

GANDHI INSTITUTE OF ELECTRICAL ENGINEERING

**DEPARTMENT OF ELECTRICAL
ENGINEERING**

LESSON PLAN

SUBJECT- CIRCUIT AND NETWORK THEORY
NAME OF THE FACULTY-

BRANCH- EE
SEMESTER-3RD

UNIT	DATE	LECTURE NUMBER	TOPIC TO BE COVERED
1			MAGNETIC CIRCUITS
	01/09/20	1	INTRODUCTION TO MAGNETIC CIRCUIT, MAGNETIZING FORCE , INTENSITY, MMF, FLUX AND THEIR RELATIONS
	02/09/20	2	CONCEPT OF PERMEABILITY, RELUCTANCE AND PERMEANCE
	03/09/20	3	PRINCIPLE OF DUALITY, LIST OF DUAL ELEMENTS, ANALOGY BETWEEN ELECTRIC AND MAGNETIC CIRCUITS
	04/09/20	4	MAGNETIZATION CURVE OF DIFFERENT MAGNETIC MATERIALS, AND B-H CURVE
	05/09/20	5	CONCEPT OF SERIES AND PARALLEL MAGNETIC CIRCUITS
	08/09/20	6	CONCEPT OF HYSTERESIS LOOP
	09/09/20	7	SOLVE NUMERICALS
2			COUPLED CIRCUITS
	10/09/20	8	CONCEPT OF SELF INDUCTANCE AND MUTUAL INDUCTANCE
	11/09/20	9	CONCEPTS OF CONDUCTIVELY COUPLED CIRCUIT AND MUTUAL IMPEDANCE
	12/09/20	10	CONCEPT OF DOT CONVENTION IN COUPLED COILS AND MODELING OF COUPLED CIRCUITS
	15/09/20	11	COEFFICIENT OF COUPLING
	16/09/20	12	CONCEPTS OF SERIES AND PARALLEL CONNECTION OF COUPLED INDUCTORS .
	18/09/20	13	ADDITIONAL EXAMPLES DISCUSSION
	19/09/20	14	SOLVE NUMERICAL PROBLEM
3			CIRCUIT ELEMENTS AND ANALYSIS
	22/09/20	15	ACTIVE, PASSIVE, UNILATERAL & BILATERAL, LINEAR & NON-LINEAR ELEMENTS
	23/09/20	16	CONCEPT OF MESH ANALYSIS, MESH EQUATIONS BY INSPECTION
	24/09/20	17	CONCEPTS OF SUPER MESH AND IT'S PROBLEM DISCUSSION
	25/09/20	18	CONCEPT OF NODAL ANALYSIS, NODAL EQUATIONS BY INSPECTION
	26/09/20	19	CONCEPT SUPER NODE ANALYSIS AND IT'S PROBLEM DISCUSSION
	29/09/20	20	CONCEPTS OF SOURCE TRANSFORMATION TECHNIQUE
	30/09/20	21	SOLVE NUMERICAL PROBLEM
	/10/20	22	SOLVE NUMERICALS
4			NETWORK THEOREMS
	01/10/20	23	STAR TO DELTA AND DELTA TO STAR TRANSFORMATION
	03/10/20	24	SOLVE NUMERICAL PROBLEM
	06/10/20	25	STATEMENT OF SUPERPOSITION THEOREM, EXPLANATION, STEP FOR SOLUTION OF A NETWORK UTILIZING THE PRINCIPLE OF SUPERPOSITION
	07/10/20	26	SOLVE NUMERICAL PROBLEM
	09/10/20	27	STATEMENT OF THEVENIN'S THEOREM, EXPLANATION, STEPS FOR SOLUTION OF A NETWORK UTILIZING THEVENIN'S THEOREM AND DIFFERENT METHODS OF FINDING R_{TH}

	10/10/20	28	SOLVE NUMERICAL PROBLEM
	13/10/20	29	STATEMENT OF NORTON'S THEOREM, EXPLANATION, STEPS FOR SOLUTION OF A NETWORK UTILIZING NORTON'S THEOREM
	14/10/20	30	STATEMENT OF MAXIMUM POWER TRANSFER THEOREM, EXPLANATION, STEPS FOR SOLUTION OF A NETWORK UTILIZING MAXIMUM POWER TRANSFER THEOREM
	15/10/20	31	SOLVE NUMERICAL PROBLEM
5			AC CIRCUIT AND RESONANCE
	16/10/20	32	INTRODUCTION TO A.C CIRCUIT AND SERIES AND PARALLEL A.C CIRCUIT, CURRENT AND VOLTAGE DIVISION IN A.C CIRCUIT
	17/10/20	33	CONCEPT OF A.C THROUGH SERIES R-L, R-C, AND R-L-C CIRCUIT
	20/10/20	34	CONCEPT OF A.C THROUGH PARALLEL R-L, R-C AND R-L-C CIRCUIT
	21/10/20	35	SOLUTION OF PROBLEM OF A.C THROUGH R-L, R-C, AND R-L-C SERIES CIRCUIT BY COMPLEX ALGEBRA METHOD
	22/10/20	36	SOLUTION OF PROBLEM OF A.C THROUGH R-L, R-C, AND R-L-C PARALLEL CIRCUIT BY COMPLEX ALGEBRA METHOD
	03/11/20	37	INSTANTANEOUS POWER IN A.C CIRCUIT, POWER FACTOR, POWER TRIANGLE
	04/11/20	38	APPARENT POWER, ACTIVE POWER, REACTIVE POWER, COMPLEX POWER
	05/11/20	39	SERIES RESONANCE
	06/11/20	40	PARALLEL RESONANCE
	07/11/20	41	CONCEPT OF BANDWIDTH, SELECTIVITY AND Q-FACTOR IN SERIES CIRCUIT
	10/11/20	42	SOLVE NUMERICAL PROBLEM
	11/11/20	43	CLASS TEST
6			POLYPHASE CIRCUIT
	12/11/20	44	CONCEPT OF POLY-PHASE SYSTEM AND PHASE SEQUENCE
	13/11/20	45	RELATION BETWEEN PHASE AND LINE QUANTITIES IN STAR AND DELTA CONNECTION
	17/11/20	46	CONCEPT OF POWER AND POWER EQUATION IN 3-PHASE BALANCED CIRCUIT
	18/11/20	47	SOLVE NUMERICAL PROBLEM
	19/11/20	48	MEASUREMENT OF 3-PHASE POWER BY TWO WATT METER METHOD
	20/11/20	49	SOLVE NUMERICAL PROBLEM
	21/11/20	50	CLASS TEST QUESTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES
7			TRANSIENT
	24/11/20	51	CONCEPT OF STEADY STATE AND TRANSIENT STATE RESPONSE OF FIRST ORDER CIRCUIT
	25/11/20	52	TRANSIENT RESPONSE OF R-L CIRCUIT HAVING D.C EXCITATION AND IT'S PROBLEM DISCUSSION
	26/11/20	53	TRANSIENT RESPONSE OF R-C CIRCUIT HAVING D.C EXCITATION AND IT'S PROBLEM DISCUSSION
	27/11/20	54	TRANSIENT RESPONSE OF R-L-C CIRCUIT HAVING D.C EXCITATION AND IT'S PROBLEM DISCUSSION
	28/11/20	55	NUMERICAL SOLVING
8			TWO-PORT NETWORK
	01/12/20	56	CONCEPT OF OPEN CIRCUIT IMPEDANCE (Z) PARAMETERS AND IT'S PROBLEM DISCUSSION
	02/12/20	57	CONCEPT OF SHORT CIRCUIT IMPEDANCE (Y) PARAMETERS AND IT'S PROBLEM DISCUSSION
	03/12/20	58	CONCEPT OF TRANSMISSION (ABCD) PARAMETERS AND IT'S PROBLEM DISCUSSION

	04/12/20	59	CONCEPT OF HYBRID (H) PARAMETERS AND IT'S PROBLEM DISCUSSION
	05/12/20	60	CONDITION OF RECIPROCITY AND SYMMETRY IN TWO PORT PARAMETER REPRESENTATION
	08/12/20	61	INTER-RELATION BETWEEN PARAMETERS OF TWO PORT NETWORK
	09/12/20	62	DIFFERENT TYPES OF INTERCONNECTIONS OF TWO PORT NETWORK,
	10/12/20	63	EQUIVALENT T-AND PI-SECTION REPRESENTATION IN PARAMETER FORMS(DISTRIBUTION OF ASSIGNMENT QUESTION)
	11/12/20	64	SOLVING NUMERICAL
9			FILTERS
	12/12/20	65	CLASSIFICATION OF PASS BAND, STOP BAND AND CUT-OFF FREQUENCY
	15/12/20	66	CLASSIFICATION OF FILTER, ACTIVE AND PASSIVE FILTER
	16/12/20	67	CONCEPT OF WORKING OF LOW PASS AND HIGH PASS FILTER USING REACTIVE ELEMENT
	17/12/20	68	CONCEPT OF WORKING OF BAND PASS AND BAND ELIMINATION FILTER USING REACTIVE ELEMENT
	18/12/20	69	NUMERICAL SOLVING
	19/12/20	70	CLASS TEST
	22/12/20	71	DISCUSSION OF ASSIGNMENT QUESTION
	23/12/20	72	PREVIOUS SEMESTER QUESTION DISCUSSION
	24/12/20	73	PREVIOUS SEMESTER QUESTION DISCUSSION
	26/12/20	74	OMR TEST
	29/12/20	75	CLASS TEST QUESTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES

SIGNATURE OF FACULTY MEMBER

SIGNATURE OF H.O.D

GANDHI INSTITUTE OF EXCELLENT TECHNOCRATS
DEPARTMENT OF ELECTRICAL ENGINEERING
LESSON PLAN FOR THE SESSION 2021-22

SUBJECT: DIGITAL ELECTRONICS & MICROPROCESSOR
NAME OF THE FACULTY:

BRANCH: ELECTRICAL
SEMESTER: 5TH

UNIT	LECTURE NO.	DATE	TOPIC TO BE COVERED
1	1	1/9/20	INTRODUCTION TO DIGITAL ELECTRONICS
	2	2/9/20	NUMBER SYSTEM
	3	3/9/20	INTERCONVERSION OF NUMBER SYSTEM
	4	5/9/20	BINARY ARITHMETIC
	5	7/9/20	SIGNED NUMBER
	6	8/9/20	SUBTRACTION USING COMPLEMENT METHOD
	7	9/9/20	BINARY CODES
	8	10/9/20	EX-3 CODE GRAY CODE
	9	12/9/20	LOGIC GATES AND TRUTH TABLE
	10	14/9/20	UNIVERSAL GATE AND IMPLEMENTATION
2	11	15/9/20	DEMORGANS LAW, PROBLEMS
	12	16/9/20	BOOLEAN ALGEBRA
	13	19/9/20	PROBLEMS RELATED TO BOOLEAN ALGEBRA
	14	21/9/20	K-MAP
	15	22/9/20	PROBLEMS RELATED TO K-MAP
	16	23/9/20	DON'T CARE CONDITION
	17	24/9/20	CONCEPT OF COMBINATIONAL LOGIC CIRCUIT, ADDER
	18	26/9/20	HALF ADDER USING NAND GATE
	19	28/9/20	FULL ADDER, FULL ADDER USING HALF ADDER
	20	29/9/20	FULL ADDER USING NAND GATE
	21	30/9/20	HALF SUBTRACTOR, NAND IMPLEMENTATION
	22	1/10/20	FULL SUBTRACTOR, USING HALF SUBTRACTOR
	23	3/10/20	FULL SUBTRACTOR USING NAND GATE
	24	5/10/20	4:1 MUX
	25	6/10/20	PROBLEMS RELATED TO MUX
	26	7/10/20	1:4 DEMUX
	27	8/10/20	PROBLEMS RELATED TO DEMUX
	28	10/10/20	ENCODER
	29	12/10/20	DECODER
3	30	13/10/20	PROBLEMS RELATED TO DECODER
	31	14/10/20	2-BIT COMPARATOR
	32	15/10/20	SEQUENTIAL LOGIC CIRCUIT, DIFFERENCE BETWEEN COMBINATIONAL AND SEQUENTIAL LOGIC CIRCUIT

	33	17/10/20	CLOCK AND TRIGGERING
	34	19/10/20	FLIP-FLOPS, SR FLIP-FLOP
4	35	20/10/20	JK FLIP-FLOP USING SR FLIP-FLOP
	36	21/10/20	RACE AROUND CONDITION, MASTER SLAVE JK FLIP-FLOP
	37	22/10/20	D FLIP-FLOP, T FLIP-FLOP
	38	2/11/20	APPLICATION OF FLIP-FLOP
	39	2/11/20	COUNTERS, TYPES OF COUNTERS
	40	3/11/20	4-BIT ASYNCHRONOUS COUNTER
	41	4/11/20	DECADE COUNTER
	42	5/11/20	4-BIT SYNCHRONOUS COUNTER
	43	7/11/20	REGISTERS AND ITS TYPE
	44	9/11/20	WORKING OF SISO AND SIPO REGISTER
	45	10/11/20	WORKING OF PIPO AND PISO REGISTER
5	46	11/11/20	CLASS TEST 1
	47	12/11/20	INTRODUCTION TO MICROPROCESSOR AND MICROCOMPUTER
	48	14/11/20	ARCHITECTURE OF 8085
	49	16/11/20	REGISTERS OF 8085
	50	17/11/20	CLASS TEST QUESTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES
	51	18/11/20	PIN DESCRIPTION OF 8085
	52	19/11/20	PIN DESCRIPTION OF 8085
	53	21/11/20	STACK, STACK POINTER AND STACK TOP
	54	23/11/20	INTERRUPTS
	55	24/11/20	OPCODES, OPERANDS, INSTRUCTION SIZE
	56	25/11/20	INSTRUCTION SET, DATA TRANSFER GROUP
	57	26/11/20	ADDRESSING MODES
	58	28/11/20	INSTRUCTION CYCLE, FETCH CYCLE, MACHINE CYCLE AND T-STATE
6	59	1/12/20	TIMING DIAGRAM OF FETCH CYCLE, MEMORY READ AND MEMORY WRITE CYCLE
	60	2/12/20	TIMING DIAGRAM OF MOV, MVI AND LDA INSTRUCTION
	61	3/12/20	COUNTER AND TIME DELAY
	62	5/12/20	ASSEMBLY LANGUAGE PROGRAM
	63	7/12/20	ASSEMBLY LANGUAGE PROGRAM
	64	9/12/20	INTERFACING, MEMORY AND I/O MAPPING
	65	10/12/20	8255 BLOCK DIAGRAM
7	66	12/12/20	8255 BLOCK DIAGRAM
	67	14/12/20	8255 PIN DESCRIPTION
	68	15/12/20	MODES OF 8255
	69	16/12/20	SEVEN SEGMENT DISPLAY

70	17/12/20	SQUARE WAVE GENERATOR
71	19/12/20	TRAFFIC LIGHT CONTROLLER
72	21/12/20	CLASS TEST-II
73	22/12/20	PREVIOUS SEMESTER QUESTION DISCUSSION
74	23/12/20	OMR TEST
75	24/12/20	CLASS TEST QUESTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES

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GANDHI INSTITUTE OF EXCELLENT TECHNOCRATS

DEPARTMENT OF ELECTRICAL ENGG

LESSON PLAN

**SUBJECT-ENERGY CONVERSION-II
ENGG**

BRANCH-ELECTRICAL

NAME OF THE FACULTY-

SEMESTER-5TH

MODULE	UNIT	LECTURE NO.	TOPIC TO BE COVERED
1		1	Types of alternator and their constructional features.
		2	Basic working principle of alternator and the relation between speed and frequency.
		3	Terminology in armature winding and expressions for winding factors (Pitch factor, Distribution factor)
		4	Explain harmonics, its causes and impact on winding factor
		5	E.M.F equation of alternator. (Solve numerical problems)
		6	Explain Armature reaction and its effect on emf at different power factor of load.
		7	The vector diagram of loaded alternator. (Solve numerical problems)
		8	Testing of alternator (Solve numerical problems) Open circuit test. Short circuit test
		9	Determination of voltage regulation of Alternator by direct loading and synchronous impedance method. (Solve numerical problems)
		10	Parallel operation of alternator using synchro-scope and dark & bright lamp method
		11	Explain distribution of load by parallel connected alternators.
2		12	Constructional feature of Synchronous Motor
		13	Principles of operation, concept of load angle

	14	Derive torque, power developed.
	15	Effect of varying load with constant excitation
	16	Effect of varying excitation with constant load
	17	Power angle characteristics of cylindrical rotor motor
	18	Explain effect of excitation on Armature current and power factor
	19	Hunting in Synchronous Motor
	20	Function of Damper Bars in synchronous motor and generator.
	21	.Describe method of starting of Synchronous motor
	22	State application of synchronous motor
3	23	Production of rotating magnetic field
	24	Constructional feature of Squirrel cage and Slip ring induction motors
	25	Working principles of operation of 3-phase Induction motor
	26	Define slip speed, slip and establish the relation of slip with rotor quantities.
	27	Derive expression for torque during starting and running conditions and derive conditions for maximum torque. (solve numerical problems)
	28	Torque-slip characteristics
	29	Derive relation between full load torque and starting torque etc. (solve numerical problems)
	30	Establish the relations between Rotor Copper loss, Rotor output and Gross Torque and relationship of slip with rotor copper loss. (solve numerical problems)
	31	Methods of starting and different types of starters used for three phase Induction motor

		32	Explain speed control by Voltage Control, Rotor resistance control, Pole changing, frequency control methods.
		33	Plugging as applicable to three phase induction motor.
		34	Describe different types of motor enclosures
		35	Explain principle of Induction Generator and state its applications
4		36	Explain Ferrari's principle.
		37	Explain double revolving field theory and Cross-field theory to analyze starting torque of 1-phase induction motor
		38	Explain Working principle, Torque speed characteristics, performance characteristics and application of following single phase motors. Split phase motor. Capacitor Start motor. Capacitor start, capacitor run motor. Permanent capacitor type motor. Shaded pole motor
		39	Explain the method to change the direction of rotation of above motors
5		40	Construction, working principle, running characteristic and application of single phase series motor.
		41	Construction, working principle and application of Universal motors
		42	Working principle of Repulsion start Motor, Repulsion start Induction run motor, Repulsion Induction motor.
6		43	Principle of Stepper motor

	44	Classification of Stepper motor
	45	Principle of variable reluctant stepper motor
	46	Principle of Permanent magnet stepper motor
	47	Principle of hybrid stepper motor
	48	Applications of Stepper motor
7	49	Explain Grouping of winding,
	50	Advantages Of Grouping of winding,
	51	Explain parallel operation of the three phase transformers
	52	Explain tap changer On load tap changing
	53	Explain tap changer Off load tap changing
	54	Maintenance Schedule of Power Transformers
	55	CLASS TEST
	56	DISCUSSION OF ASSIGNMENT QUESTION
	57	PREVIOUS SEMESTER QUESTION DISCUSSION
	58	PREVIOUS SEMESTER QUESTION DISCUSSION
	59	OMR TEST
	60	CLASS TEST QUSTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES

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DEPARTMENT OF ELECTRICAL ENGINEERING
LESSON PLAN

SUBJECT- ELECTRICAL ENGINEERING MATERIAL
 NAME OF THE FACULTY-

BRANCH-ELECTRICAL ENGINEERING
 SEMESTER-3RD

MODULE	DATE	LECTURE NO.	TOPIC TO BE COVERED
1	01/09/20	1	CLASSIFICATION OF ELECTRICAL ENGINEERING MATERIAL. INTRODUCTION TO CONDUCTING MATERIALS
	02/09/20	2	RESTIVITY & FACTORS AFFECTING RESISTIVITY ,
	03/09/20	3	CLASSIFICATION OF CONDUCTING MATERIALS INTO LOW-RESISTIVITY AND HIGH RESISTIVITY MATERIALS
	05/09/20	4	LOW RESISTIVITY MATERIALS AND THEIR APPLICATIONS. (COPPER, SILVER, GOLD, ALUMINUM, STEEL)
	08/09/20	5	STRANDED CONDUCTORS, BUNDLED CONDUCTORS
	09/09/20	6	LOW RESISTIVITY COPPER ALLOYS & NUMERICAL BASED ON RESTIVITY
	10/09/20	7	HIGH RESISTIVITY MATERIALS AND THEIR APPLICATIONS(TUNGSTEN, CARBON, PLATINUM, MERCURY
	12/09/20	8	SUPERCONDUCTIVITY , SUPERCONDUCTING MATERIALS
	15/09/20	9	APPLICATION OF SUPERCONDUCTOR MATERIALS
	16/09/20	10	NUMERICAL SOLVING.
2	19/09/20	11	INTRODUCTION TO SEMICONDUCTORS
	22/09/20	12	ELECTRON ENERGY AND ENERGY BAND THEORY
	23/09/20	13	EXCITATION OF ATOMS ,INSULATORS, SEMICONDUCTORS AND CONDUCTORS
	24/09/20	14	SEMICONDUCTOR MATERIALS, COVALENT BOND
	26/09/20	15	INTRINSIC SEMICONDUCTORS
	29/09/20	16	EXTRINSIC SEMICONDUCTORS(N-TYPE MATERIALS , P-TYPE MATERIALS)
	30/09/20	17	MINORITY AND MAJORITY CARRIERS ,CLASSIFICATION OF SEMICONDUCTING MATERIAL
	01/10/20	18	APPLICATIONS OF SEMICONDUCTOR MATERIALS
	03/10/20	19	COMPARISON BETWEEN P-TYPE N-TYPE SEMICONDUCTOR, INTRINSIC & EXTRINSIC SEMICONDUCTOR,
	06/10/20	20	COMPARISION ON CONDUCTOR AND SEMICONDUCTOR MERITS AND DEMERITS OF SEMICONDUCTOR MATERIALS.
3	07/10/20	21	INTRODUCTION TO INSULATING MATERIAL, GENERAL PROPERTIES OF INSULATING MATERIALS
	08/10/20	22	ELECTRICAL PROPERTIES(INSULATION RESISTANCE ,FACTORS AFFECTING INSULATION RESISTANCE, DIELECTRIC STRENGTH)
	10/10/20	23	FACTORS AFFECTING DIELECTRIC STRENGTH, DIELECTRIC CONSTANT, DIELECTRIC LOSS
	13/10/20	24	VISUAL PROPERTIES & MECHANICAL PROPERTIES

	14/10/20	25	CHEMICAL PROPERTY, AGEING
	15/10/20	26	AVAILABILITY & CHARACTERISTIC OF A IDEAL INSULATING MATERIAL
	17/10/20	27	CLASSIFICATION OF INSULATING MATERIALS ON THE BASIS PHYSICAL AND CHEMICAL STRUCTURE (FIBROUS MATERIAL)
	20/10/20	28	IMPREGNATED FIBROUS MATERIAL & ITS APPLICATION
	21/10/20	29	NON RESINOUS MATERIAL, INSULATING LIQUIDS
	22/10/20	30	CERAMICS GLASS & MICA PRODUCTS (FEATURES AND APPLICATION)
	03/11/20	31	ASBESTOS, RUBBER, PLASTICS & ADHESIVES
	04/11/20	32	INSULATING GASES ,COMMONLY USED INSULATING GASES CHEMICAL STRUCTURE
	05/11/20	33	CLASS TEST
	07/11/20	34	INTRODUCTION TO DIELECTRIC MATERIAL
	10/11/20	35	POLARIZATION & ITS TYPE
	11/11/20	36	DIELECTRIC LOSS, TYPES OF DIELECTRICS, DIELECTRIC CONSTANT
	12/11/20	37	ELECTRIC CONDUCTIVITY OF DIELECTRICS AND THEIR BREAK DOWN
	17/11/20	38	PROPERTIES OF DIELECTRICS.
	18/11/20	39	COMPARISON BETWEEN DIELECTRIC MATERIAL & INSULATING MATERIAL
	19/11/20	40	APPLICATIONS OF DIELECTRICS.
	21/11/20	41	INTRODUCTION MAGNETIC MATERIAL CLASSIFICATION OF MAGNETIC MATERIAL
	24/11/20	42	CLASS TEST QUSTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES
	25/11/20	43	MAGNETIZATION CURVE, HARD MAGNETIC MATERIAL
	26/11/20	44	HYSTERESIS LOOP & LOSS
	28/11/20	45	EDDY CURRENTS ,CURIE POINT, FACTORS AFFECTING HYSTERESIS LOSS & PERMEABILITY
	01/12/20	46	MAGNETOSTRICTION,
	02/12/20	47	SOFT MAGNETIC MATERIAL (PURE IRON, IRON SILICON ALLOYS)
	03/12/20	48	GRAIN ORIENTED SHEET STEEL (<i>DISTRIBUTION OF ASSIGNMENT QUESTION</i>)
	05/12/20	49	MAGNETIC ANISOTROPY, ANNEALING, NICKEL IRON ALLOYS

08/12/20	50	INTRODUCTION ,STRUCTURAL MATERIAL& PROTECTIVE MATERIAL
09/12/20	51	THERMOCOUPLE MATERIALS, BIMETALS
10/12/20	52	SOLDERING MATERIALS
15/12/20	53	FUSE MATERIALS (<i>COLLECTION OF ASSIGNMENT</i>)
16/12/20	54	DEHYDRATING MATERIALS
17/12/20	55	<i>CLASS TEST</i>
19/12/20	56	<i>DISCUSSION OF ASSIGNMENT QUESTION</i>
22/12/20	57	PREVIOUS SEMESTER QUESTION DISCUSSION
23/12/20	58	PREVIOUS SEMESTER QUESTION DISCUSSION
24/12/20	59	OMR TEST
26/12/20	60	CLASS TEST QUSTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES

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GANDHI INSTITUTE OF EXCELLENT TECHNOCRATS

DEPARTMENT OF ELECTRICAL ENGG

LESSON PLAN

SUBJECT-EI&E
BRANCH-ELECTRICAL ENGG

NAME OF THE FACULTY-

SEMESTER-6TH

MODULE	UNIT	LECTURE NO.	TOPIC TO BE COVERED
1		1	Definitions, Ampere, Apparatus, Accessible, Bare, cable, circuit, circuit breaker, conductor voltage (low, medium, high, EH), live, dead, cut-out, conduit, system, danger, Installation, earthing system, span, volt, switch gear, etc.
		2	conductor voltage (low, medium, high, EH), live, dead, cut-out, conduit, system
		3	General safety precautions, rule 29, 30, 31, 32, 33, 34,
		4	General safety precautions, rule 35, 36, 40, 41, 43, 44, 45, 46
		5	General conditions relating to supply and use of energy : rule 47, 48, 49, 50, 51
		6	General conditions relating to supply and use of energy 54, 55, 56, 57, 58, 59, 60
		7	General conditions relating to supply and use of energy 61, 62, 63, 64
		8	General conditions relating to supply and use of energy
		9	OH lines : Rule 74, 75,
		10	OH lines : Rule 76, 77,
		11	OH lines : Rule 78, 79,
		12	OH lines : Rule 80, 86, 87,
		13	OH lines : Rule 88, 89, 90, 91
2		14	Electrical installations, domestics, industrial, Wiring System, Internal distribution of Electrical Energy. Methods of wiring,

		systems of wiring, wire and cable, conductor materials used in cables, insulating materials mechanical protection.
	15	Types of cables used in internal wiring,
	16	multi-stranded cables, voltage grinding of cables, general specifications of cables
	17	ACCESSORIES: Main switch and distribution boards, conduits, conduit accessories and fittings, lighting accessories and fittings, fuses, important
	18	definitions, determination of size of fuse – wire, fuse units. Earthing conductor, earthing, IS specifications regarding earthing of electrical installations, points to be earthed.
	19	Determination of size of earth wire and earth plate for domestic and industrial installations. Material required for GI pipe earthing
	20	LIGHTING SCHEME: Aspects of good lighting services. Types of lighting
	21	schemes, design of lighting schemes, factory lighting, public lighting installations,
	22	street lighting, general rules for wiring, determination of number of points (light, fan, socket, outlets), determination of total load, determination of Number of sub circuits
3	23	Type of internal wiring, cleat wiring, CTS wiring, wooden casing capping, metal
	24	sheathed wiring, conduit wiring, their advantage and disadvantages comparison and applications
	25	Prepare one estimate of materials required for CTS wiring for small domestic installation of one room and one veradah within 25 m ₂ with given light, fan & plug points.
	26	Prepare one estimate of materials required for conduit wiring for small domestic
	27	installation of one room and one verandha within 25 m ₂ with given light, fan & plug points.
	28	Prepare one estimate of materials required for concealed wiring for domestic
	29	installation of two rooms and one latrine, bath, kitchen & verandah

			within 80m ₂ with given light, fan & plug points
		30	Prepare one estimate of materials required for erection of conduct wiring to a small workshop installation
		31	Prepare one estimate of materials required for erection about 30m ₂ and load within 10 KW
4		32	Main components of overhead lines, line supports, factors Governing Height of pole, conductor materials, determination of size of conductor for overhead
		33	transmission line, cross arms, pole brackets and clamps, guys and stays, conductors configurations, spacing and clearances,
		34	span lengths, overhead line insulators, types of insulators, lighting arresters,
		35	danger plates, anti-climbing devices, bird guards, beads of jumpers, jumpers, tee-offs, guarding of overhead lines.
		36	Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving calculation of the size of conductor
		37	Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consideration using ACSR
		38	Prepare an estimate of materials required for HT distribution line (11 KV) within 2 km and load of 2000 KVA maximum and standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consider action using ACSR
5		39	Components of service lines, service line (cables and conductors), bearer wire,

			lacing rod. Ariel fuse, service support, energy box and meters etc.
		40	Prepare and estimate for providing single phase supply of load of 5 KW (light, fan, socket) to a single stored residential building.
		41	Prepare and estimate for providing single phase supply load of 3KW to each floor of a double stored building having separate energy meter
		42	Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire
		43	Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using bare conductor and insulated wire combined.
		44	estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire
		45	Components of service lines, service line (cables and conductors), bearer wire, lacing rod. Ariel fuse, service support,
		46	Components of service linesenergy box and meters etc.
		47	service line (cables and conductors), bearer wire, lacing rod.
		48	Ariel fuse, service support, energy box and meters etc.
		49	Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire
		50	estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire
		51	Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using bare conductor and insulated wire combined.
		52	estimate of materials required for service connection to a factory building with load within 15 KW using bare conductor and insulated wire combined.
6		53	Prepare one materials estimate for following types of transformer substations. Pole mounted substation.
		54	Prepare one materials estimate for following types of transformer substations Plinth Mounted substation

		55	CLASS TEST
		56	DISCUSSION OF ASSIGNMENT QUESTION
		57	PREVIOUS SEMESTER QUESTION DISCUSSION
		58	PREVIOUS SEMESTER QUESTION DISCUSSION
		59	OMR TEST
		60	CLASS TEST QUSTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES

Signature of Concerned Faculty

Signature of HOD

GANDHI INSTITUTE OF EXCELLENT TECHNOCRATS

Semester:3RD

LESSON PLAN

Subject: Environmental studies

Branch: Electrical Engineering

Name of the Faculty Member:

Period	DATE	Module/ Number	Topic to be covered
1	01/09/20	UNIT-1	The Multidisciplinary nature of environmental studies Definition Of Environmental Studies; introduction to environmental studies
2	03/09/20		Scope Of Environmental Studies
3	04/09/20		Importance Of Environmental Studies
4	07/09/20		Need for public awareness
5	08/09/20	UNIT-2	Natural Resources : Renewable and non renewable resources: Forest resources: Use and over-exploitation, deforestation, case studies
6	10/09/20		Timber extraction mining, dams and their effects on forests and tribal people
7	11/09/20		Water resources: Use and over-utilization of surface and ground water, floods, Drought, conflicts over water, dam's benefits and problems
8	14/09/20		Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources
9	15/09/20		Food Resources: World food problems, changes caused by agriculture and over grazing, effects of modern agriculture
10	18/09/20		Fertilizers- pesticides problems, water logging, salinity
11	21/09/20		Energy Resources: Growing energy need, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
12	22/09/20		Land Resources: Land as a resource, land degradation
13	24/09/20		Man induces land slides, soil erosion, and desertification, Role of individual in conservation of natural resources, Equitable use of resources for sustainable life styles
14	25/09/20		Discussion of important questions
15	28/09/20	UNIT-3	Systems: Concept of an eco system, Structure and function of an eco system

16	29/09/20		Producers, consumers, decomposers: definitions and their role in an ecosystem
17	01/10/20		Energy flow in the eco systems, Ecological succession, Food chains, food webs
18	05/10/20		Ecological pyramids, Introduction, types, characteristic features Of Forest Ecosystem
19	06/10/20		Structure and Function Forest ecosystem:
20	08/10/20		Introduction and types of Aquatic eco systems
21	09/10/20		Characteristics of Aquatic eco systems, Structure and Function of Aquatic eco systems
22	12/10/20		Discussion of important questions
23	13/10/20	UNIT-4	Biodiversity and its conservation Introduction- Definition Genetics, Species and Ecosystem diversity
24	15/10/20		Bio-geographical classification of India
25	16/10/20		Value of biodiversity: consumptive use, productive use
26	19/10/20		Social ethical, aesthetic values
27	20/10/20		Biodiversity at global, national and local level.
28	22/10/20		Threats to biodiversity: Habitats loss
29	02/11/20		Poaching of wild life man wildlife conflicts
30	03/11/20		DISCUSSIONS ON CHAPTERS COVERED
31	05/11/20	UNIT-5	Environmental Pollution. INTERNAL EXAMINATION
32	06/11/20		Definition, Causes & effects of Air Pollution, Control measures of Air Pollution
33	09/11/20		Definition, Causes & effects of Water Pollution, Control measures of Water Pollution
34	10/11/20		Definition, Causes & effects of Soil Pollution, Control measures of Soil Pollution
35	12/11/20		DISCUSSIONS ON INTERNAL QUESTIONS AND DISTRIBUTION OF EVALUATED ANSWER SHEETS
36	13/11/20		Definition, Causes & effects of Marine Pollution Control measures of Marine Pollution
37	16/11/20		Definition, Causes & effects of Noise Pollution, Control measures of Noise Pollution
38	17/11/20		Definition, Causes & effects of Thermal Pollution, Control measures of Thermal Pollution
39	19/11//20		Definition, Causes & effects of Nuclear Hazard, Control measures of Nuclear Hazard
40	20/11/20		Solid waste Management: Causes, effects and control measures of urban and industrial wastes, Role of an individual in prevention of pollution.

41	23/11/20		Disaster management: Floods, earth quake: precautionary measures to be taken during natural calamities, Cyclone and Land slides: precautionary measures to be taken during natural calamities
42	24/11/20		Discussion of important questions
43	26/11/20	UNIT-6	Social issues and the Environment Form unsustainable to sustainable development, Urban problems related to energy, Importance of Water conservation
44	27/11/20		rain water harvesting, water shed management
45	01/12/20		Resettlement and rehabilitation of people; its problems and concern
46	03/12/20		Environmental ethics: issue and possible solutions. Climate change, global warming
47	04/12/20		Acid rain, Ozone layer depletion
48	07/12/20		Discussion of important questions
49	08/12/20		nuclear accidents and holocaust, case studies.
50	10/12/20		Air (prevention and control of pollution) Act
51	11/12/20		Water (prevention and control of pollution) Act
52	14/12/20		Public awareness
53	15/12/20	UNIT-7	Human population and the environment Population growth and variation among nations, Population explosion- family welfare program
54	17/12/20		Environment and human health.
55	18/12/20		Human rights: Equity, Nutrition, health and human rights, Intellectual Property Rights
56	21/12/20		OMR TEST 5
57	22/12/20		Value education, Environmental Values, Valuing Nature, Valuing cultures
58	24/12/20		Social justice, Human heritage, Equitable use of Resources
59	28/12/20		Common Property Resources, Ecological degradation, Role of information technology in environment and human health
60	29/12/20		REVISION
		Signature of faculty Member	Signature of H.O.D

GANDHI INSTITUTE OF EXCELLENT TECHNOCRATS, BHUBANESWAR**DEPARTMENT OF ELECTRICAL ENGINEERING****LESSON PLAN FOR THE SESSION 2021-22****SUBJECT- ANALOG ELECTRONICS & OP-AMP(TH-2)****BRANCH-ELECTRICAL****NAME OF THE FACULTY-****SEMESTER-4TH**

UNIT	LECTURE NO.	DATE	TOPIC TO BE COVERED
1	1	11/03/22	<u>P-N JUNCTION DIODE</u> P-N Junction Diode & Working of Diode
	2	12/03/22	V-I characteristics of PN junction Diode.
	3	12/03/22	DC load line, Important terms such as Ideal Diode, Knee voltage
	4	15/03/22	Junction break down-zener diode & avalanche break down
	5	15/03/22	P-N Diode clipping Circuit.
	6	22/03/22	P-N Diode clamping Circuit
2	7	22/03/22	<u>SPECIAL SEMICONDUCTOR DEVICES</u> Thermister, sensor & barretters
	8	25/03/22	Zener Diode, Tunnel Diode
	9	26/03/22	PIN Diode
3	10	26/03/22	<u>RECTIFIER CIRCUITS & FILTERS</u> Classification of rectifiers-explain the operation of half wave rectifier. Derive its DC output current and voltage, RMS output current & voltage, rectifier efficiency Derive –regulation, transformer utilization factor and PIV of half wave rectifier.
	11	29/03/22	Explain the operation of full wave centre tapped rectifier. Derive it's DC output current and voltage, RMS output current and voltage, Rectifier efficiency
	12	29/03/22	Derive:-Regulation, Transformer utilization factor And Peak inverse voltage of centre tapped full wave rectifier
	13	02/04/22	What is filter? Where it is used in an electronic circuit? Explain the operation of series inductor filter and shunt capacitor filter.
	14	02/04/22	Explain the operation of choke input filter and capacitor input filter.
4	15	05/04/22	<u>TRANSISTORS</u>

			What is a transistor? It's application. Principle of bipolar junction transistor(NPN, PNP) Different various modes of operation of transistor. How does a transistor behave in each mode?
	16	05/04/22	The current components in a transistor, Transistor as an amplifier.
	17	08/04/22	Explain the CB connection of transistor configuration with its input and output characteristics.
	18	09/04/22	Explain the CE connection of transistor configuration with its input and output characteristics.
	19	09/04/22	Explain the CC connection of transistor configuration with its input and output characteristics.
5	20	12/04/22	<u>TRANSISTOR CIRCUITS</u> Transistor biasing, its necessity, different types of transistor biasing, stabilization and stability factor
	21	12/04/22	Derive output current and voltages for fixed biasing. Solve numerical related to it.
	22	16/04/22	Derive output current and voltages for emitter stabilized biasing. Solve numerical related to it.
	23	16/04/22	Derive output current and voltages for voltage divider biasing. Solve numerical related to it.
6	24	19/04/22	<u>TRANSISTOR AMPLIFIERS & OSCILLATORS</u> Practical circuit of transistor amplifier DC load line and DC equivalent circuit
	25	19/04/22	AC load line and AC equivalent circuit Calculation of gain, Phase reversal
	26	22/04/22	H-parameters of transistors Simplified H-parameters of transistors Generalized approximate model
	27	23/04/22	Analysis of CB, CE, CC amplifier using generalized approximate model. Multi stage transistor amplifier R.C. coupled amplifier
	28	23/04/22	Transformer coupled amplifier
	29	26/04/22	Feed back in amplifier, General theory of feed back
	30	26/04/22	Negative feedback circuit, Advantage of negative feedback
	31	29/04/22	Power amplifier and its classification Difference between voltage amplifier and power amplifier
	32	30/04/22	Transformer coupled class A power amplifier Class A push-pull amplifier
	33	30/04/22	Class B push-pull amplifier
	34	06/05/22	Oscillators, Types of oscillators, Essentials of transistor oscillator.

	35	07/05/22	Principle of operation of tuned collector oscillator	
	36	07/05/22	Principle of operation of Hartley oscillator, Colpitt, phase shift oscillator.	
	37	10/05/22	Principle of operation of phase shift oscillator	
	38	10/05/22	Principle of operation of Principle of operation of Wein- bridge oscillator (no mathematical Derivations).	
7	39	13/05/22	<u>FIELD EFFECT TRANSISTOR</u> Classification of FET Advantages of FET over BJT	
	40	14/05/22	Principle of operation of FET	
	41	14/05/22	FET parameters (no mathematical derivation) DC drain resistance, AC drain resistance, Trans-conductance	
	42	17/05/22	Biasing of FET. Derive output current and voltages for fixed biasing. Solve numerical related to it.	
	43	17/05/22	Derive output current and voltages for emitter stabilized biasing. Solve numerical related to it.	
	44	20/05/22	Derive output current and voltages for voltage divider biasing. Solve numerical related to it.	
	45	21/05/22	Derive output current and voltages for dc bias with voltage feedback biasing. Solve numerical related to it.	
			DISTRIBUTION OF ASSIGNMENT QUESTION	
	46	21/05/22	CLASS TEST-1	
8	47	24/05/22	<u>OPERATIONAL AMPLIFIERS</u> General circuit of OP-AMP and IC- CA -741 OPAMP	
	48	24/05/22	Explained the terms CMRR, slew rate, input and output resistance, input and output voltage, offset voltage.	
	49	27/05/22	Operational amplifier stages, Equivalent circuit of operational amplifier	
	50	28/05/22	CLASS TEST QUESTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES	
	51	28/05/22	Open loop OP-AMP configuration, OPAMP with feedback	
	52	31/05/22	Inverting OP-AMP, Non-inverting OP-AMP	
	53	31/05/22	Voltage follower & buffer, Differential amplifier, Adder or summing amplifier	
	54	03/06/22	Subtractor-Solved numerical, Integrator-Solved numerical	
	55	04/06/22	Comparator-Solved numerical, Differentiator-Solved numerical	
		56	04/06/22	DISCUSSION OF ASSIGNMENT QUESTION
		57	07/06/22	PREVIOUS SEMESTER QUESTION DISCUSSION

	58	07/06/22	CLASS TEST-2
	59	08/06/22	OMR TEST
	60	10/06/22	CLASS TEST QUESTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES

SIGNATURE OF FACULTY MEMBER
DATE

COUNTER SIGNATURE OF H.O.D

GANDHI INSTITUTE OF EXCELLENT TECHNOCRATS, BHUBANESWAR

DEPARTMENT OF ELECTRICAL ENGG

LESSON PLAN FOR THE SESSION 2021-22

SUBJECT-ENERGY CONVERSION –I

BRANCH-ELECTRICAL

NAME OF THE FACULTY-

SEMESTER-4TH

MODULE	UNIT	LECTURE NO.	TOPIC TO BE COVERED
1		1	Faradays laws of electromagnetic induction Operating principle of generator Constructional features of DC machine.
		2	Materials used for construction of Yoke, Pole & field winding, Armature, Commutator.
		3	calculation of Armature winding, back pitch, Front pitch, Resultant pitch and commutator- pitch. Fundamentals of Simple Lap and wave winding, Dummy coils.
		4	Connection and characteristics of Different types of D.C. machines (Shunt, Series and Compound)
		5	Simple loop generator & Derivation of EMF equation of DC generators. (Solve problems)
		6	Calculation of Losses and efficiency of DC generator.
		7	What are the Condition for maximum efficiency and
		8	Solve numerical problems.
		9	Losses of Armature reaction in D.C. machine Commutation and methods of improving commutation.
		10	Role of inter poles and compensating winding in commutation.
		11	Characteristics of D.C. Generators
		12	Various Application of different types of D.C. Generators.

	13	Concept of critical resistance and critical speed of DC shunt generator
	14	Various Conditions of Build-up of emf of DC generator.
	15	Need for Parallel operation of D.C. Generators.
	16	Conditions for Parallel operation of D.C. Generators
	17	Uses of D.C generators
2	18	Faradays laws of electromagnetic induction Basic working principle of DC motor
	19	Significance of back emf in D.C. Motor.
	20	Voltage equation of D.C. Motor and condition for maximum power output(simple problems)
	21	Importance of torque and Derive torque equation (solve problems)
	22	Characteristics of shunt, series and compound motors and their application.
	23	Methods of Starting method of shunt, series and compound motors.
	24	Speed control of D.C shunt motors by Flux control method. Armature voltage Control method.
	25	Solve problems
	26	Methods for Speed control of D.C. series motors by Field Flux control method, Tapped field method and series-parallel method
	27	Determination of efficiency of D.C. Machine by Brake test method(solve numerical problems)
	28	Determination of efficiency of D.C. Machine by Swinburne's
	29	Test method(solve numerical problems)
	30	Losses, efficiency and
	31	power stages of D.C. motor(solve numerical problems)

	32	Uses of D.C. motors
	33	Mutual induction and its application Working principle of transformer.
	34	Constructional feature of Transformer.
	35	Different Arrangement of core & winding in different types of transformer.
	36	Brief ideas about transformer accessories such as conservator, tank, breather, and explosion vent etc.
	37	Explain types of cooling methods
	38	State the procedures for Care and maintenance.
	39	EMF equation of transformer.
	40	Cases for Ideal transformer voltage transformation ratio
	41	Operation of Transformer at no load, on load with phasor diagrams.
	42	Draw Equivalent Resistance, Leakage Reactance and Impedance of transformer.
	43	To draw phasor diagram of transformer on load, with winding Resistance and Magnetic leakage with using upf, leading pf and lagging pf load.
	44	To explain Equivalent circuit and solve numerical problems.
	45	Approximate & exact voltage drop calculation of a Transformer.
	46	Regulation of transformer.
	47	Different types of losses in a Transformer. Explain Open circuit and Short Circuit test.(Solve numerical problems)
	48	Explain Efficiency, efficiency at different loads and power factors, condition for maximum efficiency (solve problems)
	49	Importance of all day efficiency and Explain All Day Efficiency (solve problems)

		50	Determination of load corresponding to Maximum
		51	Calculation of efficiency and corresponding load ..
		52	Parallel operation of single phase transformer
3		53	Saving of copper Constructional features of Auto transformer. Working principle of single phase Auto Transformer.
		54	Comparison of Auto transformer with an two winding transformer (saving of Copper). Uses of Auto transformer.
		55	Concept of on load tap changer and off load tap changer Explain Tap changer with transformer (on load and off load condition
4		56	Explain Current Transformer and Potential Transformer
		57	Define Ratio error,
		58	Phase angle error its calculation
		59	Burden of a transformer .
		60	Uses of C.T. and P.T in industries and sub station

SIGNATURE OF FACULTY MEMBER

COUNTER SIGNATURE OF H.O.D

GANDHI INSTITUTE OF EXCELLENT TECHNOCRATS, BHUBANESWAR**DEPARTMENT OF ELECTRICAL ENGINEERING****LESSON PLAN FOR THE SESSION 2021-22****SUBJECT- ELECTRICAL MEASURING INSTRUMENT****BRANCH-ELECTRICAL ENGG.****NAME OF THE FACULTY-****SEMESTER-4TH**

MODULE	UNIT	LECTURE NO.	TOPIC TO BE COVERED
1		1	DEFINE BASIC NOTATION USED IN MEASURING INSTRUMENT LIKE ACCURACY, PRECISION, ERRORS
		2	RESOLUTIONS SENSITIVITY AND TOLERANCE WITH EXAMPLES
		3	CLASSIFICATION OF MEASURING INSTRUMENTS ON THE BASIS OF OPERATING PRINCIPLE, TORQUE USED
		4	DEFINITION, WORKING AND IMPORTANCE OF DEFLECTING TORQUE, CONTROLLING TORQUE AND DAMPING TORQUE
		5	DIFFERENT TYPES OF CONTROLLING TORQUES ARRANGEMENTS (EDDY CURRENT, GRAVITY CONTROL, SPRING CONTROL) IN INDICATING TYPE OF INSTRUMENTS
		6	IMPORTANCE OF DEFLECTING TORQUE IN MEASUREMENT
		7	, CALIBRATION OF INSTRUMENTS FOR THE MEASUREMENT OF THE QUANTITY ACCURATELY
2		8	CONSTRUCTION, PRINCIPLE OF OPERATION OF MOVING IRON TYPE INSTRUMENTS WITH SCHEMATIC DIAGRAM.
		9	ERRORS, RANGES, MERITS AND DEMERITS OF MOVING IRON TYPE INSTRUMENTS USING DEFLECTING TORQUE.
		10	ERRORS, RANGES, MERITS AND DEMERITS OF MOVING IRON TYPE INSTRUMENTS USING CONTROLLING EQUATIONS
		11	CONSTRUCTION, PRINCIPLE OF OPERATION OF PERMANENT MAGNET MOVING COIL TYPE INSTRUMENTS WITH SCHEMATIC DIAGRAM
		12	ERRORS, RANGES, MERITS AND DEMERITS OF PERMANENT MAGNET MOVING COIL TYPE INSTRUMENTS USING DEFLECTING TORQUE AND CONTROLLING EQUATIONS.
		13	ERRORS, RANGES, MERITS AND DEMERITS OF PERMANENT MAGNET MOVING COIL TYPE INSTRUMENTS USING DEFLECTING TORQUE AND CONTROLLING EQUATION.

		14	CONSTRUCTION, PRINCIPLE OF OPERATION OF DYNAMOMETER TYPE INSTRUMENTS WITH SCHEMATIC DIAGRAM.
		15	ERRORS, RANGES, MERITS AND DEMERITS OF DYNAMOMETER TYPE INSTRUMENTS USING DEFLECTING TORQUE AND CONTROLLING EQUATIONS.
		16	ERRORS, RANGES, MERITS AND DEMERITS OF DYNAMOMETER TYPE INSTRUMENTS USING DEFLECTING TORQUE AND CONTROLLING EQUATIONS.
		17	CONSTRUCTION, PRINCIPLE OF OPERATION, ERRORS, RANGES MERITS AND DEMERITS OF RECTIFIER TYPE INSTRUMENTS.
		18	CONSTRUCTION, PRINCIPLE OF OPERATION, ERRORS, RANGES MERITS AND DEMERITS OF RECTIFIER TYPE INSTRUMENTS.
		19	DESCRIBE CONSTRUCTION, PRINCIPLE OF OPERATION, ERRORS, RANGES MERITS AND DEMERITS INDUCTION TYPE INSTRUMENTS.
		20	EXTENSION OF RANGE OF INSTRUMENTS BY USE OF SHUNTS AND MULTIPLIERS.
		21	NUMERICAL ON EXTENSION OF INSTRUMENTS (AS AMMETER AND VOLTMETER).
3		22	CONSTRUCTION OF DYNAMOMETER TYPE WATTMETER WITH SCHEMATIC DIAGRAM, EXPLAINING OF CONNECTION DIAGRAM OF WATTMETER.
		23	CONSTRUCTION OF DYNAMOMETER TYPE WATTMETER WITH SCHEMATIC DIAGRAM, EXPLAINING OF CONNECTION DIAGRAM OF WATTMETER.
		24	PRINCIPLE OF WORKING OF DYNAMOMETER TYPE WATTMETER UPF TYPE WITH CONNECTION DIAGRAM.
		25	PRINCIPLE OF WORKING OF DYNAMOMETER TYPE WATTMETER LPF TYPE WITH CONNECTION DIAGRAM.
		26	UPF TYPE DYNAMOMETER TYPE WATTMETER WORKING PRINCIPLE.
		27	CLASSIFICATION OF ERRORS OF WATTMETER (FRICTION AND BRAKING ERROR)
		28	THE ERRORS IN DYNAMOMETER TYPE WATTMETER DUE TO DIFFERENT CONNECTION
		29	THE ERRORS IN DYNAMOMETER TYPE WATTMETER DUE TO VOLTAGE-COIL INDUCTANCE
		30	METHODS OF THEIR CORRECTION OF ERROR OF WATTMETER
4		31	CALCULATION OF ELECTRICAL ENERGY, INTRODUCTION TO ELECTRICAL ENERGY MEASUREMENT
		32	ELECTRICAL ENERGY CALCULATION IN ENERGY METER FOR BILLING.
		33	WORKING PRINCIPLE OF SINGLE PHASE INDUCTION TYPE ENERGY METERS
		34	ADJUSTMENTS & COMPENSATION OF SINGLE PHASE ENERGY METERS (INDUCTION TYPE)
		35	TESTING OF ENERGY METERS
		36	CLASS TEST

5	37	MEASUREMENT OF SPEED ,FREQUENCY AND POWER FACTOR TACHOMETERS, TYPES AND WORKING PRINCIPLES
	38	PRINCIPLE OF OPERATION OF MECHANICAL ELECTRICALRESONANCE TYPE FREQUENCY METERS
	39	. ELECTRICALRESONANCE TYPE FREQUENCY METERS
	40	PRINCIPLE OF OPERATION AND WORKING OF DYNAMOMETER TYPE SINGLE PHASE
	41	PRINCIPLE OF OPERATION AND WORKING OF DYNAMOMETER TYPE THREE PHASE POWER FACTOR METERS
	42	PRINCIPLE OF OPERATION AND WORKING OF DYNAMOMETER TYPE THREE-PHASE POWER FACTOR METERS.
	43	WORKING OF DYNAMOMETER TYPE THREE PHASE POWER FACTOR METERS
	44	CLASS TEST QUESTON DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES
6	45	MEASUREMENT OF RESISTANCE ,INDUCTANCE AND CAPACITANCE CLASSIFICATION OF RESISTANCE ON THE BASIS OF MAGNITUDE AND ITS MEASUREMENT
	46	MEASUREMENT OF LOW RESISTANCE BY POTENTIOMETER METHOD
	47	MEASUREMENT OF MEDIUM RESISTANCE BY WHEAT STONE BRIDGE METHOD
	48	MEASUREMENT OF HIGH RESISTANCE BY LOSS OF CHARGE METHOD
	49	CONSTRUCTION, PRINCIPLE OF OPERATIONS OF MEGGER & EARTH TESTER FOR INSULATION RESISTANCE AND EARTH RESISTANCE MEASUREMENT RESPECTIVELY.
	50	CONSTRUCTION AND PRINCIPLES OF MULTIMETER. (ANALOG AND DIGITAL)
	51	MEASUREMENT OF INDUCTANCE BY MAXWELL'S BRIDGE METHOD.
	52	MEASUREMENT OF CAPACITANCE BY SCHERING BRIDGE METHOD
7	53	MEASUREMENT OF RESISTANCE ,INDUCTANCE AND CAPACITANCE CLASSIFICATION OF RESISTANCE ON THE BASIS OF MAGNITUDE AND ITS MEASUREMENT
	54	MEASUREMENT OF LOW RESISTANCE BY POTENTIOMETER METHOD
	55	MEASUREMENT OF MEDIUM RESISTANCE BY WHEAT STONE BRIDGE METHOD
	56	MEASUREMENT OF HIGH RESISTANCE BY LOSS OF CHARGE METHOD
	57	CONSTRUCTION, PRINCIPLE OF OPERATIONS OF MEGGER & EARTHTESTER FOR INSULATION RESISTANCE AND EARTH RESISTANCE MEASUREMENT RESPECTIVELY
	58	CONSTRUCTION AND PRINCIPLES OF MULTIMETER. (ANALOG AND DIGITAL)
	59	MEASUREMENT OF INDUCTANCE BY MAXWELL'S BRIDGE METHOD.DISTRIBUTION OF ASSIGNMENT QUESTION
	60	MEASUREMENT OF CAPACITANCE BY SCHERING BRIDGE METHOD
	61	INDUCTIVE TRANSDUCER : PRINCIPLE OF LINEAR VARIABLE DIFFERENTIAL TRANSFORMER (LVDT), USES OF LVDT

7	62	CAPACITIVE TRANSDUCER : GENERAL PRINCIPLE OF CAPACITIVE TRANSDUCER
	63	VARIABLE AREA CAPACITIVE TRANSDUCER, CHANGE IN DISTANCE BETWEEN PLATE CAPACITIVE TRANSDUCER
	64	PIEZOELECTRIC TRANSDUCER (DISTRIBUTION OF ASSIGNMENT QUESTION)
	65	HALL EFFECT TRANSDUCER WITH THEIR APPLICATIONS
	66	OSCILLOSCOPE - PRINCIPLE OF OPERATION OF CATHODE RAY TUBE WITH SCHEMATIC DIAGRAM
	67	PRINCIPLE OF OPERATION OF OSCILLOSCOPE USING BLOCK DIAGRAM.
	68	MEASUREMENT OF DC VOLTAGE & CURRENT USING OSCILLOSCOPE.
	69	MEASUREMENT OF PHASE & FREQUENCY USING OSCILLOSCOPE
	70	CLASS TEST
	71	DISCUSSION OF ASSIGNMENT QUESTION
	72	PREVIOUS SEMESTER QUESTION DISCUSSION
	73	PREVIOUS SEMESTER QUESTION DISCUSSION
	74	OMR TEST
	75	CLASS TEST QUESTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES

SIGNATURE OF FACULTY MEMBER

COUNTER SIGNATURE OF H.O.D.

GANDHI INSTITUTE OF EXCELLENT TECHNOCRATS,BHUBANESWAR_

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN FOR THE SESSION- 2021-22

SUBJECT-GENERATION TRANSMISSION & DISTRIBUTION

BRANCH-ELECTRICAL

NAME OF THE FACULTY-

SEMESTER-4TH

UNIT	DATE	LECTURE NO.	TOPIC TO BE COVERED
1	10/03/22	1	Elementary idea on generation of electricity from Thermal power station
	11/03/22	2	Elementary idea on generation of electricity from Hydro Power station
	12/03/22	3	Elementary idea on generation of electricity from Nuclear Power station
	12/03/22	4	Introduction to Solar Power Plant (Photovoltaic cells).
	15/03/22	5	Layout diagram of generating stations
2	17/03/22	6	Layout of transmission and Distribution scheme
	22/03/22	7	Voltage Regulation
	24/03/22	8	Efficiency of transmission
	25/03/22	9	State and explain Kelvin's law for economical size of conductor
	26/03/22	10	Corona and corona loss on transmission lines
3	26/03/22	11	Types of supports, size and spacing of conductor
	30/03/22	12	Types of spacing of conductor
	31/03/22	13	Types of conductor materials
	02/04/22	14	State types of insulator
	02/04/22	15	State types of cross arms
	05/04/22	16	Sag in overhead line with support at same level and different level. (approximate formula effect of wind, ice and temperature on sag)

	07/04/22	17	Simple problem on sag
4	08/04/22	18	Introduction to transmission line and
	09/04/22	19	Calculate the transmission line parameter (inductance)
	09/04/22	20	Calculate the transmission line parameter (capacitance)
	12/04/22	21	Understand the concept of travelling waves
	16/04/22	22	Understand the concept of power flow through a transmission line
	16/04/22	23	Problem on inductance of transmission line
	19/04/22	24	Problem on capacitance of transmission line
5	21/04/22	25	EHV AC transmission
	22/04/22	26	Reasons for adoption of EHV AC transmission.
	23/04/22	27	EHV AC transmission
	23/04/22	28	Problems involved in EHV transmission
	26/04/22	29	HV DC transmission.
	28/04/22	30	Advantages of HVDC transmission system
	29/04/22	31	Limitations of HVDC transmission system
6	30/04/22	32	Introduction to Distribution System
	30/04/22	33	Connection Schemes of Distribution System: (Radial, Ring Main system)
	05/05/22	34	Connection Schemes of Distribution System: (Inter connected system)
	06/05/22	35	DC distributions, Distributor fed at one End,
	07/05/22	36	Distributor fed at both the ends, Ring distributors.
	07/05/22	37	AC distribution system, Method of solving AC distribution problem.
	10/05/22	38	Three phase four wire star connected system arrangement
7	12/05/22	39	CLASS TEST-1
	13/05/22	40	Cable insulation and Classification of cables and

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	14/05/22	41	Types of L. T. & H.T. cables with constructional features
	14/05/22	42	Methods of cable lying
	17/05/22	43	Localization of cable faults: Murray and Varley loop test for short circuit fault/ Earth fault
8	19/05/22	44	Causes of low power factor and methods of improvement of power factor in power system
	20/05/22	45	Factors affecting the economics of generation: (Define and explain), Load curves., Demand factor
	21/05/22	46	Factors affecting the economics of generation: (Define and explain)Maximum demand, Load factor
	21/05/22	47	Factors affecting the economics of generation: (Define and explain) Diversity factor, Plant capacity factor
	24/05/22	48	Peak load and Base load on power station
	26/05/22	49	Revision and Question discussion
9	27/05/22	50	Desirable characteristic of a tariff
	28/05/22	51	Explain flat rate, block rate, two part and maximum demand tariff.
	28/05/22	52	Solve Problems of flat rate, block rate, two part and maximum demand tariff.
10	31/05/22	53	Layout of LT , HT substation
	02/06/22	54	Layout of EHT substation
	03/06/22	55	Earthing of Substation lines, transmission lines and distribution lines
	04/06/22	56	PREVIOUS SEMESTER QUESTION DISCUSSION
	04/06/22	57	DISCUSSION OF ASSIGNMENT QUESTION
	07/06/22	58	CLASS TEST- II
	09/06/22	59	OMR TEST

	10/06/22	60	CLASS TEST QUESTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES.
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