






ACE
Engineering Academy
(Leading institute for ESE/GATE/PSUs)

GATE – 2020

Online Test Series

MECHANICAL ENGINEERING (ME)

No. of Tests : 64 + **Free** 53 Practice Tests of GATE - 2019 Online Test Series

	GATE - 2020 Test Series	Practice Tests GATE - 2019 Test Series
 Topic wise Tests	24	24
 Subject Wise / Multi Subject Grand Tests	28	17
 Full Length Mock Tests	12	12

All tests will be available till GATE -2020 Examination.

TEST SERIES HIGHLIGHTS

- ★ All India Rank will be given for each test.
- ★ Test wise and overall statistics.
- ★ Comparison with toppers.
- ★ Question wise and test wise time analysis & comparison with toppers on time management.

Topic wise Tests

Each test carries 25 marks and 45 minutes duration

Test consists of 5 one mark questions and 10 two marks questions

Tests will be activated at 2:00 pm on scheduled day

Test No	Topic code	Topic	Date of Activation
ME-01	GEM-1 (Engineering Mathematics)	Linear Algebra, Calculus, Differential Equations	02-05-2019
ME-02	GEM-2 (Engineering Mathematics)	Complex Variables, Numerical Methods and Probability and Statistics.	
ME-03	GMC– 1 (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.	
ME-04	GHT – 1 (Heat Transfer)	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-05	GHT – 2 (Heat Transfer)	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-06	GTM – 1 (Theory of Machines and Vibrations)	Displacement, velocity and acceleration analysis of plane mechanisms; dynamic analysis of linkages; flywheels; Cams; gears and gear trains;	10-05-2019
ME-07	GTM – 2 (Theory of Machines and Vibrations)	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-08	GTH – 1 (Thermodynamics)	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-09	GTH – 2 (Thermodynamics)	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-10	GTH – 3 (Thermodynamics)	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-11	GSM – 1 (Strength of Materials)	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	17-05-2019
ME-12	GSM – 2 (Strength of Materials)	Bending and shear stresses; deflection of beams; torsion of circular shafts; Euler's theory of columns; energy methods; thin cylinders.	
ME-13	GFM – 1 (Fluid Mechanics)	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.	
ME-14	GFM – 2 (Fluid Mechanics)	Viscous flow of incompressible fluids, boundary layer, elementary turbulent flow, flow through pipes, head losses in pipes, bends and fittings.	
ME-15	GFM – 3 (Fluid Mechanics)	Dimensional analysis; Turbomachinery: Impulse and reaction principles, velocity diagrams, Pelton-wheel, Francis and Kaplan turbines.	

Test No	Topic code	Topic	Date of Activation
ME-16	GMD – 1 (Machine Design)	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;	24-05-2019
ME-17	GMD – 2 (Machine Design)	Shafts, gears, rolling and sliding contact bearings, brakes and clutches, springs.	
ME-18	GPI – 1 (Production)	<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.	
ME-19	GPI – 2 (Production)	<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.	
ME-20	GPI – 3 (Production)	<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.	
ME-21	GIM – 1 (Industrial Management and Operational Research)	Forecasting models, aggregate production planning, scheduling, materials requirement planning. Inventory Control: Deterministic models; safety stock inventory control systems.	31-05-2019
ME-22	GIM – 2 (Industrial Management and Operational Research)	Linear programming, simplex method, transportation, assignment, network flow models, simple queuing models, PERT and CPM.	
ME-23	GGA-1 (General Aptitude)	English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction.	
ME-24	GGA-2 (General Aptitude)	Numerical computation, numerical estimation, numerical reasoning and data interpretation.	

Subject-wise Grand Tests 1st Series

Each test carries 50 marks and 90 minutes duration

Test consists of 10 one mark questions and 20 two marks questions

Test No	Subject Code	Name of the Subject	Date of Activation
ME-25	GEM	Engineering Mathematics	07-06-2019
ME-26	GMC	Engineering Mechanics	
ME-27	GHT	Heat Transfer	14-06-2019
ME-28	GTM	Theory of Machines and Vibrations	
ME-29	GTH	Thermodynamics	21-06-2019
ME-30	GSM	Strength of Materials	
ME-31	GFM	Fluid Mechanics & Turbo Machinery	28-06-2019
ME-32	GMD	Machine Design	
ME-33	GPI	Production	05-07-2019
ME-34	GIM	Industrial Management and Operational Research	
ME-35	GGA	General Aptitude	

Full Length Mock GATE - 1st Series

As per GATE pattern

Each test carries 100 Marks and 3 Hours duration

Test No	Mock Code		Date of Activation
ME-36	Mock-1	Full Length GATE Mock Test-1	12-07-2019
ME-37	Mock-2	Full Length GATE Mock Test-2	19-07-2019
ME-38	Mock-3	Full Length GATE Mock Test-3	26-07-2019

Subject-wise Grand Tests 2nd Series

Each test carries 50 marks and 90 minutes duration

Test No	Subject Code	Name of the Subject	Date of Activation
ME-39	GEM	Engineering Mathematics	09-08-2019
ME-40	GMC	Engineering Mechanics	
ME-41	GHT	Heat Transfer	16-08-2019
ME-42	GTM	Theory of Machines and Vibrations	
ME-43	GTH	Thermodynamics	23-08-2019
ME-44	GSM	Strength of Materials	
ME-45	GFM	Fluid Mechanics & Turbo Machinery	30-08-2019
ME-46	GMD	Machine Design	
ME-47	GPI	Production	06-09-2019
ME-48	GIM	Industrial Management and Operational Research	
ME-49	GGA	General Aptitude	

Full Length Mock GATE - 2nd Series (As per GATE pattern)

Test No	Mock Code		Date of Activation
ME-50	Mock-4	Full Length GATE Mock Test-4	13-09-2019
ME-51	Mock-5	Full Length GATE Mock Test-5	20-09-2019
ME-52	Mock-6	Full Length GATE Mock Test-6	27-09-2019

Multi-Subject wise Grand Tests

Each test carries 50 marks and 90 minutes duration

Test No	Subject Code	Name of the Subject	Date of Activation
ME-53	GSM & GMC	Strength of Materials & Engineering Mechanics	04-10-2019
ME-54	GFM & GHT	Fluid Mechanics & Turbo Machinery, Heat Transfer	
ME-55	GTH	Thermodynamics	18-10-2019
ME-56	GMD & GTM	Machine Design & Theory of Machines and Vibrations	
ME-57	GPI & GIM	Production & Industrial Management and Operational Research	25-10-2019
ME-58	GEM & GGA	Engineering Mathematics & General Aptitude	

Full Length Mock GATE - 3rd Series (As per GATE pattern)

Test No	Mock Code		Date of Activation
ME-59	Mock-7	Full Length GATE Mock Test-7	08-11-2019
ME-60	Mock-8	Full Length GATE Mock Test-8	15-11-2019
ME-61	Mock-9	Full Length GATE Mock Test-9	22-11-2019
ME-62	Mock-10	Full Length GATE Mock Test-10	11-01-2020
ME-63	Mock-11	Full Length GATE Mock Test-11	21-01-2020
ME-64	Mock-12	Full Length GATE Mock Test-12	28-01-2020

Free Practice Tests of GATE-2019 Online Test Series

Topic wise Tests

Each test carries 25 marks and 45 minutes duration

Test No	Topic code	Topic	Date of Activation
ME-P01	GEM-1 (Engineering Mathematics)	Linear Algebra, Calculus, Differential Equations	02-05-2019
ME-P02	GEM-2 (Engineering Mathematics)	Complex Variables, Numerical Methods and Probability and Statistics.	
ME-P03	GMC- 1 (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.	
ME-P04	GHT – 1 (Heat Transfer)	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-P05	GHT – 2 (Heat Transfer)	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-P06	GTM – 1 (Theory of Machines and Vibrations)	Displacement, velocity and acceleration analysis of plane mechanisms; dynamic analysis of linkages; flywheels; Cams; gears and gear trains;	
ME-P07	GTM – 2 (Theory of Machines and Vibrations)	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-P08	GTH – 1 (Thermodynamics)	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-P09	GTH – 2 (Thermodynamics)	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-P10	GTH – 3 (Thermodynamics)	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 No	Topic code	Topic	Date of Activation
ME-P11	GSM – 1 (Strength of Materials)	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	02-05-2019
ME-P12	GSM – 2 (Strength of Materials)	Bending and shear stresses; deflection of beams; torsion of circular shafts; Euler's theory of columns; energy methods; thin cylinders.	
ME-P13	GFM – 1 (Fluid Mechanics)	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.	
ME-P14	GFM – 2 (Fluid Mechanics)	Viscous flow of incompressible fluids, boundary layer, elementary turbulent flow, flow through pipes, head losses in pipes, bends and fittings.	
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ME-P18	GPI – 1 (Production)	<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.	
ME-P19	GPI – 2 (Production)	<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.	
ME-P20	GPI – 3 (Production)	<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.	
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ME-P29	GTH	Thermodynamics	
ME-P30	GSM	Strength of Materials	
ME-P31	GFM	Fluid Mechanics & Turbo Machinery	
ME-P32	GMD	Machine Design	
ME-P33	GPI	Production	
ME-P34	GIM	Industrial Management and Operational Research	
ME-P35	GGA	General Aptitude	

Multi-Subject wise Grand Tests

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ME-P36	GSM & GMC	Strength of Materials & Engineering Mechanics	02-05-2019
ME-P37	GFM & GHT	Fluid Mechanics & Turbo Machinery, Heat Transfer	
ME-P38	GTH	Thermodynamics	
ME-P39	GMD & GTM	Machine Design & Theory of Machines and Vibrations	
ME-P40	GPI & GIM	Production & Industrial Management and Operational Research	
ME-P41	GEM & GGA	Engineering Mathematics & General Aptitude	

Full Length Mock GATE(As per GATE pattern)

Test No	Mock Code	Name of the Subject	Date of Activation
ME-P42	Mock-1	Full Length GATE Mock Test-1	25-05-2019
ME-P43	Mock-2	Full Length GATE Mock Test-2	
ME-P44	Mock-3	Full Length GATE Mock Test-3	
ME-P45	Mock-4	Full Length GATE Mock Test-4	
ME-P46	Mock-5	Full Length GATE Mock Test-5	
ME-P47	Mock-6	Full Length GATE Mock Test-6	
ME-P48	Mock-7	Full Length GATE Mock Test-7	
ME-P49	Mock-8	Full Length GATE Mock Test-8	
ME-P50	Mock-9	Full Length GATE Mock Test-9	
ME-P51	Mock-10	Full Length GATE Mock Test-10	
ME-P52	Mock-11	Full Length GATE Mock Test-11	
ME-P53	Mock-12	Full Length GATE Mock Test-12	