IES MASTER

Institute for Engineers (IES/GATE/PSUs)

SSC - JE MAINS TEST SCHEDULE

MECHANICAL ENGINEERING

DATE	TOPIC
TEST-1 2nd Aug. 2021	**N.T.** : TH-1, TH-2, TH-3, ICE-1, ICE-2
	R.T.
TEST-2 8th Aug. 2021	**N.T.** : FMM-1, FMM-2, FMM-3
	R.T. : TH-1, TH-2, ICE-1,ICE-2
TEST-3 16th Aug. 2021	**N.T.** : PROD-1, PROD-2, MS
	R.T. : TH-3, FMM-1
TEST-4 22nd Aug. 2021	**N.T.** : SOM-1, SOM-2, EM
	R.T. : FMM-2, FMM-3, PROD-1
TEST-5 29th Aug. 2021	**N.T.** : TOM-1, TOM-2
	R.T. : MS, PROD-2
TEST-6 5th Sept. 2021	**N.T.** : PPE-1, PPE-2
	R.T. : SOM-1, SOM-2, EM
TEST-7 12th Sept. 2021	**N.T.** : RAC
	R.T. : PPE-1, PPE-2
TEST-8 19th Sept. 2021	**N.T.** : MD-1, MD-2
	R.T. : TH-1, TH-2, TH-3
TEST-9 26th Sept. 2021	**N.T.** :
	R.T. : FMM-1, FMM-2, FMM-3, RAC, PPE-1, PPE-2
TEST-10 3rd Oct. 2021	**N.T.** :
	R.T. : SOM-1, SOM-2, TOM-1, TOM-2, EM, MD-1, MD-2
TEST-11 10th Oct. 2021	**N.T.** :
	R.T. : PROD-1, PROD-2, MS, TH-1, TH-2, ICE-1, ICE-2
TEST-12 17th Oct. 2021	Full Length-1
TEST-13 24th Oct. 2021	Full Length-2
TEST-14 31st Oct. 2021	Full Length-3
TEST-15 7th Nov. 2021	Full Length-4

Test Type	Timing
SSC-JE Mains Test	10:00 A.M. to 12:00 P.M.

Note : The timing of the test may change on certain dates. Prior information will be given in this regard.

*N.T. : New Topic. *R.T. : Revision Topic

Call us : 8010009955, 011-41013406 or Mail us : info@iesmaster.org

Subject Code Details

Thermodynamic	**TH-1**	**TH-2**	
	1st law of Thermodynamics : Definition of stored energy & internal energy. Ist law of Thermodynamics of cyclic process, Non Flow Energy Equation, Flow Energy & Definition of Enthalpy, Conditions for Steady State Steady Flow; Steady State Steady Flow Energy Equation.	2nd law of Thermodynamics : Definition of Sink, Source Reservoir of Heat, Heat Engine, Heat Pump & Refrigerator; Thermal Efficiency of Heat Engines & co-efficient of performance of Refrigerators, Kelvin-Planck & Clausius Statements of 2nd law of Thermodynamics, Absolute or Thermodynamic Scale of temperature, Clausius Integral, Entropy, Entropy change calculation of ideal gas processes. Carnot Cycle & Carnot Efficiency, PMM-2; definition and its impossibility	
	TH-3		
	Properties of Pure Substances : p-v & P-T diagrams of pure substance like H_2O. Introduction of steam table with respect to steam generation process; definition of saturation, wet & superheated status. Definition of dryness fraction of steam, degree of superheat of steam. H-s chart of steam (Mollier's chart).		
IC Engines	**ICE-1**	**ICE-2**	
	Air standard Cycles for IC engines : Otto cycle; plot on P-V, T-S planes; Thermal Efficiency, Diesel Cycle; Plot on P-V, T-S planes; Thermal efficiency	IC Engine Performance: IC Engine Combustion, IC Engine Cooling and Lubrication	
Refrigeration Air Conditioning	**RAC**		
	Refrigeration cycles; Principle of a Refrigeration Plant, VCRS		
Fluid Mechanics and Machinery	**FMM-1**	**FMM-2**	**FMM-3**
	Properties & Classification of Fluid: ideal & real fluids, Newton's law of viscosity, Newtonian and Non-Newtonian fluids, Compressible and incompressible fluids. **Fluid Statics :** Pressure at a point. **Measurement of Fluid Pressure:** Manometers, U-tube , Inclined tube.	**Fluid Kinematics:** Stream line, laminar & turbulent flow, external & internal flow, continuity equation. **Dynamics of ideal fluids:** Bernoulli's equation, Total head; Velocity head; Pressure head; Application of Bernoulli's equation. **Measurement of Flow rate Basic Principles:** Venturimeter, Pitot tube, Orifice meter	**Hydraulic Turbines:** Classifications, Principles. **Centrifufgal Pumps:** Classifications, Principles, Performance.
Power Plant Engineering	**PPE-1**	**PPE-2**	
	Rankine cycle of steam: Simple Rankine cycle plot on P-V, T-S, h-s planes, Rankine cycle efficiency, with & without pump work. Steam Turbines	**Boilers;** Classification; Specification; Fittings & Accessories: Fire Tube & Water Tube Boilers. Air Compressors & their cycles, Nozzles	
Engineering Mechanics	**EM**		
	Equilibrium of Forces, Law of motion, Friction.		
Materials Science	**MS**		
	Classification of Steels : mild steal and alloy steel, Heat treatment of steel.		
Theory of Machine	**TOM-1**	**TOM-2**	
	Concept of simple machine, four bar linkage and link motion, flywheels and fluctuation of energy.	Gears-Types of gears, gear profile and gear ratio calculation, Governors principle and classification, Cams.	
Machine Design	**MD-1**	**MD-2**	
	Power transmission by belts V belts and flat belts, clutches - plate and conical clutch.	Riveted joint, bearings friction in collars and pivots.	
Production	**PROD-1**	**PROD-2**	
	Welding : Arc welding, Gas welding, Resistance welding, Special welding Techniques i.e. TIG, MIG, etc. (Brazing & Soldering), Welding Defects and Testing; Foundry & Casting - methods, defects, different casting processes : Forging, Extrusion, etc.	Metal cutting principles, cutting tools, Basic principles of machining with (i) Lathe (ii) Milling (iii) Driling (iv)Shaping (v) Grinding, machines, tools and manufacturing processes, NDT.	
SOM	**SOM-1**	**SOM-2**	
	Concepts of stress and strain, Elastic limit and elastic constants, Bending moments and shear force diagram.	Stress in composite bars, Torsion of circular shafts, Buckling of columns—Euler's and Rankine's theories, Thin walled pressure vessels.	

For Any Query Regarding The Program
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