



# IES MASTER

Institute for Engineers (IES/GATE/PSUs)

## ESE-2021 Conventional Test Schedule, Civil Engineering

Date	Topic
10th Oct. 2021	TF-1, TF-2, IR-1, IR-2, FM-3, SM-8, DSS-3
	BM-2, SM-1, SM-7, DSS-1, DSS-2, M-3, M-4, SA-1, FM-8
17th Oct. 2021	TF-3, TF-4, IR-3, IR-4, SU-4, M-5, Rail-1
	BM-3, CPM-4, RCC-3, EE-1, EE-6, EE-7, RCC-5, SM-4, M-1, HY-4
24th Oct. 2021	Rail-2, Airport, EE-2, EE-3, SA-4, DSS-6
	CPM-1, SM-5, SM-6, FM-1, EE-5, TF-1, TF-2, SA-3, SU-3, M-2, Rail-1
31st Oct. 2021	Port & Harbour, Tunnel, SU-1
	CPM-3, RCC-4, RCC-6, IR-1, IR-2, FM-6, FM-7, FM-8, DSS-1, DSS-4, DSS-6, SA-2, SA-3, SA-6, SA-5, EE-4, SU-4, SU-5, M-3, SM-1
5th Nov. 2021	Full Length-1 (Test Paper-1 + Test Paper-2)
9th Nov. 2021	Full Length-2 (Test Paper-1 + Test Paper-2)
14th Nov. 2021	Full Length-3 (Test Paper-1 + Test Paper-2)

### Test Type

### Timing

### Day

Conventional Test	_____	10:00 A.M. to 1:00 P.M.	_____	Sunday
Conventional Full Length Test Paper-1	_____	10:00 A.M. to 1:00 P.M.	_____	Sunday
Conventional Full Length Test Paper-2	_____	02:00 P.M. to 5:00 P.M.	_____	Sunday

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

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## Subject Code Details

Structural Analysis (SA)	SA-1	SA-2	SA-3	SA-4	SA-5			SA-6		
	Slope Deflection Method	Moment Distribution Method	Truss, Cables, Arches	Force Method	Influence Load Diagram / Moving Load, Determinacy / Indeterminacy			Stiffness Matrix, Flexible Matrix, Structure Dynamics, Misc.		
SOM (M)	M-1	M-2	M-3				M-4	M-5		
	Concept of Stress and Strain	Shear Force & Bending Moment, Deflection of Beams	Transformation of Stress & Strains, Theory of Failure, Combined Bending & Torsion/ Combined bending & Transverse shear stress/ combined bending & Axial stress, Torsion				Bending Stress, Shear Stress	Columns, Springs, Thick & Thin Shells, Moment of inertia		
RCC & PSC (RCC)	RCC-1		RCC-2	RCC-3	RCC-4	RCC-5	RCC-6			
	Working stress Method, Limit State Method		Earthquake, Beams (LSM/WSM), Lintels	Slab (1-way/2-way), Staircase	Column, Water Tanks	Footing, Retaining walls	Pre stressed Concrete, Cement & Concrete, Masonary Structure			
Design of Steel Structure (DSS)	DSS-1	DSS-2	DSS-3	DSS-4		DSS-5		DSS-6		
	Compression member	Plastic Analysis	Beams	Connections (Direct, Eccentric)		Tension Members		Plate girders, Industrial building, Misc.		
Pert & CPM (CPM)	CPM-1		CPM-2		CPM-3		CPM-4			
	Network analysis, Pert, CPM		Crashing, Updating & Resource Allocation, Rate Analysis, Engineering Economy		Construction Equipment, Equipment Costing		Project Management, Tendering Process & Contract, Quality Control, Land Equisition, Estimation and Project Costing			
Building Material (BM)	BM-1	BM-2		BM-3			BM-4			
	Cement, Timber	Concrete, Agregate, Stones		Brick, Masonry, Lime, Mortar			Steel, Aluminium, Ceramics, Glass, Plastics, FRP, Misc.			
Environmental (EE)	EE-1		EE-2	EE-3	EE-4	EE-5	EE-6	EE-7		
	Characteristics of water, Treatment of water		Distribution of water, Water Demand, Water Souces & Conveyance	Characteristics of Sewage	Disposal of Sewage	Sewer design	Treatment of Sewage	Air Pollution, Noise Pollution, Solid Waste Management		
Fluid Mechanics (FM)	FM-1		FM-2	FM-3	FM-4		FM-5	FM-6	FM-7	FM-8
	Fluid properties, Hydrostatic Pressure, Liquid in relative equilibrium, Buoyancy & Flotation		Fluid Kinematics	Fluid Dynamics, Weirs & Notches	Laminar flow, Turbulent flow, Boundary layer theory, Drag & lift		Flow through Pipes	Open channel flow	Hydraulic Machines	Modal Analysis / Dimensional Analysis
Soil Mechanics (SM)	SM-1		SM-2	SM-3	SM-4	SM-5	SM-6	SM-7	SM-8	
	Soil Water Relationship, Soil Classification, Index Properties, Compaction of Soil		Effective stress, Seepage, Permeability	Consolidation	Shear Stress/ Vertical Stress	Earth Pressure, Stability of Slopes	Shallow Foundation	Deep foundation	Exploration of Soil, Expansive Soil, Geosynthetics, Ground Modification Techniques	
Transportation (TF)	TF-1	TF-2	TF-3					TF-4		
	Geometric Design	Pavement Design	Materials, Construction, Maintenance, Hill roads					Traffic Engineering		
Surveying (SU)	SU-1			SU-2	SU-3		SU-4		SU-5	
	Scale/ Accuracy, Measurements of horizontal distances, Theory of Errors			Angular Measurements, Theodolite	Levelling, Contouring, Curve setting, Measurement of Area & Volume		Triangulation & Traversing, Plane table, Geology		Field Astronomy, GPS, GIS, Photogrammetry, Remote Sensing	
Irrigation (IR)	IR-1			IR-2	IR-3	IR-4				
	Irrigation Methods, Soil Moisture & Plants Relationships, Water Requirements of Crops & Canal Irrigation, Water logging and Soil Reclamation			Canal Design	Gravity dams	Canal Regulation Work, Canal Head Works & Seepage Theory, River Engineering, Cross Drainage Works, Energy Dissipators, Spillways				
Hydrology (HY)	HY-1	HY-2	HY-3	HY-4		HY-5				
	Hydrographs	Flood & Flood Routing	Ground Water	Evapo-Transpiration, Surface Runoff		Abstract from Precipitation, Hydrological Cycle, Precipitation & Measurement, Stream Flow Measurement				
Railways (RAIL)	Rail-1				Rail-2					
	Geometric Design of Track, Traction & Tractive Resistance				Rails, Rail Joints, Sleepers, Fasteners, Ballast, Creep, Point & Crossing, Track Junction, Signalling, Station Yards, Miscellaneous					
Airports / Ports & Harbours / Tunneling										

**For Any Query Regarding The Program**

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