ACE Engineering Academy
Leading Institute for ESE/GATE/PSUs | ace online

GATE-2025

Online Test Series

Mechanical Engineering Schedule

No.of Tests : 54 + 54 *free* practice tests of GATE-2024 Online Test Series		
	GATE - 2025 Test Series	**Practice Tests GATE - 2024 OTS**
Topic wise Tests	**25**	**25**
Grand Tests (Subject Wise Tests + Multi-Subject Wise Tests)	**17**	**17**
Full Length Mock Tests	**12**	**12**
Total Tests - 108		

Note:

★ The Syllabus considered as per Previoues year Notification of GATE. 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 GATE-2025 Exam schedule.

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

★ All tests will be active till GATE-2025 Exam.

Topic wise Tests

(No.of Questions: 15, Time duration: 42 Minutes and Marks: 25 M)

Test No	Name of the Test	Date of Activation
Test-01	**Engineering Mathematics-1:** Linear Algebra: Matrix algebra, systems of linear equations, eigenvalues and eigenvectors. Calculus: Functions of single variable, limit, continuity and differentiability, mean value theorems, indeterminate forms; evaluation of definite and improper integrals; double and triple integrals; partial derivatives, total derivative, Taylor series (in one and two variables), maxima and minima, Fourier series; gradient, divergence and curl, vector identities, directional derivatives, line, surface and volume integrals, applications of Gauss, Stokes and Green's theorems. Differential equations: First order equations (linear and nonlinear); higher order linear differential equations with constant coefficients; Euler-Cauchy equation; initial and boundary value problems; Laplace transforms; solutions of heat, wave and Laplace's equations.	15-04-2024
Test-02	**Engineering Mathematics-2:** Complex variables: Analytic functions; Cauchy-Riemann equations; Cauchy's integral theorem and integral formula; Taylor and Laurent series. Probability and Statistics: Definitions of probability, sampling theorems, conditional probability; mean, median, mode and standard deviation; random variables, binomial, Poisson and normal distributions. Numerical Methods: Numerical solutions of linear and non-linear algebraic equations; integration by trapezoidal and Simpson's rules; single and multi-step methods for differential equations.	
Test-03	**Engineering Mechanics:** Free-body diagrams and equilibrium; friction and its application including rolling friction, belt-pulley, brakes, clutches, screw jack, wedge, vehicles, etc.; trusses and frames; virtual work; kinematics and dynamics of rigid bodies in plane motion; impulse and momentum (linear and angular) and energy formulations, Lagrange's equation.	24-04-2024
Test-04	**Strength of Materials-1:** Stress and strain, elastic constants, Poisson's ratio; Mohr's circle for plane stress and plane strain; shear force and bending moment diagrams; thermal stresses; strain gauges and rosettes; testing of materials with universal testing machine; testing of hardness and impact strength	
Test-05	**Strength of Materials-2:** Bending and shear stresses; concept of shear centre; deflection of beams; torsion of circular shafts; Euler's theory of columns; energy methods; thin cylinders.	

Test No	Name of the Test	Date of Activation
Test-06	**Fluid Mechanics-1:** 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.	01-05-2024
Test-07	**Fluid Mechanics-2:** Viscous flow of incompressible fluids, boundary layer, elementary turbulent flow, flow through pipes, head losses in pipes, bends and fittings.	
Test-08	**Fluid Mechanics-3:** Dimensional analysis; Basics of compressible fluid flow; Turbomachinery: Impulse and reaction principles, velocity diagrams, Pelton-wheel, Francis and Kaplan turbines, Steam and gas turnine	
Test-09	**Thermodynamics-1:** Thermodynamic systems and processes; behaviour of ideal and real gases; zeroth and first laws of thermodynamics, calculation of work and heat in various processes; second law of thermodynamics;	08-05-2024
Test-10	**Thermodynamics-2:** Properties of pure substances,Thermodynamic property charts and tables, availability and irreversibility; thermodynamic relations. vapour and gas power cycles, concepts of regeneration and reheat.	
Test-11	**Thermodynamics-3:** Air and gas compressors; I.C. Engines: Air-standard Otto, Diesel and dual cycles. Refrigeration and air-conditioning: Vapour and gas refrigeration and heat pump cycles; properties of moist air, psychrometric chart, basic psychrometric processes.	
Test-12	**Theory of Machines and Vibrations-1:** Displacement, velocity and acceleration analysis of plane mechanisms; dynamic analysis of linkages; flywheels; Cams; gears and gear trains;	15-05-2025
Test-13	**Theory of Machines and Vibrations-2:** Governors; balancing of reciprocating and rotating masses; gyroscope. *Vibrations:* Free and forced vibration of single degree of freedom systems, effect of damping; vibration isolation; resonance; critical speeds of shafts.	
Test-14	**Heat Transfer-1:** Modes of heat transfer; one dimensional heat conduction, resistance concept and electrical analogy, heat transfer through fins; 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;	
Test-15	**Heat Transfer-2:** Unsteady heat conduction, lumped parameter system, Heisler's charts; 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.	

Test No	Name of the Test	Date of Activation
Test-16	**Machine Design-1:** Design for static and dynamic loading; failure theories; fatigue strength and the S-N diagram; principles of the design of machine elements such as bolted, riveted and welded joints;	22-05-2024
Test-17	**Machine Design-2:** Shafts, gears, rolling and sliding contact bearings, brakes and clutches, springs.	
Test-18	**Production-1:** *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.	29-05-2024
Test-19	**Production-2:** *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. Computer Integrated Manufacturing: Basic concepts of CAD/CAM and their integration tools; *additive manufacturing.*	
Test-20	**Production-3:** *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)* .Engineering Materials: Structure and properties of engineering materials, phase diagrams, heat treatment, stress-strain diagrams for engineering materials.	
Test-21	**Industrial Management and Operational Research-1:** Forecasting models, aggregate production planning, scheduling, materials requirement planning; lean manufacturing; Inventory Control: Deterministic models; safety stock inventory control systems.	05-06-2024
Test-22	**Industrial Management and Operational Research-2:** Linear programming, simplex method, transportation, assignment, network flow models, simple queuing models, PERT and CPM.	
Test-23	**Verbal Ability:** Basic English grammar: tenses, articles, adjectives, prepositions, conjunctions, verb-noun agreement, and other parts of speech. Basic vocabulary: words, idioms, and phrases in context. Reading and comprehension. Narrative sequencing.	12-06-2024

Test No	Name of the Test	Date of Activation
Test-24	**Quantitative Aptitude:** Data interpretation: data graphs (bar graphs, pie charts, and other graphs representing data), 2- and 3-dimensional plots, maps, and tables. Numerical computation and estimation: ratios, percentages, powers, exponents and logarithms, permutations and combinations, and series Mensuration and geometry. Elementary statistics and probability.	12-06-2024
Test-25	**Analytical Aptitude:** Logic: deduction and induction, Analogy, Numerical relations and reasoning **Spatial Aptitude:** Transformation of shapes: translation, rotation, scaling, mirroring, assembling, and grouping Paper folding, cutting, and patterns in 2 and 3 dimensions	

Subject Wise Grand Tests *(No.of Questions: 30, Time duration: 83 Minutes and Marks: 50 M)*		
Test-26	Engineering Mathematics	26-05-2024
Test-27	Thermodynamics	
Test-28	Heat Transfer	03-07-2024
Test-29	Fluid Mechanics & Turbo Machinery	
Test-30	Engineering Mechanics	10-07-2024
Test-31	Strength of Materials	
Test-32	Theory of Machines and Vibrations	17-07-2024
Test-33	Machine Design	
Test-34	Production	24-07-2024
Test-35	Industrial Management and Operational Research	
Test-36	General Aptitude	31-07-2024

Test No	Name of the Test	Date of Activation
Full Length Mock Test - 1st Series *(No.of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)*		
Test-37	Full Length Mock Test-1	14-08-2024
Test-38	Full Length Mock Test-2	21-08-2024
Test-39	Full Length Mock Test-3	28-08-2024
Test-40	Full Length Mock Test-4	04-09-2024
Test-41	Full Length Mock Test-5	11-09-2024
Test-42	Full Length Mock Test-6	18-09-2024
Multi-Subject Wise Grand Tests *(No.of Questions: 30, Time duration: 83 Minutes and Marks: 50 M)*		
Test-43	Strength of Materials & Engineering Mechanics	02-10-2024
Test-44	Fluid Mechanics & Turbo Machinery, Heat Transfer	
Test-45	Thermodynamics	09-10-2024
Test-46	Machine Design & Theory of Machines and Vibrations	
Test-47	Production & Industrial Management and Operational Research	16-10-2024
Test-48	Engineering Mathematics & General Aptitude	
Full Length Mock Test - 2nd Series *(No.of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)*		
Test-49	Full Length Mock Test-7	06-11-2024
Test-50	Full Length Mock Test-8	13-11-2024
Test-51	Full Length Mock Test-9	20-11-2024
Test-52	Full Length Mock Test-10	27-11-2024
Test-53	Full Length Mock Test-11	01-01-2025
Test-54	Full Length Mock Test-12	08-01-2025

Free Practice Tests

Topic wise Tests

(No.of Questions: 15, Time duration: 42 Minutes and Marks: 25 M)

Test No	Name of the Test	Date of Activation
Test-01	**Engineering Mathematics-1:** Linear Algebra: Matrix algebra, systems of linear equations, eigenvalues and eigenvectors. Calculus: Functions of single variable, limit, continuity and differentiability, mean value theorems, indeterminate forms; evaluation of definite and improper integrals; double and triple integrals; partial derivatives, total derivative, Taylor series (in one and two variables), maxima and minima, Fourier series; gradient, divergence and curl, vector identities, directional derivatives, line, surface and volume integrals, applications of Gauss, Stokes and Green's theorems. Differential equations: First order equations (linear and nonlinear); higher order linear differential equations with constant coefficients; Euler-Cauchy equation; initial and boundary value problems; Laplace transforms; solutions of heat, wave and Laplace's equations.	**25-03-2024**
Test-02	**Engineering Mathematics-2:** Complex variables: Analytic functions; Cauchy-Riemann equations; Cauchy's integral theorem and integral formula; Taylor and Laurent series. Probability and Statistics: Definitions of probability, sampling theorems, conditional probability; mean, median, mode and standard deviation; random variables, binomial, Poisson and normal distributions. Numerical Methods: Numerical solutions of linear and non-linear algebraic equations; integration by trapezoidal and Simpson's rules; single and multi-step methods for differential equations.	
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Test-07	**Thermodynamics-2:** Properties of pure substances,Thermodynamic property charts and tables, availability and irreversibility; thermodynamic relations. vapour and gas power cycles, concepts of regeneration and reheat.	
Test-08	**Thermodynamics-3:** Air and gas compressors; I.C. Engines: Air-standard Otto, Diesel and dual cycles. Refrigeration and air-conditioning: Vapour and gas refrigeration and heat pump cycles; properties of moist air, psychrometric chart, basic psychrometric processes.	
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Test-27	Thermodynamics	
Test-28	Heat Transfer	
Test-29	Fluid Mechanics & Turbo Machinery	
Test-30	Engineering Mechanics	
Test-31	Strength of Materials	
Test-32	Theory of Machines and Vibrations	
Test-33	Machine Design	
Test-34	Production	
Test-35	Industrial Management and Operational Research	
Test-36	General Aptitude	

Test No	Name of the Test	Date of Activation
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Test-37	Strength of Materials & Engineering Mechanics	**01-04-2024**
Test-38	Fluid Mechanics & Turbo Machinery, Heat Transfer	
Test-39	Thermodynamics	
Test-40	Machine Design & Theory of Machines and Vibrations	
Test-41	Production & Industrial Management and Operational Research	
Test-42	Engineering Mathematics & General Aptitude	
Full Length Mock Tests *(No.of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)*		
Test-43	Full Length Mock Test-1	**08-04-2024**
Test-44	Full Length Mock Test-2	
Test-45	Full Length Mock Test-3	
Test-46	Full Length Mock Test-4	
Test-47	Full Length Mock Test-5	
Test-48	Full Length Mock Test-6	
Test-49	Full Length Mock Test-7	
Test-50	Full Length Mock Test-8	
Test-51	Full Length Mock Test-9	
Test-52	Full Length Mock Test-10	
Test-53	Full Length Mock Test-11	
Test-54	Full Length Mock Test-12	