



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

GATE-2022

Online Test Series

Mechanical Engineering - Schedule

No.of Tests : 65 + 53 *free* practice tests of GATE-2021 Online Test Series

	GATE - 2022 Test Series	Practice Tests GATE - 2021 Test Series
Topic wise Tests	25	24
Grand Tests (Subject Wise Tests + Multi-Subject Wise Tests)	28	17
Full Length Mock Tests	12	12
Total Tests - 118		

All tests will be Active upto GATE -2022 Examination.

Topic wise Tests

(No. of Questions: 15, Time duration: 45 Minutes and Marks: 25 M)

Test No	Name of the Topic	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.	03-05-2021
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.	
Test-04	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;	12-05-2021
Test-05	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-06	Theory of Machines and Vibrations-1: Displacement, velocity and acceleration analysis of plane mechanisms; dynamic analysis of linkages; flywheels; Cams; gears and gear trains;	
Test-07	Theory of Machines and Vibrations-2: Governors; balancing of reciprocating and rotating masses; gyroscope. <i>Vibrations:</i> Free and forced vibration of single degree of freedom systems, effect of damping; vibration isolation; resonance; critical speeds of shafts.	
Test-08	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;	19-05-2021
Test-09	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-10	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-11	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-12	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-13	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.	26-05-2021
Test-14	Fluid Mechanics-2: Viscous flow of incompressible fluids, boundary layer, elementary turbulent flow, flow through pipes, head losses in pipes, bends and fittings.	
Test-15	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 turbine	

Test No	Name of the Topic	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;	26-05-2021
Test-17	Machine Design-2: Shafts, gears, rolling and sliding contact bearings, brakes and clutches, springs.	
Test-18	Production-1: <i>Casting, Forming and Joining Processes</i> : 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; <i>principles of powder metallurgy</i> . Principles of welding, brazing, soldering and adhesive bonding.	02-06-2021
Test-19	Production-2: <i>Machining and Machine Tool Operations</i> : 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; <i>additive manufacturing</i> .	
Test-20	Production-3: <i>Metrology and Inspection</i> : Limits, fits and tolerances; linear and angular measurements; comparators; interferometry; form and finish measurement; alignment and testing methods; tolerance analysis in manufacturing and assembly; <i>concepts of coordinate-measuring machine (CMM)</i> .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.	
Test-22	Industrial Management and Operational Research-2: Linear programming, simplex method, transportation, assignment, network flow models, simple queuing models, PERT and CPM.	09-06-2021
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.	
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.	
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 - 1st Series

(No. of Questions: 30, Time duration: 90 Minutes and Marks: 50 M)

Test No	Name of the Subject	Date of Activation
Test-26	Engineering Mathematics	23-06-2021
Test-27	Thermodynamics	
Test-28	Heat Transfer	30-06-2021
Test-29	Fluid Mechanics & Turbo Machinery	
Test-30	Engineering Mechanics	14-07-2021
Test-31	Strength of Materials	
Test-32	Theory of Machines and Vibrations	21-07-2021
Test-33	Machine Design	
Test-34	Production	28-07-2021
Test-35	Industrial Management and Operational Research	
Test-36	General Aptitude	04-08-2021

Full Length Mock Test - 1st Series*(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)*

Test No	Name of the Mock	Date of Activation
Test-37	Full Length Mock Test-1	11-08-2021
Test-38	Full Length Mock Test-2	18-08-2021
Test-39	Full Length Mock Test-3	25-08-2021

Subject Wise Grand Tests - 2nd Series*(No. of Questions: 30, Time duration: 90 Minutes and Marks: 50 M)*

Test No	Name of the Subject	Date of Activation
Test-40	Engineering Mathematics	01-09-2021
Test-41	Thermodynamics	
Test-42	Heat Transfer	08-09-2021
Test-43	Fluid Mechanics & Turbo Machinery	
Test-44	Engineering Mechanics	15-09-2021
Test-45	Strength of Materials	
Test-46	Theory of Machines and Vibrations	22-09-2021
Test-47	Machine Design	
Test-48	Production	29-09-2021
Test-49	Industrial Management and Operational Research	
Test-50	General Aptitude	06-10-2021

Full Length Mock Test - 2nd Series*(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)*

Test No	Name of the Mock	Date of Activation
Test-51	Full Length Mock Test-4	20-10-2021
Test-52	Full Length Mock Test-5	27-10-2021
Test-53	Full Length Mock Test-6	03-11-2021

Multi-Subject Wise Grand Tests*(No. of Questions: 30, Time duration: 90 Minutes and Marks: 50 M)*

Test No	Name of the Subject	Date of Activation
Test-54	Strength of Materials & Engineering Mechanics	17-11-2021
Test-55	Fluid Mechanics & Turbo Machinery, Heat Transfer	
Test-56	Thermodynamics	24-11-2021
Test-57	Machine Design & Theory of Machines and Vibrations	
Test-58	Production & Industrial Management and Operational Research	01-12-2021
Test-59	Engineering Mathematics & General Aptitude	

Full Length Mock Test - 3rd Series*(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)*

Test No	Name of the Mock	Date of Activation
Test-60	Full Length Mock Test-7	22-12-2021
Test-61	Full Length Mock Test-8	29-12-2021
Test-62	Full Length Mock Test-9	05-01-2022
Test-63	Full Length Mock Test-10	12-01-2022
Test-64	Full Length Mock Test-11	19-01-2022
Test-65	Full Length Mock Test-12	26-01-2022

Note: The Syllabus considered as per Previous year Notification of GATE. ACE Engineering Academy does not take any responsibility for deviations in syllabus in the final exam.

The Dates of above Tests may Change according to the GATE-2022 Exam schedule.

Tests will be activated at 02:00 pm on the scheduled day.

Free Practice Tests of GATE-2021 Online Test Series

Topic wise Tests

(No. of Questions: 15, Time duration: 45 Minutes and Marks: 25 M)

Test No	Name of the Topic	Date of Activation
ME_P-01	Engineering Mathematics-1: Linear Algebra, Calculus, Differential Equations	15-04-2021
ME_P-02	Engineering Mathematics-2: Complex Variables, Numerical Methods and Probability and Statistics.	
ME_P-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.	
ME_P-04	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;	
ME_P-05	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.	
ME_P-06	Theory of Machines and Vibrations-1: Displacement, velocity and acceleration analysis of plane mechanisms; dynamic analysis of linkages; flywheels; Cams; gears and gear trains;	
ME_P-07	Theory of Machines and Vibrations-2: Governors; balancing of reciprocating and rotating masses; gyroscope. <i>Vibrations:</i> Free and forced vibration of single degree of freedom systems, effect of damping; vibration isolation; resonance; critical speeds of shafts.	
ME_P-08	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;	
ME_P-09	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.	
ME_P-10	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.	
ME_P-11	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	
ME_P-12	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.	
ME_P-13	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.	
ME_P-14	Fluid Mechanics-2: Viscous flow of incompressible fluids, boundary layer, elementary turbulent flow, flow through pipes, head losses in pipes, bends and fittings.	
ME_P-15	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 turbine	
ME_P-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;	
ME_P-17	Machine Design-2: Shafts, gears, rolling and sliding contact bearings, brakes and clutches, springs.	
ME_P-18	Production-1: <i> Casting, Forming and Joining Processes :</i> 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; <i>principles of powder metallurgy</i> . Principles of welding, brazing, soldering and adhesive bonding.	

Test No	Name of the Topic	Date of Activation
ME_P-19	Production-2: <i>Machining and Machine Tool Operations</i> : 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; <i>additive manufacturing</i> .	15-04-2021
ME_P-20	Production-3: <i>Metrology and Inspection</i> : Limits, fits and tolerances; linear and angular measurements; comparators; interferometry; form and finish measurement; alignment and testing methods; tolerance analysis in manufacturing and assembly; <i>concepts of coordinate-measuring machine (CMM)</i> .Engineering Materials: Structure and properties of engineering materials, phase diagrams, heat treatment, stress-strain diagrams for engineering materials.	
ME_P-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.	
ME_P-22	Industrial Management and Operational Research-2: Linear programming, simplex method, transportation, assignment, network flow models, simple queuing models, PERT and CPM.	
ME_P-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	
ME_P-24	Numerical Ability: 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. 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: 90 Minutes and Marks: 50 M)

Test No	Name of the Subject	Date of Activation
ME_P-25	Engineering Mathematics	20-04-2021
ME_P-26	Thermodynamics	
ME_P-27	Heat Transfer	
ME_P-28	Fluid Mechanics & Turbo Machinery	
ME_P-29	Engineering Mechanics	
ME_P-30	Strength of Materials	
ME_P-31	Theory of Machines and Vibrations	
ME_P-32	Machine Design	
ME_P-33	Production	
ME_P-34	Industrial Management and Operational Research	
ME_P-35	General Aptitude	

Multi-Subject Wise Grand Tests

(No. of Questions: 30, Time duration: 90 Minutes and Marks: 50 M)

Test No	Name of the Subject	Date of Activation
ME_P-36	Strength of Materials & Engineering Mechanics	20-04-2021
ME_P-37	Fluid Mechanics & Turbo Machinery, Heat Transfer	
ME_P-38	Thermodynamics	
ME_P-39	Machine Design & Theory of Machines and Vibrations	
ME_P-40	Production & Industrial Management and Operational Research	
ME_P-41	Engineering Mathematics & General Aptitude	

Full Length Mock Tests*(No. of Questions: 65, Time duration: 180 Minutes and Marks: 100 M)*

Test No	Name of the Mock	Date of Activation
ME_P-42	Full Length Mock Test-1	30-04-2021
ME_P-43	Full Length Mock Test-2	
ME_P-44	Full Length Mock Test-3	
ME_P-45	Full Length Mock Test-4	
ME_P-46	Full Length Mock Test-5	
ME_P-47	Full Length Mock Test-6	
ME_P-48	Full Length Mock Test-7	
ME_P-49	Full Length Mock Test-8	
ME_P-50	Full Length Mock Test-9	
ME_P-51	Full Length Mock Test-10	
ME_P-52	Full Length Mock Test-11	
ME_P-53	Full Length Mock Test-12	