discrete-time signals	DTFT, DFT, z-transform, discrete-time processing of continuous-time signals
	LTI systems	Definition and properties, causality, stability, impulse response, convolution, poles and zeroes, frequency response, group delay, phase delay

Electronic Devices	Semiconductors	Energy bands in intrinsic and extrinsic semiconductors, equilibrium carrier concentration, direct and indirect band-gap semiconductors
	Carrier transport	Diffusion current, drift current, mobility and resistivity, generation and recombination of carriers, Poisson and continuity equations
	Semiconductor devices	P-N junction, Zener diode, BJT, MOS capacitor, MOSFET, LED, solar cell, Laser, photo diode, photoresistor and their characteristics, Basics of Fiber Optics
Analog Circuits	Diode circuits	Clipping, clamping and rectifiers
	Amplifiers	BJT and MOSFET amplifiers: biasing, ac coupling, small signal analysis, frequency response; Current mirrors and differential amplifiers
	Op-amp circuits	Amplifiers, summers, differentiators, integrators, active filters, Schmitt triggers and oscillators
Digital Circuits	Number representations	Binary, integer and floating-point numbers
	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
	Sequential circuits	Latches and flip-flops, counters, shift-registers, finite state machines, propagation delay, setup and hold time, critical path delay
	Data converters	Sample and hold circuits, ADCs and DACs
	Semiconductor memories	ROM, SRAM, DRAM
	Computer organization	Machine instructions and addressing modes, ALU, data-path and control unit, instruction pipelining

	Microprocessor and Microcontroller	8086/8088 and 8051
Control Systems	Basic control system components	Feedback principle, Transfer function, Block diagram representation, Signal flow graph
	Analysis of LTI systems	Transient and steady-state analysis, Frequency response, Routh-Hurwitz and Nyquist stability criteria, Bode and root-locus plots, Lag, lead and lag-lead compensation
	State variable model	Solution of state equation of LTI systems
Communications	Random processes	Autocorrelation and power spectral density, properties of white noise, filtering of random signals through LTI systems
	Analog communications	Amplitude modulation and demodulation, angle modulation and demodulation, spectra of AM and FM, super heterodyne receivers
	Information theory	Entropy, mutual information and channel capacity theorem
	Digital communications	PCM, DPCM, digital modulation schemes (ASK, PSK, FSK, QAM), bandwidth, inter-symbol interference, MAP, ML detection, matched filter receiver, SNR and BER, Fundamentals of error correction, Hamming codes, CRC
Electromagnetics	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

	Transmission lines	Equations, characteristic impedance, impedance matching, impedance transformation, S-parameters, Smith chart
	Waveguides and antennas	Rectangular and circular waveguides, light propagation in optical fibers, dipole and monopole antennas, linear antenna arrays
Basic Electrical Engineering	Electro-magnetism	Faraday's & Lenz's laws, induced EMF and its uses
	AC circuits	Single-phase AC circuits
	Transformers	Efficiency
	Electrical machines	Basics-DC machines, induction machines, and synchronous machines
	Batteries	Basics of batteries and their uses
Materials Science	Electrical Engineering materials	Crystal structure & defects, Ceramic materials-structures, composites, processing and uses, Insulating laminates for electronics, structures, properties and uses, Magnetic materials, basics, classification, ferrites, ferro/para-magnetic materials and components, Nano materials-basics, preparation, purification, sintering, nano particles and uses, Nano-optical/magnetic/electronic materials and uses, Superconductivity, uses

Power Plant Engineering	Power generation concepts	Basic power generation concepts, Steam Power Plants with Sub-critical, critical and super critical technology, Combustion Process, Gas Turbine Plant, Direct Energy Conservation, Hydro Electric Power Plant, nuclear & Power from Non-conventional sources, Power plant economics-Capital cost, Investment of fixed charges, operating cost, arrangements for power distribution, load curves, connected load, maximum demand, demand factor, average load, load factor, diversity factor, Environmental considerations- Effluents from Power Plants and impact of environment, Pollution and pollution standards-Methods of pollution control, Power plant components-their theory and design, types and applications
Electrical & Electronic Measurements	Measurement systems	Static and dynamic characteristics of Measurement Systems, Error and uncertainty analysis, Statistical analysis of data and curve fitting
	Electrical measurements	Bridges and potentiometers, measurement of R, L and C, Measurements of voltage, current, power, power factor and energy, A.C & D.C current probes, Extension of instrument ranges, Q-meter and waveform analyzer, Digital voltmeter and multi meter, Time, phase and frequency measurements, Cathode Ray Oscilloscope
	Communication and grounding	Serial and parallel communication, Shielding and grounding
	Transducers	Applications to the measurement of non-electrical quantities like temperature, pressure, strain, displacement liquid level, Measurement of pH, conductivity, viscosity and humidity

TSGENCO AE Syllabus for Civil Engineering

Subject	Topics	Subtopics
Engineering Mechanics	System of forces	Free-body diagrams, equilibrium equations
	Internal forces in structures	Friction and its applications, Centre of mass, Free Vibrations of undamped SDOF system
Solid Mechanics	Statically determinate beams	Bending moment and shear force

	Simple stress and strain relationships	Simple bending theory, flexural and shear stresses, shear centre
	Uniform torsion	Transformation of stress, buckling of column, combined and direct bending stresses
Structural Analysis	Determinate and indeterminate structures	Statically determinate and indeterminate structures by force/energy methods, Method of superposition, Analysis of trusses, arches, beams, cables and frames
	Displacement methods	Slope deflection and moment distribution methods
	Influence lines	Stiffness and flexibility methods of structural analysis
Building Materials & Construction Management	Building materials	Stone, Lime, Glass, Plastics, Steel, FRP, Ceramics, Aluminum, Fly Ash, Basic Admixtures, Timber, Bricks and Aggregates: Classification, properties and selection criteria; Cement: Types, Composition, Properties, Uses, Specifications and various Tests; Lime & Cement Mortars and Concrete: Properties and various Tests; Design of Concrete Mixes: Proportioning of aggregates and methods of mix design
	Construction management	Types of construction projects; Project planning and network analysis - PERT and CPM; Cost estimation
Fluid Mechanics, Open Channel Flow, Pipe Flow	Fluid properties	Dimensional Analysis and Modeling; Fluid dynamics including flow kinematics and measurements, CFD Analysis, orifices and mouthpieces, notches and weirs, impact of jets
	Flow net	Viscosity, Boundary layer and control, Drag, Lift, Principles in open channel flow, Flow Patterns, Flow controls, Hydraulic jump; Surges; Pipe networks
Hydraulic Machines and Hydropower	Various pumps	Air vessels, Hydraulic turbines – types, classifications & performance parameters; Power house – classification and layout, storage, pondage, control of supply
Hydrology and Water Resources Engineering	Hydrological cycle	Ground water hydrology, Well hydrology and related data analysis; Streams and their gauging; River morphology; Flood, drought and their management; Capacity of Reservoirs
	Water resources engineering	Multipurpose uses of Water, River basins and their potential; Irrigation systems, water demand assessment; Resources - storages and their yields; Water logging, canal and drainage design, Gravity dams, falls, weirs, Energy dissipaters, barrage Distribution works, Cross drainage works and head-works and their design; Concepts in canal design, construction & maintenance; River training, measurement and analysis of rainfall
Water Supply Engineering	Water sources	Estimation, quality standards and testing of water and their treatment; Rural, Institutional and industrial water supply
	Water characteristics	Physical, chemical and biological characteristics and sources of water, Pollutants in water and its effects
	Water demand and treatment	Estimation of water demand; Drinking water Standards, Water Treatment Plants, Water distribution networks

Waste Water Engineering	Wastewater planning and design	Planning & design of domestic waste water, sewage collection and disposal; Plumbing Systems; Components and layout of sewerage system
	Domestic waste-water disposal	Planning & design of Domestic Waste-water disposal system; Sludge management including treatment, disposal and re-use of treated effluents; Industrial waste waters and Effluent Treatment Plants including institutional and industrial sewage management
Solid Waste Management	Solid waste sources and classification	Planning & design of its management system; Disposal system, Beneficial aspects of wastes and Utilization by Civil Engineers
Air Pollution	Pollutants and their sources	Types of pollutants, their sources and impacts, air pollution control, air quality standards, Air quality Index and limits
Geo-technical Engineering	Soil exploration	Planning & methods, Properties of soil, classification, various tests and inter-relationships; Permeability, Capillarity & Seepage, Compressibility, consolidation and Shearing resistance, Earth pressure theories and stress distribution in soil, Properties and uses of geo-synthetics
Foundation Engineering	Foundation types	Types of foundations & selection criteria, bearing capacity, settlement analysis, design and testing of shallow & deep foundations; Slope stability analysis, Earthen embankments, Dams and Earth retaining structures: types, analysis and design, Principles of ground modifications
Surveying	Survey classification and methodologies	Classification of surveys, various methodologies, instruments & analysis of measurement of distances, elevation and directions
	Field astronomy and GPS	Global Positioning System; Map preparation; Photogrammetry; Remote sensing concepts
	Survey Layout	Survey Layout for culverts, canals, bridges, road/railway alignment and buildings, Setting out of Curves
Transportation Engineering	Highways	Planning & construction methodology, Alignment and geometric design; Traffic Surveys and Controls; Principles of Flexible and Rigid pavements design
	Tunneling	Alignment, methods of construction, disposal of muck, drainage, lighting and ventilation
	Railway systems	Terminology, Planning, designs and maintenance practices; track modernization
	Harbors	Terminology, layouts and planning
Design of Steel Structures	Working stress methods	Design of tension and compression members, Design of beams and beam column connections, built-up sections, Girders, Industrial roofs, Riveted and welded joints, Principles of Ultimate load design
Design of Concrete and Masonry Structures	Limit state design	Limit state design for bending, shear, axial compression and combined forces; Design of beams, Slabs, Lintels, Foundations, Retaining walls, Tanks, Staircases; Principles of pre-stressed concrete design including materials and methods; Earthquake resistant design of structures; Design of Masonry Structure

	Power generation concepts	Basic power generation concepts, Steam Power Plants with Sub-critical, critical and supercritical technology, Combustion Process, Gas Turbine Plant, Direct Energy Conservation, HydroElectric Power Plant, nuclear & Power from Non-conventional sources
	Power plant economics	Power plant economics-Capital cost, Investment of fixed charges, operating cost, arrangements for power distribution, load curves, connected load, maximum demand, demand factor, average load, load factor, diversity factor
Power Plant Engineering	Environmental considerations	Environmental considerations- Effluents from Power Plants and impact of environment, Pollution and pollution standards-Methods of pollution control, Power plant components-their theory and design, types and applications, Basics of batteries and their uses

TSGENCO AE Syllabus for General Awareness & Numerical Ability

Subject	Topics	Subtopics
Analytical & Numerical Ability	Arithmetic	Number systems, fractions, decimals, percentages, ratio and proportion, average, simple and compound interest, profit and loss, time and work, time and distance
	Algebra	Algebraic expressions, equations, inequalities, quadratic equations
	Geometry	Basic geometric shapes, properties, theorems, coordinate geometry
	Mensuration	Area and perimeter of plane figures, volume and surface area of solids
	Data interpretation	Graphs, charts, tables
General Awareness	Current Affairs	National and international events, sports, awards, summits, new appointments
	History	Indian history, Telangana history
	Geography	Indian geography, world geography, Telangana geography
	Polity	Indian constitution, political system, governance, public policies
	Economy	Indian economy, Telangana economy, budget, economic planning
	Science and Technology	General science, recent developments in science and technology
	Environment	Environmental issues, conservation efforts
	Miscellaneous	Important days, books and authors, general knowledge facts
English	Grammar	Parts of speech, tense, voice, direct and indirect speech, subject-verb agreement
	Vocabulary	Synonyms, antonyms, one-word substitutions, idioms and phrases
	Comprehension	Reading comprehension passages, answering questions based on passages
	Writing	Essay writing, précis writing, letter writing, report writing

Telangana Culture, Movement	Culture	Language, literature, festivals, art and crafts, music, dance, cuisine
	Historical Movements	Telangana movement, key events and personalities, socio-economic and political context
	Post Formation Development	Development initiatives, welfare schemes, economic progress, infrastructure development, governance
Basic Knowledge of Computers	Office Applications	MS Office (Word, Excel, PowerPoint, Outlook), email communication, internet browsing
	Basic Computer Concepts	Hardware, software, operating systems, file management, security and privacy, basic troubleshooting