Discipline :- CIVIL ENGG.	Semester:- 5th	Name of the Teaching Faculty:- IPSITA BEHERA
Subject:- Th1. ENTREPRENEURSHIP and MANAGEMENT & SMART TECHNOLOGY	No of Days/per Week Class Allotted :- 5	Semester From Semester From:- 1st October 2021 To:- 31st January, 2022 No of Weeks:- 19
Week	Class Day	Theory/ Practical Topics
1st	1st	Entrepreneurship Concept /Meaning of Entrepreneurship
	2nd	Need of Entrepreneurship
	3rd	Characteristics, Qualities and Types of entrepreneur, Functions
	4th	Barriers in entrepreneurship
2nd	1	Entrepreneurs vrs. Manager
	2nd	Forms of Business Ownership: Sole proprietorship, partnership forms and others
	3rd	Types of Industries, Concept of Start-ups
	4th	Entrepreneurial support agencies at National, State, District Level(Sources): DIC, NSIC,OSIC, SIDBI, NABARD, Commercial Banks, KVIC etc.
3rd	1th	Entrepreneurial support agencies at National, State, District Level(Sources): DIC, NSIC,OSIC, SIDBI, NABARD, Commercial Banks, KVIC etc.
	2nd	Technology Business Incubators (TBI) and Science and Technology Entrepreneur Parks
	3rd	Market Survey and Opportunity Identification (Business Planning) Business Planning
	4th	SSI, Ancillary Units,
4th	1st	Tiny Units, Service sector Units
	2nd	Time schedule Plan, Agencies to be contacted for Project Implementation
	3rd	Assessment of Demand and supply and Potential areas of Growth
	4th	Identifying Business Opportunity
5th	1st	Final Product selection
	2nd	Project report Preparation Preliminary project report
	3rd	Detailed project report,
	4th	Techno economic Feasibility
6th	1st	Project Viability
	2nd	Management Principles Definitions of management
	3rd	Principles of management
	4th	Functions of management (planning, organising, staffing, directing and controlling etc.)
7th	1st	Functions of management (planning, organising, staffing, directing and controlling etc.)
	2nd	Level of Management in an Organisation
	3rd	Functional Areas of Management a) Production management Functions, Activities

		Productivity
	4th	Quality control Production Planning and control
8th	1st	 b) Inventory Management Need for Inventory management Models/Techniques of Inventory management
	2nd	 Financial Management Functions of Financial management Management of Working capital
	3rd	Costing (only concept) Break even Analysis
	4th	Brief idea about Accounting Terminologies: Book Keeping, Journal entry, Petty Cash book, P&L Accounts, Balance Sheets(only Concepts
9th	1st	Marketing Management Concept of Marketing and Marketing Management
	2nd	Marketing Techniques (only concepts) Concept of 4P s (Price, Place, Product, Promotion)
	3rd	Human Resource Management Functions of Personnel Management
10th	1st	Manpower Planning, Recruitment, Sources of manpower, Selection process, Method of Testing, Methods of Training & Development, Payment of Wages
	2nd	Leadership and Motivation Leadership Definition and Need/Importance Qualities and functions of a leader
	3rd	Manager Vs Leader Style of Leadership (Autocratic, Democratic, Participative)
	4th	b) Motivation Definition and characteristics Importance of motivation
11th	1st	Factors affecting motivation Theories of motivation (Maslow)
	2nd	Methods of Improving Motivation Importance of Communication in Business
	3rd	Types and Barriers of Communication
	4th	Work Culture, TQM & Safety Human relationship and Performance in Organization
12th	1st	Relations with Peers, Superiors and Subordinates
	2nd	TQM concepts: Quality Policy, Quality Management, Quality system
	3rd	Accidents and Safety, Cause, preventive measures,
	4th	General Safety Rules , Personal Protection Equipment(PPE)
13th	1st	Legislation a) Intellectual Property Rights(IPR)
	2nd	Patents, Trademarks, Copyrights
	3rd	b) Features of Factories Act 1948 with Amendment (only salient points)
	4th	c) Features of Payment of Wages Act 1936 (only salient points)
14th	1st	Smart Technology Concept of IOT, How IOT works

	2nd	Components of IOT, Characteristics of IOT, Categories of IOT
	3rd	Applications of IOT- Smart Cities, Smart Transportation, Smart Home, Smart Healthcare, Smart Industry, Smart Agriculture, Smart Energy Management etc.
	4th	Applications of IOT- Smart Cities, Smart Transportation, Smart Home, Smart Healthcare, Smart Industry, Smart Agriculture, Smart Energy Management etc.
15th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
16th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
17th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
18th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
19th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE

LESSON PLAN OF 5th SEMESTER CIVIL ENGINEERING(2021-22)

Discipline :- CIVIL	Semester:-5TH	Name of the Teaching Faculty:-Soumyakanta sahoo (LECTURER CIVIL)
Subject:- ESTIMATION AND COST EVALUATION-II	No of Days/per Week Class Allotted :-04	Semester From:- **1st October,2021** To:- **31st January ,2022** No of Weeks:- **19**

Week	Class Day	Theory/ Practical Topics
1st	1st	Detailed estimate of culverts and bridges 1.1 Detailed estimate of a simple Hume pipe culvert with right angled wing walls
	2nd	problem
	3rd	problem
	4th	problem
2nd	1st	problem
	2nd	1.2 RCC deck slab culvert with right angled wing wall
	3rd	problem
	4th	problem
3rd	1st	problem
	2nd	problem
	3rd	1.3RCC deck slab culvert with splayed wing wall
	4th	problem
4th	1st	problem
	2nd	problem
	3rd	problem
	4th	1.4Quantity of steel for deck slab with bar bending schedule of the above jobs
5th	1st	problem
	2nd	problem
	3rd	problem
	4th	problem
6th	1st	2.Estimate of irrigation structures 2.1 Detailed estimate of simple type of vertical fall to given specification
	2nd	problem
	3rd	problem
	4th	problem
7th	1st	problem
	2nd	problem
	3rd	2.3Detailed estimate of siphon well drop to given specification.
	4th	problem
8th	1st	problem
	2nd	problem
	3rd	problem
	4th	problem
9th	1st	3. Detailed estimate of roads 3.1 Detail estimate of a water bound macadam road
	2nd	problem

	3rd	problem
	4th	problem
10th	1st	problem
	2nd	problem
	3rd	3.2 Detailed estimate of a National Highway in cutting / filling
	4th	problem
11th	1st	problem
	2nd	problem
	3rd	problem
	4th	problem
12th	1st	PWD accounts works 4.1 Works 1.1 Classification of work-original, major, petty, repair work, annual repair, special repair, quadrantal repair
	2nd	Method of execution of works through the contractors, departmentally, contract and agreement, work order, item rate contract, lump sum contract, labour contract and daily labour, piece work agreement, scheduled contract, cost plus percentage contract
	3rd	Accounts of works 4.2.1 Explanation of various terms Administrative approval, technical sanction, contingency budget, tender, preparation of notice inviting tender, receiving of quotations, earnest money, security deposit, advance payment, on account payment, intermediate payment
	4th	final payment, running bill, final, regular and temporary establishment, cash, major & subhead of account, temporary advance, issue rate, storage, supervision charges, suspense account, debit, credit, book transfer, voucher and related accounts
13th	1st	4.2.2 Measurement book use & maintenance, procedure of marking entries of measurement of work and supply of materials, labour employed, standard measurement books and common irregularity
	2nd	**4.2.3 Master roll : Its preparation & use for making payment of pay & wages**
	3rd	4.2.4 Acquitance Roll : Its preparation & use for making payment of pay & wages
	4th	**4.2.5 Labour & labour report, method of labour payment, use of forms and necessity of submission**
14th	1st	4.2.6 Classification of stores, receipt / issue statement on standard form, method of preparation of stock account
	2nd	preparation and submission of returns, verification of stocks, shortage and excess
	3rd	Doubt clearing classes
	4th	Previous year question answer discussion
15th	1st	REVISION
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
16th	1st	REVISION
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
17th	1st	REVISION
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE

	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
18th	1st	REVISION
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
19th	1st	REVISION
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE

LESSON PLAN OF 5TH SEMESTERCIVIL ENGINEERING(2021-22)

Discipline :- CIVIL	Semester:-5TH	Name of the Teaching Faculty Swastik Pradhan
Subject:- Railway and bridge engg.	No of Days/per Week Class Allotted :-04	Semester From:- **1st October 2021** To:- **31st January, 2022** No of Weeks:- **19**

Week	Class Day	Theory/ Practical Topics
1st	1st	Introduction : Railway terminology
	2nd	Advantages of railways Classification of Indian Railways
	3rd	Permanent way Definition
	4th	components of a permanent way
2nd	1st	Concept of gauge
	2nd	different gauges prevalent in India
	3rd	suitability of these gauges under different
	4th	Track materials :Rails Functions and requirement of rails
3rd	1st	Types of rail sections , length of rails Rail joints – types, requirement of an ideal joint
	2nd	Purpose of welding of rails & its advantages Creep definition, cause & prevention
	3rd	Sleepers Definition, function & requirements of sleepers 3.2.2 Classification of sleepers Advantages & disadvantages of different types of sleepers
	4th	Ballast Functions & requirements of ballast Materials for ballast
4th	1st	Fixtures for Broad gauge connection of rails to sleepers
	2nd	Geometric for Broad gauge Typical cross – sections of single
	3rd	double broad gauge railway track in cutting
	4th	embankment
5th	1st	Permanent & temporary land width
	2nd	Gradients for drainage
	3rd	Super elevation – necessity & limiting valued
	4th	Numerical problem
6th	1st	Numerical problem
	2nd	Numerical problem
	3rd	Numerical problem
	4th	Points and crossings
7th	1st	Definition,
	2nd	necessity of Points and crossings
	3rd	Types of points

	4th	Types of crossings with tie diagrams
8th	1st	diagrams
	2nd	Laying & maintenance of track
	3rd	Methods of Laying
	4th	maintenance of track
9th	1st	Details of a permanent way inspector
	2nd	Section – B : BRIDGES Introductions Components of a bridge
	3rd	Classification of bridges. Requirements of an ideal bridge
	4th	Bridge Site investigation, hydrology & planning Selection of bridge site
10th	1st	Bridge alignments
	2nd	Determination of flood discharge
	3rd	Waterway & economic span
	4th	Afflux, clearance & free board Collection of bridge design data & sub surface investigation
11th	1st	Bridge foundation
	2nd	Scour depth minimum depth of foundation Types of bridge
	3rd	pile foundation-, pile driving,
	4th	well foundation – sinking of wells caission foundation
12th	1st	foundations – spread foundation
	2nd	Coffer dams
	3rd	Bridge substructure and approaches Types of piers
	4th	Types of abutments
13th	1st	Types of wing walls
	2nd	**10.4 Approaches**
	3rd	11.0Permanent bridges 11.1 Masonry bridges
	4th	**11.2 Steel bridges – classification with sketches**
14th	1st	11.3 Concrete bridges – classification, brief description with sketches 11.4 IRC bridge loading
	2nd	12.Culvert & cause ways 12.1 Types of culvers - brief description
	3rd	12.2 Types of causeways - brief description
	4th	PREVIOUS YEAR QUESTION DISCUSSION
15th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
16th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
17th	1st	PREVIOUS YEAR QUESTIONS PRACTICE

	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
18th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
19th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE

LESSON PLAN OF 5TH SEMESTER CIVIL ENGINEERING(2021-22)

Discipline :- CIVIL	Semester:-5TH	Name of the Teaching Faculty ANANTA BISWAL
Subject:- STRUCTURAL DESIGN– II	No of Days/per Week Class Allotted :-04	Semester From:- **1st October 2021** To:- **31st January, 2022** No of Weeks:- 15

Week	Class Day	Theory/ Practical Topics
1st	1st	1.0 Introduction: Common steel structures, Advantages & disadvantages of steel structures. Types of steel, properties of structural steel.
	2nd	Rolled steel sections, special considerations in steel design. Loads and load combinations.
	3rd	Structural analysis and design philosophy. Brief review of Principles of Limit State design
	4th	2.0Structural Steel Fasteners and Connections Classification of bolts, advantages and disadvantages of bolted connections.
2nd	1st	Different terminology, spacing and edge distance of bolt holes. Types of bolted connections.
	2nd	Types of action of fasteners, assumptions and principles of design. Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity)
	3rd	reduction factors, and shear capacity of HSFG bolts. Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)
	4th	Efficiency of a joint .Welded Connections: Advantages and Disadvantages of welded connection
3rd	1st	Types of welded joints and specifications for welding.
	2nd	Design stresses in welds
	3rd	Strength of welded joints. Reduction of design stresses for long joints
	4th	03.Design of Steel tension Members
4th	1st	Common shapes of tension members.
	2nd	Design strength of tension members
	3rd	yielding of gross cross section, rupture of critical section
	4th	

		the concept of block shear
5th	1st	Maximum values of effective slenderness ratio
	2nd	Analysis of tension members
	3rd	Design of tension members
	4th	04.Design of Steel Compression members
6th	1st	Common shapes of compression members
	2nd	Bulking class of cross sections.
	3rd	slenderness ratio
	4th	Design compressive stress
7th	1st	strength of compression members.
	2nd	Analysis of compression members
	3rd	Design of compression members (axial load only). Analysis
	4th	5.0Steel Column bases and foundations
8th	1st	Types of column bases ,their suitability
	2nd	Design of slab base Design of slab base (subjected to axial loading) with concrete footing
	3rd	Design of gusseted base
	4th	Design of gusseted base subjected to axial loading Design of gusseted base with concrete footing
9th	1st	6.0Design of Steel beams Common cross sections
	2nd	their classification
	3rd	Plastic moment capacity of sections, moment capacity and shear resistance.
	4th	Deflection limits, web buckling and web crippling.
10th	1st	Design of laterally supported beams against bending and shear.
	2nd	Types of built up sections
	3rd	design of simple built up sections using flange plates with I-sections or web plates.
	4th	.7.0 Design of Tubular Steel structures
11th	1st	Tube columns and compression members, crinkling Round tubular sections, permissible stresses
	2nd	Tube tension members and tubular roof trusses.
	3rd	Joints in tubular trusses Design of tubular beams and purlins
	4th	8.0Design of Timber Structures

		Types of timber
12th	1st	Types of grading of timber
	2nd	Types of defects,
	3rd	Types of permissible stresses .
	4th	. Design of axially loaded timber columns solid, box
13th	1st	built up section except spaced columns
	2nd	Design of simple timber structural elements in flexure Solid sections & flitched beams
	3rd	form factor and moment of resistance of built-up sections
	4th	check for shear, bearing and deflection
14th	1st	9.0Design of Masonry Structures Design consideration for masonry walls
	2nd	, Load bearing walls -Permissible stresses Slenderness ratio, Effective length, Effective height
	3rd	Effective thickness, Eccentricity of loads, Grade of mortar
	4th	Non-Load bearing walls – Panel walls, Curtain walls, Partition walls. . Design consideration for masonry columns, piers and buttresses
15th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
16th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
17th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
18th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
19th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE

	4th	PREVIOUS YEAR QUESTIONS PRACTICE

LESSON PLAN OF 5TH SEMESTER CIVIL ENGINEERING(2020 -21)

Discipline :- CIVIL ENGG	Semester:-5TH	Name of the Teaching Faculty **SUMAN SAHOO**
Subject:- Water Supply & Waste Water Engineering	No of Days/per Week Class Allotted :-05	Semester From:- **1st October 2021** To:- **31st January, 2022** No of Weeks:- **19**

Week	Class Day	Theory/ Practical Topics
1st	1st	**Introduction to Water Supply, Quantity and Quality** Necessity of treated water supply
	2nd	Per capita demand, variation in demand and factors affecting demand
	3rd	Methods of forecasting population
	4th	Numerical problems using different methods
	5th	Numerical problems using different methods
2nd	1st	Impurities in water – organic and inorganic, Harmful effects of impurities
	2nd	Analysis of water –physical, chemical and bacteriological
	3rd	Water quality standards for different uses
	4th	**Sources and Conveyance of water**: Surface sources – Lake, stream, river and impounded reservoir
	5th	Underground sources – aquifer type & occurrence – Infiltration gallery, infiltration well, springs, well
3rd	1st	Yield from well- method s of determination, Numerical problems using yield formulae (deduction excluded)
	2nd	Intakes – types, description of river intake, reservoir intake, canal intake
	3rd	Pumps for conveyance & distribution – types, selection, installation.
	4th	Pipe materials – necessity, suitability, merits & demerits of each type
	5th	Pipe joints – necessity, types of joints, suitability, methods of jointing
4th	1st	Laying of pipes – method
	2nd	**Treatment of water** Flow diagram of conventional water treatment system
	3rd	Treatment process /units: Aeration ; Necessity
	4th	Plain Sedimentation : Necessity, working principles
	5th	Sedimentation tanks – types, essential features, operation & maintenance
5th	1st	Sedimentation with coagulation: Necessity, principles of coagulation, types of coagulants

	2nd	Flash Mixer, Flocculator, Clarifier (Definition and concept only)
	3rd	Filtration : Necessity, principles, types of filters
	4th	Slow Sand Filter, Rapid Sand Filter
	5th	Pressure Filter – essential features
6th	1st	Disinfection : Necessity, methods of disinfection
	2nd	Chlorination – free and combined chlorine demand, available chlorine, residual chlorine, pre-chlorination, break point chlorination, super- chlorination
	3rd	Softening of water – Necessity, Methods of softening – Lime soda process and Ion exchange method (Concept Only
	4th	**Distribution system And Appurtenance in distribution system:** General requirements, types of distribution system
	5th	types of distribution system- direct and combined
7th	1st	Methods of supply – intermittent and continuous
	2nd	Distribution system layout – types, comparison, suitability
	3rd	Valves-types, features, uses
	4th	purpose-sluice valves, check valves, air valves, scour valves
	5th	Fire hydrants, Water meters
8th	1st	**W/s plumbing in building :** Method of connection from water mains to building supply
	2nd	General layout of plumbing arrangement for water supply in single storied and multi-storied building as per I.S. code.
	3rd	I**ntroduction** Aims and objectives of sanitary engineering
	4th	Definition of terms related to sanitary engineering
	5th	Systems of collection of wastes– Conservancy and Water Carriage System
9th	1st	features, comparison, suitability
	2nd	**Quantity and Quality of sewage** Quantity of sanitary sewage – domestic & industrial sewage, variation in sewage flow
	3rd	numerical problem on computation quantity of sanitary sewage.
	4th	-------do--------
	5th	Computation of size of sewer, application of Chazy's formula
10th	1st	Limiting velocities of flow : self-cleaning and scouring
	2nd	General importance, strength of sewage, Characteristics of sewage-physical, chemical & biological
	3rd	Concept of sewage-sampling, tests for – solids, pH
	4th	dissolved oxygen, BOD, COD
	5th	**Sewerage system** Types of system-separate, combined, partially separate
11th	1st	features, comparison between the types, suitability

	2nd	Shapes of sewer – rectangular, circular
	3rd	avoid-features, suitability
	4th	Laying of sewer-setting out sewer alignment
	5th	**Sewer appurtenances and Sewage Disposal:** Manholes -types, features, location, function
12th	1st	Lamp holes – types, features, location, function
	2nd	Inlets– features, location, function
	3rd	Grease & oil trap – features, location, function
	4th	Storm regulator, inverted siphon – features, location, function
	5th	Disposal on land – sewage farming, sewage application and dosing,
13th	1st	sewage sickness-causes and remedies
	2nd	Disposal by dilution – standards for disposal in different types of water bodies, self purification of stream
	3rd	**Sewage treatment :** Principles of treatment, flow diagram of conventional treatment
	4th	-------do--------
	5th	Primary treatment – necessity, principles, essential features, functions
14th	1st	-------do--------
	2nd	Secondary treatment – necessity, principles, essential features, functions
	3rd	-------do--------
	4th	**Sanitary plumbing for building :** Requirements of building drainage, layout of lavatory blocks in residential buildings, layout of building drainage
	5th	Plumbing arrangement of single storied & multi storied building as per I.S. code practice
15th	1st	Sanitary fixtures – features, function, and maintenance and fixing of the fixtures – water closets,
	2nd	flushing cisterns, urinals, inspection chambers, traps, anti-syphonage pipe
	3rd	PREVIOUS YEAR QUESTION PRACTICE
	4th	PREVIOUS YEAR QUESTION PRACTICE
	5th	DOUBT CLEARING CLASS
16th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
17th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
18th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE
	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE
19th	1st	PREVIOUS YEAR QUESTIONS PRACTICE
	2nd	PREVIOUS YEAR QUESTIONS PRACTICE

	3rd	PREVIOUS YEAR QUESTIONS PRACTICE
	4th	PREVIOUS YEAR QUESTIONS PRACTICE