

Lesson Plan for Surveying (TH1), Winter-2026-27

Discipline	Semester	Name of the teaching faculty
Civil Engineering	5th	Biswajit Pandit , Guest Faculty in Civil Engineering
Subject: CEPC301 TH:1 : Surveying		No. of days per Week classes are allotted: 03
No. of weeks-15 weeks		Semester Duration: 20.07.2026 to 05.11.2026
Weeks	Class days	Practical
1ST	1ST	OVERVIEW AND CLASSIFICATION OF SURVEYING Survey- Purpose and Use.
	2ND	Types of surveying- Primary and Secondary, Classification: Plane, Geodetic, Cadastral, Hydrographic, Photogrammetry and Aerial.
	3RD	Principles of Surveying. Scales: Engineer's scale, Representative Fraction (RF) and diagonal scale.
2ND	1ST	Numerical Problems
	2ND	CHAIN SURVEYING Instruments used in chain survey: Metric Chain, Tapes, Arrow, Ranging rod, Line ranger, Off-set rod, Open cross staff, Optical square.
	3RD	Chain survey Station, Base line, Check line, Tie line, Offset, Tie station.
3RD	1ST	Ranging: Direct and Indirect Ranging. Methods of Chaining, obstacles in chaining.
	2ND	Errors in length: Instrumental error, personal error, error due to natural cause, random error.
	3RD	Types of offsets: Perpendicular and Oblique. Conventional Signs, Recording of measurements in a field book.
4TH	1ST	COMPASS TRAVERSE SURVEY - Compass Traversing- open, closed. Technical Terms: Geographic/ True Magnetic Meridians and Bearings, Whole Circle Bearing system and Reduced Bearing system and examples on conversion of given bearing to another bearing (from one form to another), Fore Bearing and Back Bearing, Calculation of internal and external angles from bearings at a station, Dip of Magnetic needle, Magnetic Declination.
	2ND	Numerical Problems
	3RD	Types of Compass-prismatic and surveyor compass. Components of Prismatic Compass and Surveyor compass and their Functions, Methods of using Prismatic Compass- Temporary adjustments and observing bearings.
5TH	1ST	Local attraction, Methods of correction of observed bearings - Correction at station and correction to included angles.
	2ND	Methods of plotting a traverse and closing error, Graphical adjustment of closing error.
	3RD	Numerical Problems
6TH	1ST	LEVELLING AND CONTOURING - Basic terminologies: Level surfaces, Horizontal and vertical surfaces, Datum, Bench Marks- GTS, Permanent, Arbitrary and Temporary, Reduced Level, Rise, Fall, Line of collimation, Station, Back sight, Fore sight, Intermediate sight, Change point, Height of instruments.
	2ND	Types of levels: Dumpy, Tilting, Auto level, Digital level, Components of Dumpy Level and its fundamental axes, Temporary adjustments of Level. Types of Leveling Staff: Self-reading staff and Target staff.
	3RD	Reduction of level by Line of collimation and Rise and Fall Method. Leveling Types: Simple, Differential, Fly, Profile and Reciprocal Leveling.
7TH	1ST	Contour, contour intervals, horizontal equivalent. Uses of contour maps, Characteristics of contours, Methods of Contouring: Direct and indirect.
	2ND	Measurement of Area and Volume Components and use of Digital planimeter. Measurement of area using digital planimeter. Measurement of volume of reservoir from contour map.
	3RD	THEODOLITE SURVEYING Types and uses of Theodolite, Components of transit Theodolite and their functions, Reading the Vernier of transit Theodolite.
8TH	1ST	Technical terms- Swinging, Transiting, Face left, Face right. Fundamental axes of transit Theodolite and their relationship. Temporary adjustment of transit Theodolite.
	2ND	Measurement of horizontal angle- Direct and Repetition method, Errors eliminated by method of repetition. Measurement of magnetic bearing of a line, Prolonging and ranging a line, deflection angle.
	3RD	Measurement of vertical Angle. Theodolite traversing by Included angle method and Deflection angle method.
9TH	1ST	Checks for open and closed traverse, Calculations of bearing from angles.
	2ND	Traverse computation-Latitude, Departure, Consecutive coordinates, Independent coordinates, balancing the traverse by Bowditch's rule and Transit rule, Gale's Traverse table computation. (Simple numerical problems and concept only)
	3RD	Numerical Problems
10TH	1ST	Numerical Problems
	2ND	TACHEOMETRIC SURVEYING AND CURVE SETTING Principles of Tacheometry, Anallatic lens. Tacheometric formula for horizontal distance with telescope horizontal and staff vertical.
	3RD	Field method for determining constants of tacheometer.

11TH	1ST	Determining horizontal and vertical distances with tacheometer by fixed hair method and staff held vertical, Limitations of tacheometry.
	2ND	Types of curves used in roads and railway alignments. Designation of curves. Setting simple circular curve by offsets from long chord and Rankine's method of deflection angles.
	3RD	Types of curves used in roads and railway alignments. Designation of curves.
12TH	1ST	Setting simple circular curve by offsets from long chord and Rankine's method of deflection angles.
	2ND	Numerical Problems
	3RD	ADVANCED SURVEYING EQUIPMENT Use of micro optic Theodolite and Electronic Digital Theodolite.
13TH	1ST	Use of micro optic Theodolite and Electronic Digital Theodolite.
	2ND	Use of Total Station, Use of function keys.
	3RD	Measurements of Horizontal angles, vertical angles, distances and coordinates using Total Station , Traversing
14TH	1ST	Measurements of Horizontal angles, vertical angles, distances and coordinates using Profile survey and contouring with Total Station .
	2ND	REMOTE SENSING, GPS AND GIS Remote Sensing – Overview, Remote sensing system
	3RD	Applications of remote sensing in Civil engineering, land use / Land cover, mapping, disaster management.
15TH	1ST	Use of Global Positioning System (G.P.S.) instruments, and DGPS
	2ND	Geographic Information System (GIS): Over view, Components, Applications, Software for GIS.
	3RD	Introduction to Drone Surveying.




Lesson Plan for Surveying Lab (PR 1), Winter-2026-27

Discipline	Semester	Name of the teaching faculty
Civil Engineering	5th	Biswajit Pandit, Guest Faculty in Civil Engineering
Subject: Surveying Lab (PR-1)		No. of days per Week classes are allotted: 02(2hours/day)
No. of weeks-15 weeks		Semester Duration: 20.07.2026 to 5.11.2026
Weeks	Class days	Practical
1ST	1ST	Introduction on Surveying Experiments
	2ND	Measure distance between two survey stations using chain, tape and ranging rods when two stations are inter visible.
2ND	1ST	Record evaluation
	2ND	Determine area of open field using chain and cross staff survey.
3RD	1ST	Record evaluation
	2ND	Measure Fore Bearing and Back Bearing of survey lines of open traverse using Prismatic Compass.
4TH	1ST	Record evaluation
	2ND	Undertake differential leveling; determine reduced levels by height of instrument method and rise, and fall method using dumpy level/auto level and leveling staff.
5TH	1ST	Undertake differential leveling; determine reduced levels by height of instrument method and rise, and fall method using dumpy level/auto level and leveling staff.
	2ND	Record evaluation
6TH	1ST	Undertake Survey Project with Leveling instrument for Profile leveling and cross-sectioning for a road length of 500 m with cross-
	2ND	Undertake Survey Project with Leveling instrument for Profile leveling and cross-sectioning for a road length of 500 m with cross-
7TH	1ST	Record evaluation
	2ND	Use digital Theodolite as a Tacheometer to compute reduced levels and horizontal distances.
8TH	1ST	Use digital Theodolite as a Tacheometer to compute reduced levels and horizontal distances.
	2ND	Record evaluation
9TH	1ST	Set out a circular curve by Rankine's Method of Deflection Angles.
	2ND	Set out a circular curve by Rankine's Method of Deflection Angles.
10TH	1ST	Record evaluation
	2ND	Use Total station instrument to measure horizontal distances and
11TH	1ST	Use Total station instrument to measure horizontal distances and
	2ND	Record evaluation
12TH	1ST	Use Total station instrument to carry out Survey Project for closed traverse for minimum five sides.
	2ND	Use Total station instrument to carry out Survey Project for closed traverse for minimum five sides.
13TH	1ST	Use DGPS to locate the coordinates of a station
	2ND	Use DGPS to locate the coordinates of a station

14TH	1ST	Record evaluation
	2ND	Preparation of Map using GIS software
15TH	1ST	Preparation of Map using GIS software
	2ND	Record evaluation



Lesson Plan for (PR), Winter-2026-27		
Discipline	Semester	Name of the teaching faculty
Civil Engineering	5th	Biswajit Pandit, Guest Faculty in Civil Engineering
Subject: Building Planning and Drawing Lab -II (PR-2)		No. of days per Week classes are allotted: 02(2hours/day)
No. of weeks-15 weeks		Semester Duration: 20.07.2026 to 5.11.2026
Weeks	Class days	Prcatical
1ST	1ST	COMPUTER AIDED DRAWING Introduction to AutoCAD , Editing /Modifying of existing drawing. Dimensioning, Drawing section lines and Hashed section lines.
	2ND	Writing texts on drawings. Display of drawings on computer screens
2ND	1ST	Making use of different settings of drawings related to Scale unit, Co-ordinate system.
	2ND	Creating and Editing layers , Creating and Editing blocks , Object dimensioning.
3RD	1ST	Details of an underground RCC water tank (such as Sheet No. 19 of SP 34 or any other) Combined detailed drawing of a two storied building with load-bearing wall spread footing and R.C. isolated column footing using Autocad.
	2ND	Details of an underground RCC water tank (such as Sheet No. 19 of SP 34 or any other) Combined detailed drawing of a two storied building with load-bearing wall spread footing and R.C. isolated column footing using Autocad.
4TH	1ST	Record evaluation
	2ND	STRUCTURAL DETAILING Draw details of the following steel structures from the given line diagrams: A steel roof truss with details of bolted or riveted and welded joints and connections including that of the steel column at base level with foundation using Autocad.
5TH	1ST	A steel roof truss with details of bolted or riveted and welded joints and connections including that of the steel column at base level with foundation using Autocad.
	2ND	A steel roof truss with details of bolted or riveted and welded joints and connections including that of the steel column at base level with foundation using Autocad.
6TH	1ST	Record evaluation
	2ND	A two storied steel building frame showing typical details of possible bolted and welded connections including that of column at base with the foundation using Autocad.
7TH	1ST	A two storied steel building frame showing typical details of possible bolted and welded connections including that of column at base with the foundation using Autocad.
	2ND	A two storied steel building frame showing typical details of possible bolted and welded connections including that of column at base with the foundation using Autocad.
	1ST	PLOTTING OF DRAWING a) Architectural views & Drafting views

8TH	2ND	b) 3D Modeling with AutoCAD (Surfaces, Solids) and Rendering.
9TH	1ST	b) 3D Modeling with AutoCAD (Surfaces, Solids) and Rendering.
	2ND	b) 3D Modeling with AutoCAD (Surfaces, Solids) and Rendering.
10TH	1ST	Record evaluation
	2ND	c) Introduction to Revit / Fusion 360 Software for creating Solids.
11TH	1ST	Record evaluation
	2ND	Project Planning & Scheduling using MS Project Software.
12TH	1ST	Project Planning & Scheduling using MS Project Software.
	2ND	Record evaluation
13TH	1ST	Project Planning & Scheduling using MS Project Software.
	2ND	Project Planning & Scheduling using MS Project Software.
14TH	1ST	Record evaluation
	2ND	Project Planning & Scheduling using MS Project Software.
15TH	1ST	Project Planning & Scheduling using MS Project Software.
	2ND	Record evaluation




Lesson Plan for Building Construction (TH-1), Winter-2026-27		
Discipline	Semester	Name of the teaching faculty
Civil Engineering	3rd	Biswajit Pandit, Guest Faculty in Civil Engineering
Subject : Building Construction (TH)		No. of days per Week classes are allotted: 03
No. of weeks-15 weeks		Semester Duration: 20.07.2026 to 5.11.2026
Weeks	Class days	Theory
1ST	1ST	Overview of Building Components Classification of Buildings as per National Building Code Group A to I, as per Types of Constructions- Load Bearing Structure, Framed Structure, Composite Structure.
	2ND	Building Components – Functions of Building Components, substructure – Foundation, Plinth.
	3RD	Superstructure – Walls, Partition wall, Cavity wall, Sill, Lintel, Doors and Windows, Floor
2ND	1ST	Mezzanine floor, Roof, Columns, Beams, Parapet.
	2ND	Construction of Substructure Job Layout: Site Clearance, Layout for Load Bearing Structure and Framed Structure by Center Line
	3RD	Face Line Method, Precautions.
3RD	1ST	Earthwork: Excavation for Foundation, Timbering and Strutting, Earthwork for embankment, Material for plinth Filling
	2ND	Tools and plants used for earthwork. Foundation: Functions of foundation
	3RD	Types of foundation – Shallow Foundation, Stepped Footing, Wall Footing, Column Footing, Isolated and Combined Column Footing
4TH	1ST	Raft Foundation, Grillage Foundation.
	2ND	Deep Foundation – Pile Foundation, Well foundation and Caissons
	3RD	Pumping Methods of Dewatering, Deep wells, Well points, Cofferdams (Introduction only).
5TH	1ST	Construction of Superstructure Stone Masonry: Terms used in stone masonry- facing, backing, hearting, through stone, corner stone, cornice.
	2ND	Types of stone masonry: Rubble masonry, Ashlar Masonry and their types. Joints in stone masonry and their purpose.
	3RD	Selection of Stone Masonry, Precautions to be taken in Stone Masonry Construction.
6TH	1ST	Brick masonry: Terms used in brick masonry- header, stretcher, closer, quoins, course, face, back, hearting, bat bond, joints, lap, frog line, level and plumb.
	2ND	Bonds in brick masonry- header bond, stretcher bond, English bond and Flemish bond. Requirements of good brick masonry.
	3RD	Junctions in brick masonry and their purpose and procedure. Precautions to be observed in Brick Masonry Construction. Comparison between stone and Brick Masonry.
7TH	1ST	Tools and plants required for construction of stone and brick masonry. Hollow concrete block masonry and composite masonry.
	2ND	Scaffolding and Shoring: Purpose, Types of Scaffolding, Process of Erection and Dismantling.
	3RD	Purpose and Types of Shoring. Underpinning.
	1ST	Formwork: Definition of Formwork, Requirements of Formwork,
	2ND	Materials used in Formwork, Types of Formwork, Removal of formwork.

8TH	3RD	Building Communication and Ventilation Horizontal Communication. Doors –Components of Doors, Full Paneled Doors, Part ly Paneled and Glazed Doors, Flush Doors, Collapsible Doors,
9TH	1ST	Rolling Shutters, Revolving Doors, Glazed Doors. Sizes of Door recommended by BIS.
	2ND	Windows. Component of windows, Types of Windows – Full Paneled, Partly Paneled and Glazed, wooden, Steel, Aluminum windows, Sliding
	3RD	Bay win- dow, Corner window, clear storey window, Gable and Dormer window, Skylight. Sizes of Windows recommended by BIS. Ventilators.
10TH	1ST	Fixtures and fastenings for doors and windows
	2ND	Material used and functions of Window Sill and Lintels, Shed / Chajja.
	3RD	Vertical Communication. Means of Vertical Communication- Stair Case, Ramps, Lift, Elevators and Escalators.
11TH	1ST	Terms used in staircase steps, tread, riser, nosing, soffit, waist slab, baluster, balustrade, scotia, hand rails, newel post, landing, headroom, winder
	2ND	Types of staircase (On the basis of shape): Straight, dog-legged, open well, Spiral, quarter turn, bifurcated, Three quarter turn and Half turn, (On the basis of Material): Stone, Brick, R.C.C., wooden and Metal.
	3RD	Floors and Roofs: Types of Floor Finishes and its suitability- Kota, Marble, Granite, Ceramic Tiles, Vitrified, Chequered Tiles, Paver Blocks, Concrete Floors, wooden Flooring, Skirting and Dado.
12TH	1ST	Process of Laying and Construction, Finishing and Polishing of Floors, Roofing Ma terials- RCC, Mangalore Tiles, AC Sheets, G.I. sheets, Corrugated G.I. Sheets, Plastic and Fibre Sheets.
	2ND	Types of Roof: Flat roof, Pitched Roof- King Post truss, Queen Post Truss, terms used in roofs.
	3RD	Wall Finishes: Plastering – Necessity of Plastering, Procedure of Plastering, Single Coat Plaster, Double Coat Plaster, Rough finish, Neeru Finishing and Plaster of Paris (POP).
13TH	1ST	Special Plasters- Stucco plaster, sponge finish, pebble finish. Plaster Board and Wall Claddings. Precautions to be taken in plastering, defects in plastering.
	2ND	Painting – Necessity, Types of painting and procedure of Painting.
	3RD	Painting –Necessity, Surface Preparation for painting, Methods of
14TH	1ST	Revision
	2ND	Revision
	3RD	Revision
15TH	1ST	Revision
	2ND	Revision
	3RD	Revision

Lesson Plan for Engineering Graphics(PR 6), Winter-2026-27		
Discipline	Years	Name of the teaching faculty
E&TC	1ST	Biswajit Pandit, Guest Faculty (Civil Engineering)
Subject: Engineering Graphics(PR 6)		No. of days per Week classes are allotted:- 01(2hours/day)
No. of weeks-32 weeks		Semester Duration: 17-08-2026 to 17-04-2027
Weeks	Class	Practical
1ST	1st	1. Introduction & Demonstration: Identify various sizes of drawing boards, drawing sheets as per BIS. List the types of pencils, instruments, and scales (RF).
2ND	1st	Demonstrate lying of drawing sheet, margin, standard layout. Demonstrate lying of title block as per BIS.
3RD	1st	Folding principle of drawings (blue prints, print outs etc). Check drawing sheet.
4TH	1st	2. Types Of Lines, Lettering & Dimensioning: Demonstrate and explain the use of various types of lines. Demonstrate the principle of single stroke.
5TH	1st	Demonstrate the principle of gothic lettering as per BIS. Demonstrate the principle of numerals as per BIS.
6TH	1st	Introduction to Dimensioning, Unit of Dimensioning.
7TH	1st	General Rules for Dimensioning. 3. Scales: Significance of scales in drawing; different scales.
8TH	1st	Define and draw plain scale. Define and draw diagonal scale.
9TH	1st	Check drawing sheet. 4. Orthographic Projections: Introduction of projections-orthographic,
10TH	1st	Introduction of projections- perspective. Orthographic Projections: isometric : concept and applications.
11TH	1st	Orthographic Projections: oblique: concept and applications. Introduction to orthographic projection.
12TH	1st	Introduction to First angle. Introduction to Third angle method , their symbols.
13TH	1st	Conversion of pictorial view into Orthographic Views – object containing plain surfaces, Conversion of pictorial view into Orthographic Views- slanting surfaces,
14TH	1st	Conversion of pictorial view into Orthographic Views slots, Conversion of pictorial view into Orthographic Views ribs,
15TH	1st	Conversion of pictorial view into Orthographic Views cylindrical surfaces. Check drawing sheet.
16TH	1st	5. Isometric Projections: Draw isometric view & Isometric projection of prism, Draw isometric view & Isometric projection of pyramid,
17TH	1st	Draw isometric view & Isometric projection of cone, Draw isometric view & Isometric projection of cylinder with axis horizontal ,
18TH	1st	Draw isometric view & Isometric projection of vertical with construction of isometric scales. Check drawing sheet.
19TH	1st	6. Practices On AutoCAD Introduction- Components of AutoCAD software window: Title bar
20TH	1st	Introduction- Components of AutoCAD software window: standard tool bar, Introduction- Components of AutoCAD software window: menu bar,
21ST	1st	Introduction- Components of AutoCAD software window: object properties tool bar, Introduction- Components of AutoCAD software window: draw tool bar,
22ND	1st	Introduction- Components of AutoCAD software window: modify tool bar, Introduction- Components of AutoCAD software window: cursor cross hair.
23RD	1st	Command window, status bar, drawing area, UCS icon.

24TH	1st	File features: New file, Saving the file, File features: Creating templates,
25TH	1st	File features: Quit. Setting up new drawing: Units,
26TH	1st	Setting up new drawing: Limits, Setting up new drawing: Grid,
27TH	1st	Setting up new drawing: Snap. Undoing and redoing action.
28TH	1st	AutoCAD Commands: Draw various entities by using commands (Line). Draw various entities by using commands (circle).
29TH	1st	Draw various entities by using commands (arc). Draw various entities by using commands (polygon).
30TH	1st	Draw various entities by using commands (ellipse). Draw various entities by using commands (rectangle).
31ST	1st	Edit command, Dimension commands Modify Commands for two dimensional drafting only.
32ND	1st	Cheack drawing sheet. Revision class.




Lesson Plan for Engineering Mechanics (TH 7), Winter 2026-27

Discipline	Years	Name of the teaching faculty
Electrical Engineering and E&TC Engineering	1ST	Biswajit Pandit, Guest Faculty (Civil Engineering)
Subject: Engineering Mechanics (TH 7)		No. of days per Week classes are allotted: 02(2hours/day)
No. of weeks 32 weeks		Semester Duration: 17-08-2026 to 17-04-2027
Weeks	Class days	Theory
1ST	1ST	Unit:1 (Introduction to Mechanics) 1.1. Significance and relevance of Mechanics, Applied mechanics, Statics, Dynamics, Space, time, mass, particle, flexible body and rigid body.
	2ND	1.2. Scalar and vector quantity, Units of measurement (SI units), Fundamental units and derived units.
2ND	1ST	1.3. Force – unit, representation as a vector and by Bow's notation.
	2ND	1.4. Characteristics and effects of a force, Principle of transmissibility of force.
3RD	1ST	Unit:2 (Force system) 2.1. Force system and its classification.
	2ND	2.2 Resolution of a force – Orthogonal components of a force
4TH	1ST	2.3 Moment of a force, Law of moment, State Varignon's Theorem, Couple and it's moment.
	2ND	2.4 Composition of forces, Resultant force.
5TH	1ST	2.5 Analytical method for determination of resultant for concurrent, non-concurrent and parallel co planar force system
	2ND	2.6 Triangle Law of forces and Polygon Law of forces (Statement Only),
6TH	1ST	Parallelogram law of Forces (Statement and Derivation).
	2ND	2.7 Simple Numerical on above
7TH	1ST	Numerical
	2ND	Numerical
8TH	1ST	Unit:3 (Equilibrium) 3.1 Equilibrium and Equilibrant, Condition of Equilibrium.
	2ND	3.2 Free body and Free body diagram.
9TH	1ST	3.3 Analytical and graphical methods of analyzing equilibrium.
	2ND	3.4 Lami's Theorem – Statement and Explanation.
10TH	1ST	3.5 Application for various engineering problems.
	2ND	3.6 Simple Numerical on above.
11TH	1ST	Numerical
	2ND	3.7 Beam: Types of Loads, Beam, Supports with their Reactions with neat sketch.
12TH	1ST	Numerical
	2ND	Unit:4 (Friction) 4.1 Friction and its relevance in engineering, types.
13TH	1ST	4.2 Laws of friction, limiting equilibrium, limiting friction,
	2ND	co-efficient of friction, angle of friction, angle of repose.
14TH	1ST	4.3 Relation between co-efficient of friction and angle of friction.
	2ND	4.4 Simple Numerical on above
15TH	1ST	4.5 Equilibrium of bodies on level surface subjected to force parallel and inclined to plane.
	2ND	4.6 Equilibrium of bodies on inclined plane subjected to force parallel to the plane only.
16TH	1ST	4.7 Ladder Friction
	2ND	4.8 Simple Numerical on above
17TH	1ST	Unit:5 (Centroid and Centre of Gravity) 5.1 Definition of Centroid, Centroid of geometrical plane figures (square, rectangle)
	2ND	Centroid of geometrical plane figures (triangle, circle, semicircle, quarter circle)
18TH	1ST	5.2 Centroid of composite figures composed of not more than three geometrical figures.
	2ND	5.3 Locate centroid of C, I section.
19TH	1ST	Locate centroid of L and T section.
	2ND	5.4 Definition of Centre of Gravity (C.G.), Centre of Gravity of simple solids (Cube, cuboid, cone)
20TH	1ST	Centre of Gravity of simple solids (cylinder, sphere, hemisphere) (Expression Only) .
	2ND	Unit:6 (Moment of Inertia) 6.1 Definition of Moment of Inertia (M.I.), M.I. of Plane Figures. (rectangle, square)
21ST	1ST	M.I. of Plane Figures (triangle, circle, semicircle, (Only Expression).
	2ND	6.2 Parallel Axis Theorem (Statement and Proof).
22ND	1ST	6.3 Perpendicular Axis Theorem (Statement and Proof).
	2ND	6.4 Determination of Moment of Inertia of Composite Section (I and T-Section).
23RD	1ST	Unit:7 (Simple Lifting Machine) 7.1 Simple lifting machine, load, effort, mechanical advantage, Velocity ratio (V.R.)
	2ND	Efficiency of machines, Applications and advantages.
24TH	1ST	7.2 Law of machine, Ideal machine, friction in machine.
	2ND	Maximum Mechanical advantage and efficiency.
25TH	1ST	7.3 Reversible and non-reversible machines, conditions for reversibility.
	2ND	7.4 Determination of MA, VR and Efficiency of Simple Axle and wheel.
26TH	1ST	Determination of MA, VR and Efficiency of Differential Axle and Wheel.
	2ND	7.5 Determination of MA, VR and Efficiency of Worm and worm wheel.

27TH	1ST	7.6 Determination of MA, VR and Efficiency of Single purchase.
	2ND	Determination of MA, VR and Efficiency of double purchase crab winch.
28TH	1ST	7.7 Determination of MA, VR and Efficiency of Simple Screw Jack.
	2ND	7.8 Determination of MA, VR and Efficiency of 1st System of Pulleys.
29TH	1ST	Determination of MA, VR and Efficiency of 2nd and 3rd System of Pulleys.
	2ND	7.9 Simple Numerical on above.
30TH	1ST	Unit:8 (Gear and Gear Train) 8.1 Gear, Gear Drive, Types of Gear Drive.
	2ND	8.2 Gear Train, Types of Gear Train.
31ST	1ST	8.3 Velocity Ratio of Simple and Compound Gear Train.
	2ND	8.4 Numerical on Simple and Compound Gear Train.
32ND	1ST	Numerical
	2ND	Previous Year Question Solve.


