



ACE

Engineering Academy

GATE-2021 Online Test Series

Mechanical Engineering - Schedule

No. of Test : 64 (24 Topic wise Tests + 28 Grand Tests + 12 Full Length Mock Tests)
+ **Free** 53 practice Tests of GATE-2020 Online Test Series

Topic wise Tests

Test No	Name of the Topic	No. of Questions	Max Marks	Duration	Date of Activation
Test-01	Engineering Mathematics-1: Linear Algebra, Calculus, Differential Equations	15	25	45 mins	03-06-2020
Test-02	Engineering Mathematics-2: Complex Variables, Numerical Methods and Probability and Statistics.	15	25	45 mins	
Test-03	Engineering Mechanics: Free-body diagrams and equilibrium; trusses and frames; virtual work; kinematics and dynamics of particles and of rigid bodies in plane motion; impulse and momentum (linear and angular) and energy formulations, collisions.	15	25	45 mins	
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;	15	25	45 mins	
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.	15	25	45 mins	
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;	15	25	45 mins	12-06-2020
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.	15	25	45 mins	
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;	15	25	45 mins	
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.	15	25	45 mins	
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.	15	25	45 mins	
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	15	25	45 mins	19-06-2020
Test-12	Strength of Materials-2: Bending and shear stresses; deflection of beams; torsion of circular shafts; Euler's theory of columns; energy methods; thin cylinders.	15	25	45 mins	
Test-13	Fluid Mechanics-1: Fluid properties; fluid statics, manometry, buoyancy, 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.	15	25	45 mins	
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.	15	25	45 mins	
Test-15	Fluid Mechanics-3: Dimensional analysis; Turbomachinery: Impulse and reaction principles, velocity diagrams, Pelton-wheel, Francis and Kaplan turbines.	15	25	45 mins	

Test No	Name of the Topic	No. of Questions	Max Marks	Duration	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;	15	25	45 mins	26-06-2020
Test-17	Machine Design-2: Shafts, gears, rolling and sliding contact bearings, brakes and clutches, springs.	15	25	45 mins	
Test-18	Production-1: <i>Casting:</i> Different types of castings, design of patterns, moulds and cores; solidification and cooling; riser and gating design. <i>Forming and Joining Processes:</i> 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 welding, brazing, soldering and adhesive bonding.	15	25	45 mins	
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, design of jigs and fixtures. <i>Computer Integrated Manufacturing:</i> Basic concepts of CAD/CAM and their integration tools.	15	25	45 mins	
Test-20	Production-3: <i>Metrology and Inspection:</i> Limits, fits and tolerances; linear and angular measurements; comparators; gauge design; interferometry; form and finish measurement; alignment and testing methods; tolerance analysis in manufacturing and assembly. Principles of powder metallurgy. <i>Engineering Materials:</i> Structure and properties of engineering materials, phase diagrams, heat treatment, stress-strain diagrams for engineering materials.	15	25	45 mins	03-07-2020
Test-21	Industrial Management and Operational Research-1: Forecasting models, aggregate production planning, scheduling, materials requirement planning. Inventory Control: Deterministic models; safety stock inventory control systems.	15	25	45 mins	
Test-22	Industrial Management and Operational Research-2: Linear programming, simplex method, transportation, assignment, network flow models, simple queuing models, PERT and CPM.	15	25	45 mins	
Test-23	Verbal Ability: English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction.	15	25	45 mins	
Test-24	Numarical Ability: Numerical computation, numerical estimation, numerical reasoning and data interpretation.	15	25	45 mins	

Subject Wise Grand Tests - 1 st Series					
Test No	Name of the Topic	No. of Questions	Max Marks	Duration	Date of Activation
Test-25	Engineering Mathematics	30	50	90 mins	17-07-2020
Test-26	Thermodynamics	30	50	90 mins	
Test-27	Heat Transfer	30	50	90 mins	24-07-2020
Test-28	Fluid Mechanics & Turbo Machinery	30	50	90 mins	
Test-29	Engineering Mechanics	30	50	90 mins	31-07-2020
Test-30	Strength of Materials	30	50	90 mins	
Test-31	Theory of Machines and Vibrations	30	50	90 mins	07-08-2020
Test-32	Machine Design	30	50	90 mins	
Test-33	Production	30	50	90 mins	13-08-2020
Test-34	Industrial Management and Operational Research	30	50	90 mins	
Test-35	General Aptitude	30	50	90 mins	

Full Length Mock GATE Test - 1 st Series (As per GATE pattern)					
Test No	Name of the Topic	No. of Questions	Max Marks	Duration	Date of Activation
Test-36	Full Length GATE Mock Test-1	65	100	180 mins	21-08-2020
Test-37	Full Length GATE Mock Test-2	65	100	180 mins	28-08-2020
Test-38	Full Length GATE Mock Test-3	65	100	180 mins	04-09-2020

Subject Wise Grand Tests - 2 nd Series					
Test No	Name of the Topic	No. of Questions	Max Marks	Duration	Date of Activation
Test-39	Engineering Mathematics	30	50	90 mins	11-09-2020
Test-40	Thermodynamics	30	50	90 mins	
Test-41	Heat Transfer	30	50	90 mins	18-09-2020
Test-42	Fluid Mechanics & Turbo Machinery	30	50	90 mins	
Test-43	Engineering Mechanics	30	50	90 mins	25-09-2020
Test-44	Strength of Materials	30	50	90 mins	
Test-45	Theory of Machines and Vibrations	30	50	90 mins	02-10-2020
Test-46	Machine Design	30	50	90 mins	
Test-47	Production	30	50	90 mins	09-10-2020
Test-48	Industrial Management and Operational Research	30	50	90 mins	
Test-49	General Aptitude	30	50	90 mins	

Full Length Mock GATE Tests- 2 nd Series					
Test No	Name of the Topic	No. of Questions	Max Marks	Duration	Date of Activation
Test-50	Full Length GATE Mock Test-4	65	100	180 mins	16-10-2020
Test-51	Full Length GATE Mock Test-5	65	100	180 mins	23-10-2020
Test-52	Full Length GATE Mock Test-6	65	100	180 mins	30-10-2020

Multi-Subject Wise Grand Tests					
Test No	Name of the Topic	No. of Questions	Max Marks	Duration	Date of Activation
Test-53	Strength of Materials & Engineering Mechanics	30	50	90 mins	06-11-2020
Test-54	Fluid Mechanics & Turbo Machinery, Heat Transfer	30	50	90 mins	
Test-55	Thermodynamics	30	50	90 mins	13-11-2020
Test-56	Machine Design & Theory of Machines and Vibrations	30	50	90 mins	
Test-57	Production & Industrial Management and Operational Research	30	50	90 mins	20-11-2020
Test-58	Engineering Mathematics & General Aptitude	30	50	90 mins	

Full Length Mock GATE Tests - 3 rd Series					
Test No	Name of the Topic	No. of Questions	Max Marks	Duration	Date of Activation
Test-59	Full Length GATE Mock Test-7	65	100	180 mins	04-12-2020
Test-60	Full Length GATE Mock Test-8	65	100	180 mins	11-12-2020
Test-61	Full Length GATE Mock Test-9	65	100	180 mins	06-01-2021
Test-62	Full Length GATE Mock Test-10	65	100	180 mins	13-01-2021
Test-63	Full Length GATE Mock Test-11	65	100	180 mins	20-01-2021
Test-64	Full Length GATE Mock Test-12	65	100	180 mins	27-01-2021

Free Practice Tests of GATE-2020 Online Test Series

Topic wise Tests

Test No	Name of the Topic	No. of Questions	Max Marks	Duration	Date of Activation
ME_P01	Engineering Mathematics-1: Linear Algebra, Calculus, Differential Equations	15	25	45 mins	20-04-2020
ME_P02	Engineering Mathematics-2: Complex Variables, Numerical Methods and Probability and Statistics.	15	25	45 mins	
ME_P03	Engineering Mechanics: Free-body diagrams and equilibrium; trusses and frames; virtual work; kinematics and dynamics of particles and of rigid bodies in plane motion; impulse and momentum (linear and angular) and energy formulations, collisions.	15	25	45 mins	
ME_P04	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;	15	25	45 mins	
ME_P05	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.	15	25	45 mins	
ME_P06	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	25	45 mins	
ME_P07	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.	15	25	45 mins	
ME_P08	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;	15	25	45 mins	
ME_P09	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.	15	25	45 mins	
ME_P10	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.	15	25	45 mins	
ME_P11	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	15	25	45 mins	
ME_P12	Strength of Materials-2: Bending and shear stresses; deflection of beams; torsion of circular shafts; Euler's theory of columns; energy methods; thin cylinders.	15	25	45 mins	
ME_P13	Fluid Mechanics-1: Fluid properties; fluid statics, manometry, buoyancy, 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.	15	25	45 mins	
ME_P14	Fluid Mechanics-2: Viscous flow of incompressible fluids, boundary layer, elementary turbulent flow, flow through pipes, head losses in pipes, bends and fittings.	15	25	45 mins	
ME_P15	Fluid Mechanics-3: Dimensional analysis; Turbomachinery: Impulse and reaction principles, velocity diagrams, Pelton-wheel, Francis and Kaplan turbines.	15	25	45 mins	
ME_P16	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;	15	25	45 mins	
ME_P17	Machine Design-2: Shafts, gears, rolling and sliding contact bearings, brakes and clutches, springs.	15	25	45 mins	
ME_P18	Production-1: <i>Casting:</i> Different types of castings, design of patterns, moulds and cores; solidification and cooling; riser and gating design. <i>Forming and Joining Processes:</i> 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 welding, brazing, soldering and adhesive bonding.	15	25	45 mins	
ME_P19	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, design of jigs and fixtures. <i>Computer Integrated Manufacturing:</i> Basic concepts of CAD/CAM and their integration tools.	15	25	45 mins	

Test No	Name of the Topic	No. of Questions	Max Marks	Duration	Date of Activation
ME_P20	Production-3: <i>Metrology and Inspection:</i> Limits, fits and tolerances; linear and angular measurements; comparators; gauge design; interferometry; form and finish measurement; alignment and testing methods; tolerance analysis in manufacturing and assembly. Principles of powder metallurgy. <i>Engineering Materials:</i> Structure and properties of engineering materials, phase diagrams, heat treatment, stress-strain diagrams for engineering materials.	15	25	45 mins	20-04-2020
ME_P21	Industrial Management and Operational Research-1: Forecasting models, aggregate production planning, scheduling, materials requirement planning. Inventory Control: Deterministic models; safety stock inventory control systems.	15	25	45 mins	
ME_P22	Industrial Management and Operational Research-2: Linear programming, simplex method, transportation, assignment, network flow models, simple queuing models, PERT and CPM.	15	25	45 mins	
ME_P23	Verbal Ability: English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction.	15	25	45 mins	
ME_P24	Numarical Ability: Numerical computation, numerical estimation, numerical reasoning and data interpretation.	15	25	45 mins	

Subject Wise Grand Tests					
Test No	Name of the Topic	No. of Questions	Max Marks	Duration	Date of Activation
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ME_P26	Engineering Mechanics	30	50	90 mins	
ME_P27	Heat Transfer	30	50	90 mins	
ME_P28	Theory of Machines and Vibrations	30	50	90 mins	
ME_P29	Thermodynamics	30	50	90 mins	
ME_P30	Strength of Materials	30	50	90 mins	
ME_P31	Fluid Mechanics & Turbo Machinery	30	50	90 mins	
ME_P32	Machine Design	30	50	90 mins	
ME_P33	Production	30	50	90 mins	
ME_P34	Industrial Management and Operational Research	30	50	90 mins	
ME_P35	General Aptitude	30	50	90 mins	

Multi-Subject Wise Grand Tests					
Test No	Name of the Topic	No. of Questions	Max Marks	Duration	Date of Activation
ME_P36	Strength of Materials & Engineering Mechanics	30	50	90 mins	20-04-2020
ME_P37	Fluid Mechanics & Turbo Machinery, Heat Transfer	30	50	90 mins	
ME_P38	Thermodynamics	30	50	90 mins	
ME_P39	Machine Design & Theory of Machines and Vibrations	30	50	90 mins	
ME_P40	Production & Industrial Management and Operational Research	30	50	90 mins	
ME_P41	Engineering Mathematics & General Aptitude	30	50	90 mins	

Full Length Mock GATE Tests					
Test No	Name of the Topic	No. of Questions	Max Marks	Duration	Date of Activation
ME_P42	Full Length GATE Mock Test-1	65	100	180 mins	20-04-2020
ME_P43	Full Length GATE Mock Test-2	65	100	180 mins	
ME_P44	Full Length GATE Mock Test-3	65	100	180 mins	
ME_P45	Full Length GATE Mock Test-4	65	100	180 mins	
ME_P46	Full Length GATE Mock Test-5	65	100	180 mins	
ME_P47	Full Length GATE Mock Test-6	65	100	180 mins	
ME_P48	Full Length GATE Mock Test-7	65	100	180 mins	
ME_P49	Full Length GATE Mock Test-8	65	100	180 mins	
ME_P50	Full Length GATE Mock Test-9	65	100	180 mins	
ME_P51	Full Length GATE Mock Test-10	65	100	180 mins	
ME_P52	Full Length GATE Mock Test-11	65	100	180 mins	
ME_P53	Full Length GATE Mock Test-12	65	100	180 mins	