TSPSC

LECTURERS IN GOVERNMENT POLYTECHNICS IN TECHNICAL EDUCATION SERVICE

Online Test Series

Electronics and Communication Engineering - Schedule

No.of Tests : 21	
Subject Wise Tests	17
Full Length Mock Tests	4

Note:

★ The Syllabus considered as per Notification of TSPSC-PL. ACE Engineering Academy does not take any responsibility for deviations in syllabus in the final exam.

★ The Dates of Tests may Change according to the TSPSC-PL Exam schedule.

★ All Tests will be active till TSPSC-PL Examination.

★ Test series available in ENGLISH medium only.

★ Tests will be activated at 06:00 pm on the scheduled day.

040-40136222

https://support.ace.online/support/home

Subject wise Tests

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

Test No	Name of the Test	Max Marks	Date of Activation
Test-01	**Network solution methods:** Nodal and mesh analysis; Network theorems: superposition, Thevenin and Norton's, maximum power transfer; Wye-Delta transformation; Steady state sinusoidal analysis using phasors; Time-domain analysis of simple linear circuits; Solution of network equations using Laplace transform; Frequency domain analysis of RLC circuits; Linear 2-port network parameters: driving point and transfer functions; State equations for networks	60	30-01-2023
Test-02	**Electronic Devices:** Electronic Devices: Energy bands in silicon, intrinsic and extrinsic silicon. Carrier transport in silicon: diffusion current, drift current, mobility, and resistivity. Generation and recombination of carriers. p-n junction diode, zener diode, tunnel diode, BJT, JFET, MOS capacitor, MOSFET, LED, P- I -N and avalanche photo diode, Basics of LASERs.	60	02-02-2023
Test-03	**General Studies and General Abilities-1:** Society, Culture, Heritage, Arts and Literature of Telangana. Policies of Telangana State. Social Exclusion; Rights issues such as Gender, Caste, Tribe, Disability etc. and inclusive policies.	30	04-02-2023
Test-04	**Analog Circuits:** Small Signal Equivalent circuits of diodes, BJTs, MOSFETs and analog CMOS. Simple diode circuits, clipping, clamping, rectifier. Biasing and bias stability of transistor and FET amplifiers. **Amplifiers:** Single-and multi-stage, differential and operational, feedback, and power. Frequency response of amplifiers. Simple op-amp circuits. Filters. Sinusoidal oscillators; criterion for oscillation; single-transistor and op-amp configurations. Function generators and wave-shaping circuits, 555 Timers. Power supplies.	60	06-02-2023
Test-05	**Digital circuits:** Boolean algebra, minimization of Boolean functions; logic gates; digital IC families (DTL, TTL, ECL, MOS, CMOS). **Combinatorial circuits:** arithmetic circuits, code converters, multiplexers, decoders, PROMs and PLAs. **Sequential circuits:** latches and flip-flops, counters and shift-registers. Sample and hold circuits, ADCs, DACs. **Semiconductor memories:** ROM, SRAM, DRAM. **Microprocessor (8085):** architecture, programming, memory and I/O interfacing.	60	09-02-2023
Test-06	**General Studies and General Abilities-2:** Economic and Social Development of India and Telangana. Socio-economic, Political and Cultural History of Telangana with special emphasis on Telangana Statehood Movement and formation of Telangana state.	30	11-02-2023
Test-07	**Control Systems:** Basic control system components; block diagrammatic description, reduction of block diagrams. Open loop and closed loop (feedback) systems and stability analysis of these systems. Signal flow graphs and their use in determining transfer functions of systems; transient and steady state analysis of LTI control systems and frequency response. Tools and techniques for LTI control system analysis: root loci, Routh-Hurwitz criterion, Bode and Nyquist plots.	60	13-02-2023
Test-08	**Signals and Systems:** Definitions and properties of Laplace transform continuous-time and discrete-time Fourier series, continuous-time and discrete-time Fourier Transform, and FFT, z-transform. Sampling theorem. **Linear Time-Invariant (LTI) Systems:** definitions and properties; causality, stability, impulse response, convolution, poles and zeros, parallel and cascade structure, frequency response, group delay, phase delay. Signal transmission through LTI systems.	60	16-02-2023
Test-09	**General Studies and General Abilities-3:** Physical, Social and Economic Geography of India. Physical, Social and Economic Geography and Demography of Telangana.	30	18-02-2023
Test-10	**Analog communication systems:** Amplitude and Angle modulation and demodulation systems, spectral analysis of these operations, superheterodyne receivers; elements of hardware realizations of analog communication systems; signal-to-noise ratio (SNR) calculations for amplitude modulation (AM) and frequency modulation (FM) for low noise conditions.	60	20-02-2023
Test-11	**General Studies and General Abilities-4:** General Science; India's Achievements in Science and Technology. Environmental issues; Disaster Management- Prevention and Mitigation Strategies.	30	22-02-2023
Test-12	**Digital communication systems:** Pulse Code Modulation (PCM), Differential Pulse Code Modulation (DPCM) Digital modulation schemes: amplitude, phase and frequency shift keying schemes (ASK, PSK, FSK), QAM, matched filter receivers, bandwidth consideration and probability of error calculations for these schemes. Basics of TDMA, FDMA and CDMA and GSM. Random signals and noise: probability, random variables, probability density and distribution functions, Moments, autocorrelation, power spectral density. Fundamentals of information theory and channel capacity theorem.	60	23-02-2023
Test-13	**General Studies and General Abilities-5:** Socio-economic, Political and Cultural History of Modern India with special emphasis on Indian National Movement. Indian Constitution; Indian Political System; Governance and Public Policy.	30	25-02-2023
Test-14	**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: modes, boundary conditions, cut-off frequencies, dispersion relations. Antennas: antenna types, radiation pattern, gain and directivity, return loss.	60	27-02-2023
Test-15	**General Studies and General Abilities-6:** Current affairs – Regional, National and International. International Relations and Events.	30	01-03-2023

Test No	Name of the Test	Max Marks	Date of Activation
Test-16	**Engineering Mathematics:** Linear Algebra: Vector space, basis, linear dependence and independence, matrix algebra, eigen values and eigen vectors, rank, solution of linear equations – existence and uniqueness. Calculus: Mean value theorems, theorems of integral calculus, evaluation of definite and improper integrals, partial derivatives, maxima and minima, multiple integrals, line, surface and volume integrals, Taylor series. Differential Equations: First order equations (Linear and Nonlinear), higher order linear differential equations with constant coefficients, method of variation of parameters, Cauchy's and Euler's equations, initial and boundary value problems, partial differential equations and variable separable method. Complex Variables: Analytic functions, Cauchy's integral formula: Cauchy's integral theorem, Taylor's and Laurent' Series, residue theorem. Probability and Statistics: Probability, Joint and conditional probability, discrete and continuous random variables, probability distribution and density functions. Exponential, Poisson, normal and Binomial Distributions Functions. mean, mean square and standard deviation. Numerical Methods: Solutions of non-Linear equations, single and multi-step methods for differential equations	60	02-03-2023
Test-17	**General Studies and General Abilities-7:** Logical Reasoning; Analytical Ability and Data Interpretation. Basic English. (10th Class Standard)	30	04-03-2023

Full Length Mock Test

(No.of Questions: 150, Time duration: 150 Minutes)

Test-18	Mock-1 PAPER-II (Engineering Discipline)	300	08-03-2023
Test-19	Mock-1 PAPER-I (General Studies & General Abilities)	150	11-03-2023
Test-20	Mock-2 PAPER-II (Engineering Discipline)	300	15-03-2023
Test-21	Mock-2 PAPER-I (General Studies & General Abilities)	150	18-03-2023