



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

# GATE - 2019

## Online Test Series

### MECHANICAL ENGINEERING (ME)

**No. of Tests : 64 + *Free* 23 Practice Tests of GATE - 2018 Online Test Series**

	GATE - 19 Test Series	Practice Tests GATE - 18 Test Series
 Topic wise Tests	24	-
 Subject Wise / Multi Subject Grand Tests	28	11
 Full Length Mock Tests	12	12

All tests will be available till GATE -2019 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	02-05-2018
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;	11-05-2018
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	18-05-2018
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;	25-05-2018
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.	01-06-2018
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 1<sup>st</sup> 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	08-06-2018
ME-26	GMC	Engineering Mechanics	
ME-27	GHT	Heat Transfer	15-06-2018
ME-28	GTM	Theory of Machines and Vibrations	
ME-29	GTH	Thermodynamics	22-06-2018
ME-30	GSM	Strength of Materials	
ME-31	GFM	Fluid Mechanics & Turbo Machinery	29-06-2018
ME-32	GMD	Machine Design	
ME-33	GPI	Production	06-07-2018
ME-34	GIM	Industrial Management and Operational Research	
ME-35	GGA	General Aptitude	

**Full Length Mock GATE - 1<sup>st</sup> Series****As per GATE pattern****Each test carries 100 Marks and 3 Hours duration**

Test No			Date of Activation
ME-36	Mock-1	Full Length GATE Mock Test-1	13-07-2018
ME-37	Mock-2	Full Length GATE Mock Test-2	20-07-2018
ME-38	Mock-3	Full Length GATE Mock Test-3	27-07-2018

**Subject-wise Grand Tests 2<sup>nd</sup> 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	10-08-2018
ME-40	GMC	Engineering Mechanics	
ME-41	GHT	Heat Transfer	17-08-2018
ME-42	GTM	Theory of Machines and Vibrations	
ME-43	GTH	Thermodynamics	24-08-2018
ME-44	GSM	Strength of Materials	
ME-45	GFM	Fluid Mechanics & Turbo Machinery	31-08-2018
ME-46	GMD	Machine Design	
ME-47	GPI	Production	07-09-2018
ME-48	GIM	Industrial Management and Operational Research	
ME-49	GGA	General Aptitude	

**Full Length Mock GATE - 2<sup>nd</sup> Series (As per GATE pattern)**

Test No			Date of Activation
ME-50	Mock-4	Full Length GATE Mock Test-4	13-09-2018
ME-51	Mock-5	Full Length GATE Mock Test-5	20-09-2018
ME-52	Mock-6	Full Length GATE Mock Test-6	27-09-2018

**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	05-10-2018
ME-54	GFM & GHT	Fluid Mechanics & Turbo Machinery, Heat Transfer	
ME-55	GTH	Thermodynamics	12-10-2018
ME-56	GMD & GTM	Machine Design & Theory of Machines and Vibrations	
ME-57	GPI & GIM	Production & Industrial Management and Operational Research	26-10-2018
ME-58	GEM & GGA	Engineering Mathematics & General Aptitude	

### Full Length Mock GATE - 3<sup>rd</sup> Series (As per GATE pattern)

Test No			Date of Activation
ME-59	Mock-7	Full Length GATE Mock Test-7	12-11-2018
ME-60	Mock-8	Full Length GATE Mock Test-8	19-11-2018
ME-61	Mock-9	Full Length GATE Mock Test-9	26-11-2018
ME-62	Mock-10	Full Length GATE Mock Test-10	11-01-2019
ME-63	Mock-11	Full Length GATE Mock Test-11	21-01-2019
ME-64	Mock-12	Full Length GATE Mock Test-12	30-01-2019

## Free Practice Tests of GATE-2018 Online Test Series

### 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-P1	GMC	Engineering Mechanics	02-05-2018
ME-P2	GSM	Strength of Materials	
ME-P3	GTH	Thermodynamics	
ME-P4	GFM	Fluid Mechanics	
ME-P5	GHT	Heat Transfer	
ME-P6	GTM	Theory of Machines and Vibrations	
ME-P7	GMD	Machine Design	
ME-P8	GPI	Production	
ME-P9	GIM	Industrial Management and Operational Research	
ME-P10	GEM	Engineering Mathematics	
ME-P11	GGA	General Aptitude	

### Full Length Mock GATE(As per GATE pattern)

Test No			Date of Activation
ME-P12	Mock-1	Full Length GATE Mock Test-1	25-05-2018
ME-P13	Mock-2	Full Length GATE Mock Test-2	
ME-P14	Mock-3	Full Length GATE Mock Test-3	
ME-P15	Mock-4	Full Length GATE Mock Test-4	
ME-P16	Mock-5	Full Length GATE Mock Test-5	
ME-P17	Mock-6	Full Length GATE Mock Test-6	
ME-P18	Mock-7	Full Length GATE Mock Test-7	
ME-P19	Mock-8	Full Length GATE Mock Test-8	
ME-P20	Mock-9	Full Length GATE Mock Test-9	
ME-P21	Mock-10	Full Length GATE Mock Test-10	
ME-P22	Mock-11	Full Length GATE Mock Test-11	
ME-P23	Mock-12	Full Length GATE Mock Test-12	