



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



STAFF SELECTION COMMISSION

JUNIOR ENGINEER(Paper-I) EXAMINATION-2024

Online Test Series

Mechanical Engineering - Schedule

No.of Tests : 20	
Subject Wise Tests	16
Full Length Mock Tests	4

Note:

- ❖ The Syllabus considered as per Previous Notification of SSC-JE. ACE Engineering Academy does not take any responsibility for deviations in syllabus in the final SSC-JE exam. As per previous year Notification of SSC-JE each question carries '1' mark and negative marking of 0.25 Marks for each wrong answer.
- ❖ The Dates of above Tests may Change according to the SSC-JE (Paper-I) Exam schedule.
- ❖ Tests will be activated at 6:00 pm on scheduled day.
- ❖ All tests will be Active upto SSC-JE-2024 (Paper-I) Examination.

Subject-wise Tests

(No. of Questions: 50, Time duration: 30 Minutes and Marks: 50 M)

Test No	Name of the Test	Date of Activation
Test-01	General Intelligence and Reasoning-1	01-03-2024
Test-02	<p>Thermal Engineering: Properties of Pure Substances : p-v & P-T diagrams of pure substance like H₂O, Introduction of steam table with respect to steam generation process; definition of saturation, wet & superheated status. Definition of dryness fraction of steam, degree of superheat of steam. H-s chart of steam (Mollier's Chart). 1st Law of Thermodynamics : Definition of stored energy & internal energy, 1st Law of Thermodynamics of cyclic process, Non Flow Energy Equation, Flow Energy & Definition of Enthalpy, Conditions for Steady State Steady Flow; Steady State Steady Flow Energy Equation. 2nd Law of Thermodynamics : Definition of Sink, Source Reservoir of Heat, Heat Engine, Heat Pump & Refrigerator; Thermal Efficiency of Heat Engines & co-efficient of performance of Refrigerators, Kelvin – Planck & Clausius Statements of 2nd Law of Thermodynamics, Absolute or Thermodynamic Scale of temperature, Clausius Integral, Entropy, Entropy change calculation of ideal gas processes. Carnot Cycle & Carnot Efficiency, PMM-2; definition & its impossibility.</p>	06-03-2024
Test-03	General Awareness-1	09-03-2024
Test-04	<p>Fluid Mechanics & Machinery: Properties & Classification of Fluid : ideal & real fluids, Newton's law of viscosity, Newtonian and Non-Newtonian fluids, compressible and incompressible fluids. Fluid Statics : Pressure at a point. Measurement of Fluid Pressure : Manometers, U-tube, Inclined tube. Fluid Kinematics : Stream line, laminar & turbulent flow, external & internal flow, continuity equation. Dynamics of ideal fluids : Bernoulli's equation, Total head; Velocity head; Pressure head; Application of Bernoulli's equation. Measurement of Flow rate Basic Principles : Venturimeter, Pilot tube, Orifice meter. Hydraulic Turbines : Classifications, Principles. Centrifugal Pumps : Classifications, Principles, Performance.</p>	13-03-2024
Test-05	General Intelligence and Reasoning-2	16-03-2024
Test-06	<p>Theory of Machines: Concept of simple machine, Four bar linkage and link motion, Flywheels and fluctuation of energy, Gears – Type of gears, gear profile and gear ratio calculation, Governors – Principles and classification, Cams.</p>	20-03-2024
Test-07	General Awareness-2	23-03-2024

Test No	Name of the Test	Date of Activation
Test-08	Power Plant Engineering and Air Compressors: Rankine cycle of steam : Simple Rankine cycle plot on P-V, T-S, h-s planes, Rankine cycle efficiency with & without pump work. Boilers; Classification; Specification; Fittings & Accessories : Fire Tube & Water Tube Boilers. Air Compressors & their cycles; Refrigeration cycles; Principle of a Refrigeraton Plant; Nozzles & Steam Turbines.	27-03-2024
Test-09	General Intelligence and Reasoning-3	30-03-2024
Test-10	Machine Design and Engineering Mechanics: Power transmission by belts – V-belts and Flat belts, Clutches – Plate and Conical clutch, Riveted joint, Bearings, Friction in collars and pivots. Equilibrium of Forces, Law of motion, Friction.	03-04-2024
Test-11	General Awareness-3	06-04-2024
Test-12	Strength of Materials: Concepts of stress and strain, Elastic limit and elastic constants, Bending moments and shear force diagram, Stress in composite bars, Torsion of circular shafts, Bucking of columns – Euler’s and Rankin’s theories, Thin walled pressure vessels.	10-04-2024
Test-13	General Intelligence and Reasoning-4	13-04-2024
Test-14	IC engines: Air standard Cycles for IC engines : Otto cycle; plot on P-V, T-S Planes; Thermal Efficiency, Diesel Cycle; Plot on P-V, T-S planes; Thermal efficiency. IC Engine Performance, IC Engine Combustion, IC Engine Cooling & Lubrication	17-04-2024
Test-15	General Awareness-4	20-04-2024
Test-16	Production Engineering: Classification of Steels : mild steal & alloy steel, Heat treatment of steel, Welding – Arc Welding, Gas Welding, Resistance Welding, Special Welding Techniques i.e. TIG, MIG, etc. (Brazing & Soldering), Welding Defects & Testing; NDT, Foundry & Casting – methods, defects, different casting processes, Forging, Extrusion, etc, Metal cutting principles, cutting tools, Basic Principles of machining with (i) Lathe (ii) Milling (iii) Drilling (iv) Shaping (v) Grinding, Machines, tools & manufacturing processes	24-04-2024

Full Length Mock Test Series

(No. of Questions: 200, Time duration: 120 Minutes and Marks: 200 M)

Test-17	Full Length Mock Test-1	02-05-2024
Test-18	Full Length Mock Test-2	09-05-2024
Test-19	Full Length Mock Test-3	16-05-2024
Test-20	Full Length Mock Test-4	23-05-2024