



**ACE<sup>®</sup>**  
**Engineering Academy**  
Leading Institute for ESE/GATE/PSUs

**TSPSC**  
**LECTURERS IN GOVERNMENT POLYTECHNICS IN TECHNICAL**  
**EDUCATION SERVICE**  
**Online Test Series**

**Mechanical 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.

## Subject wise Tests

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

| Test No | Name of the Test  | Max Marks | Date of Activation |
|---------|---|-----------|--------------------|
| Test-01 | <b>Engineering Mechanics &amp; Machine Design:</b><br>Free-body diagrams and equilibrium; Trusses and Frames; Virtual work; Kinematics and Dynamics of Particles and Rigid Bodies in Plane Motion; Impulse and Momentum (Linear and Angular) and Energy Formulations; Impact.<br><br>Design For Static and Dynamic Loading; Failure Theories; Fatigue Strength; S-N Diagram; Design of Machine Elements such as Bolted, Riveted and Welded Joints, Shafts, Spur Gears, Rolling and Sliding Contact Bearings, Springs, Brakes and Clutches.  | 60        | 30-01-2023         |
| Test-02 | <b>Strength of Materials:</b> Stress and Strain, Stress-Strain Relationship and 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; Deflection Of Beams; Torsion Of Circular Shafts; Euler's Theory Of Columns; Energy Methods; Thermal Stresses; Testing Of Materials with Universal Testing Machine (UTM); Hardness And Impact Strength.  | 60        | 02-02-2023         |
| Test-03 | <b>General Studies and General Abilities-1:</b><br>Society, Culture, Heritage, Arts and Literature of Telangana. Policies of Telangana State.   | 30        | 04-02-2023         |
| Test-04 | <b>Theory of Machines &amp; Vibrations:</b> Displacement, Velocity and Acceleration Analysis of Plane Mechanisms; Dynamic Analysis of Slider-Crank Mechanism; Gears and Gear Trains; Flywheels, Gyroscope and Governors; Balancing of Reciprocating and Rotating Masses.<br>Vibrations: Free and Forced Vibration of Single Degree of Freedom Systems, Effect of Damping; Vibration Isolation; Resonance; Critical Speeds of Shafts.  | 60        | 06-02-2023         |
| Test-05 | <b>Fluid Mechanics:</b> Fluid Properties; Fluid Statics, Manometry, Buoyancy, Forces on Submerged Bodies, Stability of Floating Bodies; Fluid Acceleration; Differential Equations of Continuity and Momentum; Bernoulli's Equation; Viscous Flow of Incompressible Fluids, Boundary Layer, Elementary Turbulent Flow, Flow Through Pipes, Head Losses in Pipes and Bends.<br><b>Turbomachinery:</b> Pelton Wheel, Francis and Kaplan Turbines, Impulse and Reaction Principles, Velocity Diagrams.<br><b>Power Engineering:</b> Air compressors-Reciprocating and rotary compressors; Rankine, Brayton Cycles with Regeneration, Inter cooling and Reheat. | 60        | 09-02-2023         |
| Test-06 | <b>General Studies and General Abilities-2:</b><br>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 | <b>Heat-Transfer:</b> Modes of Heat Transfer; One Dimensional Heat Conduction, Resistance Concept, Electrical Analogy, Fins; Unsteady Heat Conduction, Dimensionless Parameters in Free and Forced Convective Heat Transfer, Various Correlations for Heat Transfer in Flow Over Flat Plates and Through Pipes, Effect of Turbulence; Radiative Heat Transfer, Black And Grey Surfaces, Shape Factors, Network Analysis, Heat Exchanger Performance, LMTD and NTU Methods.  | 60        | 13-02-2023         |
| Test-08 | <b>Thermodynamics:</b> Thermodynamic systems and processes; properties of pure substances, behavior of ideal and real gases; zeroth and first laws of thermodynamics, calculation of work and heat in various processes; second law of thermodynamics; thermodynamics property, availability and irreversibility; thermodynamic relations.<br><b>I.C. Engines:</b> Air-standard Otto & Diesel Cycles,<br><b>Refrigeration and air-conditioning:</b> Vapour Refrigeration Cycle, Heat Pumps, Gas Refrigeration; Reverse Brayton Cycle; Moist Air: Psychrometric Chart, Basic Psychrometric Processes.  | 60        | 16-02-2023         |
| Test-09 | <b>General Studies and General Abilities-3:</b><br>Physical, Social and Economic Geography of India.<br>Physical, Social and Economic Geography and Demography of Telangana.  | 30        | 18-02-2023         |
| Test-10 | <b>Engineering Materials:</b> Structure and Properties of Engineering Materials, Heat Treatment, Stress-Strain Diagrams for Engineering Materials, Iron-carbon diagram.<br><b>Metrology and Inspection:</b> Limits, Fits and Tolerances; Linear and Angular Measurements; Comparators; Gauge; Interferometry; Form and Surface Finish Measurement; Alignment and Testing Methods; Tolerance Analysis in Manufacturing and Assembly.   | 60        | 20-02-2023         |
| Test-11 | <b>General Studies and General Abilities-4:</b><br>General Science; India's Achievements in Science and Technology. Environmental issues; Disaster Management- Prevention and Mitigation Strategies.  | 30        | 22-02-2023         |
| Test-12 | <b>Metal Casting:</b> Design of Patterns, Moulds and Cores; Solidification and Cooling; Riser and Gating Design.<br><b>Metal Forming:</b> 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.<br><b>Joining Processes:</b> Principles (Gas, Arc, Resistance and Solid State) of Welding, Brazing, Soldering; Adhesive Bonding.  | 60        | 23-02-2023         |
| Test-13 | <b>General Studies and General Abilities-5:</b><br>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 No | Name of the Test   | Max Marks | Date of Activation |
|---------|--|-----------|--------------------|
| Test-14 | <b>Machining and Machine Tool Operations:</b> Mechanics of Machining; Basic Machine Tools; Single and Multi-Point Cutting Tools, Tool Geometry and Materials, Tool Life and Tool Wear; Economics of Machining; Principles of Non-Traditional Machining Processes; Principles of Work Holding Devices, Principals of Jigs and Fixtures.<br><b>Computer Integrated Manufacturing:</b> Basic concepts of CAD/CAM and their integration tools. | 60        | 27-02-2023         |
| Test-15 | <b>General Studies and General Abilities-6:</b><br>Current affairs – Regional, National and International. International Relations and Events.   | 30        | 01-03-2023         |
| Test-16 | <b>Production Planning and Control:</b> Forecasting Models, Aggregate Production Planning, Scheduling, Materials Requirement Planning.<br><b>Inventory Control:</b> Deterministic Models; Safety Stock Inventory Control Systems.<br><b>Operations Research:</b> Linear Programming, Simplex Method Transportation, Assignment, Simple Queuing Models, PERT and CPM.   | 60        | 02-03-2023         |
| Test-17 | <b>General Studies and General Abilities-7:</b><br>Logical Reasoning; Analytical Ability and Data Interpretation. Basic English. (10th Class Standard)   | 30        | 04-03-2023         |

| Full Length Mock Test<br><i>(No.of Questions: 150, Time duration: 150 Minutes)</i> |  |     |            |
|--|--|-----|------------|
| Test-18  | Mock-1 PAPER-II (Engineering Discipline)             | 300 | 09-03-2023 |
| Test-19  | Mock-1 PAPER-I (General Studies & General Abilities) | 150 | 11-03-2023 |
| Test-20  | Mock-2 PAPER-II (Engineering Discipline)             | 300 | 16-03-2023 |
| Test-21  | Mock-2 PAPER-I (General Studies & General Abilities) | 150 | 18-03-2023 |