



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

MPSC

MAHARASHTRA ENGINEERING SERVICES

Mains - Online Test Series - 2018

Civil Engineering (Gr. A & Gr.B)

No. of Tests : 14

 Grand Tests	10
 Full Length Mock Tests	4

**All tests will be available till
MES Exam.**

TEST SERIES HIGHLIGHTS

- ★ 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.

Grand Tests

Tests will be activated at 6:00 pm on scheduled day

Test No	Paper	Subject Name	No. of Questions	Max Marks	Duration	Date of Activation
MES(M)-1	Paper-I	Building Construction & Materials	50	100	1 Hour	15-10-2018
MES(M)-2	Paper-II	Surveying + Estimating, Costing and Valuation	50	100	1 Hour	17-10-2018
MES(M)-3	Paper-I	Strength of materials + Theory of structures	50	100	1 Hour	21-10-2018
MES(M)-4	Paper-II	Geo-technical Engineering + Fluid Mechanics	50	100	1 Hour	23-10-2018
MES(M)-5	Paper-I	Structural analysis + Steel structures	50	100	1 Hour	25-10-2018
MES(M)-6	Paper-II	Fluid Machines + Engineering Hydrology + Bridge Engineering	50	100	1 Hour	27-10-2018
MES(M)-7	Paper-I	Design of reinforced concrete structures + Pre-stressed Concrete	50	100	1 Hour	29-10-2018
MES(M)-8	Paper-II	Irrigation Engineering + Highway Engineering	50	100	1 Hour	31-10-2018
MES(M)-9	Paper-I	Construction Planning and Management + Computer-aided analysis and design of structures, application of computer programming to structures + Numerical methods	50	100	1 Hour	02-11-2018
MES(M)-10	Paper-II	Tunnelling + Environmental Engineering	50	100	1 Hour	04-11-2018

Full Length Mock Tests

Test No		Mock codes	No. of Questions	Max Marks	Duration	Date of Activation
MES(M)-11	Paper-I	Full Length Mock-1	100	200	2 Hours	10-11-2018
MES(M)-12	Paper-II	Full Length Mock-1	100	200	2 Hours	11-11-2018
MES(M)-13	Paper-I	Full Length Mock-2	100	200	2 Hours	16-11-2018
MES(M)-14	Paper-II	Full Length Mock-2	100	200	2 Hours	17-11-2018

Note: The Syllabus considered as per Notification of MPSC. ACE Engineering Academy does not take any responsibility for deviations in syllabus in the final MES exam. As per Notification of MPSC each question carries '2' marks and negative marking of 1/4th (i.e. 0.5 Marks) for each wrong answer.

Syllabus for MPSC (Mains), Paper-I

Subject Name	Syllabus
Building Construction & Materials	Properties of wet and hardened concrete, tests on concrete, factors affecting strength of concrete, water-cement ratio, aggregate-cement ratio, mix design, additives, design of form work, types of formwork. Stones, bricks, cements, lime, mortar, timber, plastic, concrete, steel, paints and varnishes. Principles of building planning and design, integrated approach, building byelaws, building services such as vertical transportation, water supply sanitation, thermal ventilation, lighting, acoustics, fire protection, electrical fittings. Foundations, stones, brick and block masonry, steel and reinforced cement concrete structures, floors, doors and windows, roofs, finishing works, water proofing.
Strength of materials	Stresses, strains, principal stresses, bending moments, shear forces and torsion theory, bending theory of beam, deflection of beam, theories of buckling of columns.
Theory of structures	Analysis of beams, frames and trusses, slope deflection method, moment distribution method
Structural analysis	Analysis of arches and suspension cables, influence lines, stiffness and flexibility matrix methods.
Steel structures	Design of bolted and welded connections, columns, footings, trusses, steel beams, plate girders.
Design of reinforced concrete structures (Working stress and limit state)	Design of slab, beams, columns, footing. retaining walls, tanks, building frames, staircases.
Pre-stressed Concrete	Principles of pre-stressing, materials used and their properties, permissible stresses as per I.S. codes, systems of pre-stressing, losses in pre-stress, design of pre-tensioned and post-tensioned beams- simply supported, rectangular and T- beams, cable profile, end block design, bridge girder.
Construction Planning and Management	Elements of scientific management, elements of material management, safety engineering, network analysis, construction equipment, site layout, quality control.
Computer-aided analysis and design of structures, application of computer programming to structures. Numerical methods	Computer-aided analysis and design of structures, application of computer programming to structures. Numerical methods: i. Finding area by Simpson's rule, trapezoidal rule; ii. Finding root of an equation by a) Newton-Raphson techniques b) Bisection method iii. Solution of simultaneous equations by a) Gauss elimination method, b) GaussJordan method, c) Iteration method.

Syllabus for MPSC (Mains), Paper-II

Subject Name	Syllabus
Surveying	Classification of surveys, measurement of distances-direct and indirect methods, optical and electronic devices, prismatic compass, local attraction; plane table surveying, levelling, calculations of volumes, contours, theodolite, theodolite traversing, omitted measurements, trigonometric levelling, tacheometry, curves, photogrammetry, geodetic surveying, hydrographic surveying.
Estimating, Costing and Valuation	Specification, estimation, costing, tenders and contracts, rate analysis, valuation
Geo-technical Engineering	Geotechnical properties, stresses in soil, shear resistance, compaction, consolidation and earth pressure, stability of slopes, bearing capacity, settlements, shallow and deep foundations, cofferdams, ground water control.
Fluid Mechanics	Properties of fluids, fluid statics and buoyancy, kinematics and dynamics, flow measurement, flow in open channel, flow in closed conduits, dimensional and model analysis, losses in pipe flow, siphon, water hammer, boundary layer and control, pipe network.
Fluid Machines	Hydraulic turbines, centrifugal pumps, reciprocating pumps, power house, classification and layout.
Engineering Hydrology	Hydrological cycle, precipitation, evaporation, infiltration, runoff, hydrographs, reservoir planning & sediment control, floods, flood routing, ground water.
Irrigation Engineering	Water requirement of crops, methods of irrigation, lift irrigation, water logging, dams, spillways, energy dissipation, diversion head works, canal and canal structures, cross drainage works, river training works.
Highway Engineering	Planning of highway systems, alignment and geometric design, horizontal and vertical curves, grade separation, materials and different surfaces and maintenance, rigid and flexible pavement, traffic engineering.
Bridge Engineering	Selection of site, types of bridges, discharge, waterway, spans, afflux, scour, standards, specifications, loads and forces, erection of superstructure, strengthening.
Tunnelling	Open cuts, surveys, criteria for selection of size and shapes, driving in soft and hard grounds, mucking, dust control, ventilation, lighting and drainage, special methods of tunnelling.
Environmental Engineering	<p>a) Water Supply Engineering: Sources of supply, design of intakes, estimation of demand, water quality standards, primary and secondary treatment, maintenance of treatment units, conveyance and distribution of treated water, rural water supply.</p> <p>b) Waste Water Engineering & Pollution control: Quantity, collection and conveyance and quality, disposal, design of sewer and sewerage systems, pumping, characteristics of sewage and its treatment, rural sanitation, sources and effects of air and noise pollution, monitoring, standards</p> <p>c) Solid Waste Management: Sources, classification, collection and disposal.</p>