



ACE[®]
Engineering Academy
Leading Institute for ESE/GATE/PSUs

UTTAR PRADESH PUBLIC SERVICE COMMISSION

Assistant Engineer

***Online* Test Series**

Mechanical Engineering - Schedule

No.of Tests : 16	
Subject Wise Tests	12
Full Length Mock Tests	4

All tests will be Active upto UPPSC-AE Examination.

Subject wise Tests

(No.of Questions: 50, Max Marks: 150 and Time duration: 60 Minutes)

Test No	Name of the Subject	Date of Activation
Test-01 (Paper-I)	Engineering Mechanics + Mechanics of Solids: Analysis of force systems, friction, centroid and centre of gravity, trusses and beams, principle of virtual work, kinematics and kinetics of particle, kinematics and kinetics of rigid bodies. Stresses and strains, compound stresses strains, Torsion of circular shafts, stresses and deflections in beams unsymmetrical bending, curved beams, Thin and thick cylinders and spheres, Buckling of columns, Energy methods, helical and leaf springs.	01-12-2021
Test-02 (Paper-II)	Thermodynamics: Thermodynamic systems and processes, properties of pure substances, concepts and applications of zeroth, first and second law of thermodynamics, entropy, availability and irreversibility, detailed analysis of thermodynamic cycles, ideal and real gases, fuels and combustion.	02-12-2021
Test-03 (Paper-I)	Mechanism and Machines + Design of Machine Elements: Velocity and acceleration of links, cams and followers gears and gear trains clutches, belt drives, brakes and dynamometers, Flywheel and governors, balancing of rotating and reciprocating masses, balancing of multi cylinder engines, Free and forced vibration, damped vibration, whirling of shafts. Design for Static and dynamic loading, Theories of failure, fatigue principles of design of rivetted, welded and bolted joints, shafts, springs, bearings, brakes, clutches and flywheels.	03-12-2021
Test-04 (Paper-II)	Fluid Mechanics: Basic concepts and properties of fluids, manometry, fluid statics, buoyancy, equations of motion, Bernoulli's equation and applications, viscous flow of incompressible fluids, laminar and turbulent flows, flow through pipes and head losses in pipes, dimensional analysis, Forces on immersed bodies and boundary layer over a flat plate, isentropic and adiabatic flows, normal shock waves	04-12-2021
Test-05 (Paper-I)	Engineering Materials + Industrial Engineering Crystal systems and crystallography, crystal imperfections, Alloys and phase diagrams, Heat treatment, ferrous and non ferrous metals and alloys, Mechanical properties and testing. Production, planning and control, inventory control and operation, research, CPM and PERT.	05-12-2021
Test-06 (Paper-II)	Heat Transfer: Modes of heat transfer, steady and unsteady heat conduction, thermocouple time constant, critical thickness of insulation, heat transfer from fins, momentum and energy equations for boundary layer flow on a flat plate. Free and forced convection, radiation heat transfer, Stefan-Boltzmann law, shape factor, black and grey body radiation heat exchange, boiling and condensation, heat exchanger analysis, LMTD and NTU – effectiveness methods.	06-12-2021
Test-07 (Paper-I)	Manufacturing: Metal casting, metal forming, metal joining, Mechanics of metal cutting, machining and machine tool operations, unconventional machining methods limits, fits and tolerances, inspection: Surface roughness, comparators, computer integrated manufacturing, Flexible manufacturing systems, jigs and fixtures	07-12-2021
Test-08 (Paper-II)	Energy conversion: SI and CI engines, performance characteristics and testing of IC engines, combustion phenomena in SI and CI engines, carburetion and fuel injection systems, emissions and emission control. Reciprocating and rotary pumps, pelton wheel, Francis and Kaplan turbines, velocity diagrams impulse and reaction principles steam and gas turbines; Rankine and Brayton cycles with regeneration and reheat, high pressure boilers, draft, condensers. Unconventional power systems, including nuclear, MHD, biomass, wind and tidal systems, utilization of solar energy; Reciprocating and rotary compressors; theory and applications, Theory of propulsions, pulsejet and ramjet engines.	08-12-2021
Test-09 (Paper-I)	Mechatronics and Robotics: Microprocessors and microcontrollers, Architecture, Programming, Computer interfacing Programmable logic controller, sensors and actuators, Piezoelectric accelerometers, Hall effect sensors, optical encoder, resolver, Inductosyn, Pneumatic and Hydraulic Actuators, stepper motor, control system, mathematical modeling, control signals, controllability and observability, Robotics: Robot classification, robot specification. Notation: Direct and inverse kinematics homogeneous co-ordinates and arm equation of four axis SCARA Robot.	09-12-2021
Test-10 (Paper-II)	Environmental control: Vapour compression, vapour absorption, steam jet and air refrigeration systems, properties of refrigerant and their nomenclature, psychrometric properties and processes, psychrometric relations, use of psychrometric chart, load estimation, supply air conditions, sensible heat factors, air conditioning system layout, comfort chart, comfort and industrial air conditioning.	10-12-2021
Test-11 (Paper-I)	General Hindi	11-12-2021
Test-12 (Paper-II)	General studies	12-12-2021

(No.of Questions: 25, Max Marks: 75 and Time duration: 30 Minutes)

Full Length Mock Test

(No. of Questions: 125, Max Marks: 375 and Time duration: 150 Minutes)

Test No	Name of the Mock	Date of Activation
Test-13 (Paper-I)	Full Length Mock Test-01	24-12-2021
Test-14 (Paper-II)	Full Length Mock Test-02	31-12-2021
Test-15 (Paper-I)	Full Length Mock Test-03	07-01-2022
Test-16 (Paper-II)	Full Length Mock Test-04	14-01-2022

Note:

The Syllabus considered as per Notification of UPPSC. ACE Engineering Academy does not take any responsibility for deviations in syllabus in the final UPPSC exam. As per Notification of UPPSC each question carries '3' marks and negative marking of 1/3rd (i.e. one mark) for each wrong answer.

The Dates of above Tests may Change according to the UPPSC Exam schedule.

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