



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




GATE - 2018



ONLINE TEST SERIES

MECHANICAL ENGINEERING (ME)

—≡ No. of Tests : 62 ≡—

	Chapter / Topic wise Tests	22
	Subject Wise / Multi Subject Grand Tests	28
	Full Length Mock Tests	12

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.

Division of Subjects into Various Topics

Subject & Code	Topic Code	Topic/Chapter
Engineering Mechanics Subject code: GMC	GMC	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.
Strength of Materials Subject code: GSM	GSM-1	Simple stresses, Thermal Stresses, complex stresses and strains, SFD & BMD, Deflections & Slopes, Strain gauges & rosettes, Testing of hardness and impact strength
	GSM-2	Theory of Simple Bending, Centroids, Moment of Inertia, Shear Stress distribution in beams & Torsion, Thin cylinder & Strain Energy, Columns & struts
Theory of Machines and vibrations Subject code: GTM	GTM-1	Analysis of planar mechanisms, Dynamic analysis of slider-crank mechanism, Fly wheels, Vibrations
	GTM-2	Gears & Gear Trains, Cams, Governors, Balancing of reciprocating and rotating masses, Gyroscope.
Machine Design Subject code: GMD	GMD-1	Design for Static Loading, Failure Theories & Variable Loading, Riveted, Bolted & Welded Joints
	GMD-2	Shafts, Sliding and Rolling Contact Bearings, Clutches and Brakes Gears & springs.
Fluid Mechanics Subject code: GFM	GFM-1	Properties of Fluids, Fluid Statics, (Manometry, Buoyancy, Forces on submerged bodies) Fluid Kinematics (Control volume analysis of mass & fluid acceleration) Fluid Dynamics (Control volume analysis of momentum & energy, differential equations of continuity and momentum, Bernoulli's equation)
	GFM-2	Laminar Flow, Turbulent Flow & Boundary Layer, Flow through pipes, Head losses in pipes, bends etc.
	GFM-3	Hydraulic Machines: (Turbo-machinery, Pelton-wheel, Francis and Kaplan turbines impulse and reaction principles, velocity diagrams), Dimensional analysis.

Subject & Code	Topic Code	Topic/Chapter
Heat Transfer Subject code: GHT	GHT-1	Conduction, Fins & Convection
	GHT-2	THC, Radiation & Heat Exchangers
Thermodynamics Subject code: GTH	GTH-1	Basic Concepts, Zeroth Law, Work & Heat, First Law of Thermodynamics, Second Law of Thermodynamics
	GTH-2	Entropy & Availability, Properties of Pure Substances, vapour and gas power cycles, concepts of regeneration and reheat.
	GTH-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.
Production Subject code: GPI	GPI-1	Metal Casting, Welding Metal Forming & Sheet Metal Operations
	GPI-2	Metal Cutting, Machining, Jigs & Fixtures
	GPI-3	Metrology and Inspection CNC M/C, NTM, CIM & Engineering Materials
Industrial Management and Operational Research Subject code: GIM	GIM-1	Inventory Control, Production Planning & Control, Scheduling & Sequencing, Line balancing, Forecasting, Materials Requirement Planning.
	GIM-2	PERT & CPM, Linear Programming, Simplex Transportation & Assignment, Simple Queuing models, Network flow Models

Subject & Code	Topic Code	Topic/Chapter
<p align="center">Engineering Mathematics</p> <p>Subject code:GEM</p>	<p align="center">GEM</p>	<p>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. 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.</p>
<p align="center">General Aptitude</p> <p>Subject code: GGA</p>	<p align="center">GVA</p>	<p>English grammar, sentence completion, verbal analogies, word groups, instructions, critical reasoning and verbal deduction</p>
	<p align="center">GNA</p>	<p>Numerical computation, numerical estimation, numerical reasoning and data interpretation.</p>

Topic/Chapter-wise Tests

Each test carries 25 marks and 45 minutes duration

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

Commences from 10th June, 2017 onwards, the detailed test schedule is as follows:

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

Test No	Topic codes	Date of Activation
ME-01	GMC- 1	10.06.2017
ME-02	GSM – 1	15.06.2017
ME-03	GSM – 2	18.06.2017
ME-04	GFM – 1	21.06.2017
ME-05	GFM – 2	24.06.2017
ME-06	GFM – 3	27.06.2017
ME-07	GTH – 1	30.06.2017
ME-08	GTH – 2	03.07.2017
ME-09	GTH – 3	06.07.2017
ME-10	GMD – 1	09.07.2017
ME-11	GMD – 2	13.07.2017
ME-12	GHT – 1	16.07.2017
ME-13	GHT – 2	19.07.2017
ME-14	GTM – 1	22.07.2017
ME-15	GTM – 2	25.07.2017
ME-16	GPI – 1	28.07.2017
ME-17	GPI – 2	31.07.2017
ME-18	GPI – 3	03.08.2017
ME-19	GIM – 1	05.08.2017
ME-20	GIM – 2	07.08.2017
ME-21	GEM	08.08.2017
ME-22	GVA & GNA	09.08.2017

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

Commences from 12th August, 2017 onwards, the detailed test schedule is as follows:

Test No	Subject codes	Date of Activation
ME-23	GMC	12.08.2017
ME-24	GSM	16.08.2017
ME-25	GTH	19.08.2017
ME-26	GFM	22.08.2017
ME-27	GHT	26.08.2017
ME-28	GTM	29.08.2017
ME-29	GMD	01.09.2017
ME-30	GPI	05.09.2017
ME-31	GIM	08.09.2017
ME-32	GEM	11.09.2017
ME-33	GGA	12.09.2017

Full Length Mock GATE -1st Series

As per GATE Pattern

Each test carries 100 marks and 3 hours duration.

Commences from 15th September, 2017 onwards, the detailed test schedule is as follows:

Test No	Mock GATE codes	Date of Activation
ME-34	Mock – 1	15.09.2017
ME-35	Mock – 2	18.09.2017
ME-36	Mock – 3	21.09.2017

Subject-wise Grand Tests- 2nd Series

Each test carries 50 marks and 90 minutes duration.

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

Commences from 24th September, 2017 onwards, the detailed test schedule is as follows:

Test No	Subject codes	Date of Activation
ME-37	GMC	24.09.2017
ME-38	GSM	27.09.2017
ME-39	GTH	04.10.2017
ME-40	GFM	07.10.2017
ME-41	GHT	10.10.2017
ME-42	GTM	13.10.2017
ME-43	GMD	16.10.2017
ME-44	GPI	20.10.2017
ME-45	GIM	23.10.2017
ME-46	GEM	26.10.2017
ME-47	GGA	27.10.2017

Full Length Mock GATE - 2nd Series

As per GATE Pattern

Each test carries 100 marks and 3 hours duration.

Commences from 31st October, 2017 onwards, the detailed test schedule is as follows:

Test No	Mock GATE codes	Date of Activation
ME-48	Mock – 4	31.10.2017
ME-49	Mock – 5	09.11.2017
ME-50	Mock – 6	16.11.2017

Multi Subject Grand Tests

Each test carries 50 marks and 90 minutes duration.

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

Commences from 20th November , 2017 onwards, the detailed test schedule is as follows:

Test No	Subjects Codes	Date of Activation
ME-51	GSM ,GMC	20.11.2017
ME-52	GFM , GHT	25.11.2017
ME-53	GTH	29.11.2017
ME-54	GMD , GTM	04.12.2017
ME-55	GPI , GIM	08.12.2017
ME-56	GEM , GGA	13.12.2017

Full Length Mock GATE -3rd Series

As per GATE Pattern

Each test carries 100 marks and 3 hours duration.

Commences from 22nd December, 2017 onwards, the detailed test schedule is as follows:

Test No	Mock GATE codes	Date of Activation
ME-57	Mock – 7	22.12.2017
ME-58	Mock – 8	29.12.2017
ME-59	Mock – 9	05.01.2018
ME-60	Mock – 10	13.01.2018
ME-61	Mock – 11	21.01.2018
ME-62	Mock – 12	27.01.2018

NOTE: The Dates of above MOCK GATE Exams may Change according to the GATE – 2018 Exam schedule.