Lesson Plan

Name of Faculty : Mr. Nitin

Discipline : Electrical Engg.

Semester : 4th

Subject : ECEE

Lesson Plan Duration : 64

Work Load (Lecture /Practical) per week in hours : Lecture : 4 Practical

Week	Theory		Practical	
	Lecture Day	Topic (Including assignment/test)	Practical Day	Topic
Ist	1	UNIT -1st Purpose of estimating and costing, performa for making estimates		
	2	preparation of materials schedule		
	3	costing, price list,		
	4	preparation of tender document		
2nd	1	net price list, market survey, overhead charges, labour charges		
	2	purchase system, enquiries, comparative statements, orders for supply, payment of bills.		
	3	electrical point method and fixed percentage method, contingency, profit,		
	4	Tenders – its constituents, finalization, specimen tender.		
3rd	1	UNIT 2nd Cleat wiring and wiring, , (to be prepared/arranged)		
	2	batten wiring		
	3	casing & capping wiring		
	4	conduit wiring		
4th	1	selection and design of wiring schemes for particular situation (domestic and		

	2	Industrial).		
	3	comparison of different wiring systems,		
	4	Selection of wires and cables		
		protective devices		
5th	1	MCB & ELCB		
	2	wiring accessories and use of i.e., etc. Use of wire-gauge and tables		
	3	**Unit 3rd** Domestic installations;		
	4	description of various tests		
6th	1	description of various tests		
	2	Commissioning		
	3	standard practice as per IS and IE rules		
	4	test the wiring installation		
7th	1	Planning of circuits		
	2	subcircuits		
	3	position of different accessories		
	4	electrical layout		
8th	1	preparing estimates including cost as per schedule		
	2	rate pattern		
	3	actual market rate		
	4	house of two room set along with layout sketch		
9th	1	Industrial installations		
	2	relevant IE rules and IS standard practices		
	3	planning		
	4	designing		
10th	1	estimation of installation		
	2	single phase motors of different ratings		

	3	electrical circuit diagram	
	4	starters	
11th	1	preparation of list of materials	
	2	estimating and costing exercises	
	3	workshop with singe-phase,	
	4	3-phase motor load and the light load	
12th	1	3-phase supply system	
	2	Service line connections estimate for domestic upto 10 KW	
	3	Industrial loads upto 20 KW	
	4	over-head and under ground connections) from pole to energy meter.	
13th	1	Transmission and distribution lines	
	2	overhead and underground	
	3	Planning of lines	
	4	designing of lines	
14th	1	different fixtures	
	2	earthing	
	3	unit cost calculations	
	4	Substation: Types of substations	
15th	1	substation schemes	
	2	components	
	3	estimate of 11/0.4 KV pole mounted	
	4	substation up to 200 KVA rating	
16th	1	methods of earthing	
	2	Key Diagram of 66 KV/11KV	
	3	Single line diagram	
	4	layout sketching of outdoor, indoor 11kV sub-station or 33kV substation	

(Signature of the teacher concerned with date)

Name of the Faculty : **Miss neeru devi (Practical)**

Discipline : **(Electrical Engineering)**

Semester : **4TH**

Subject : **ELECTRICAL ENGINEEERING DESIGN AND DRAWING**

Lesson plan Duration : **15 weeks(from January, 2018)**

Workload per week in hours : **Practicals-06**

Week	Practical	
	Lecture Day	Topic(including assignment test)
1st	1	DOL starting of 3-phase induction motor
	2	3-phase induction motor getting supply from selected feeder
	3	Forwarding/reversing of a 3-phase induction motor
2nd	4	Two speed control of 3-phase induction motor
	5	revison
	6	test
3rd	7	Limit switch control of a 3-phase induction motor
	8	Sequential operating of two motors using time delay relay
	9	Manually generated star delta starter for 3-phase induction motor
4th	10	Automatic star delta starter for 3-phase Induction Motor
	11	**probelms**
	12	test
5th	13	Concept and purpose of earthing
	14	Different types of earthing, drawings of plate and pipe earthing
	15	revison
6th	16	revison

	17	Procedure of earthing, test of materials required and costing
	18	Method of reducing earth resistance
7th	**19**	revison
	20	probelms
	21	Relevant IS specifications of earth electrode for earthing a transformer, a high building
8th	**22**	Earthing layout of distribution transformer
	23	Substation earthing layout and earthing materials
	24	test
9th	**25**	probelms
	26	Key diagram of 11KV,
	27	33Kv, 66KV,
10th	**28**	132 KV sub-stations
	29	test
	30	revison
11th	**31**	End cover of induction motor
	32	Rotor of a squirrel cage induction motor
	33	Field coil of a DC motor
12th	**34**	test
	35	revison
	36	Terminal plate of an induction motor
13th	**37**	revison
	38	Motor body (induction motor) as per IS specifications
	39	Motor body (induction motor) as per IS specifications
14th	**40**	Sliprings of 3-phase induction motor
	41	revison
	42	revison
15th	**43**	test
	44	problems
	45	Sliprings of 3-phase induction motor

Name of the Faculty : **Mannu Sharma(Theory, Practical)**

Discipline : **(Electrical Engineering)**

Semester : **4TH**

Subject : **ELECTRICAL MACHINES - 1**

Lesson plan Duration : **15 weeks(from January, 2018)**

Workload per week in hours : **Lectures-04, Practicals-03**

Week	Theory		Practical	
	Lecture Day	Topic(including assignment test)	Practical Day	Topic
1st	1	Introduction to Electrical Machines	1st	Measurement of the angular displacement of the rotor of a slip-ring induction motor on application of DC to stator of motor winding in sequence and simultaneously to each phase of rotor winding
	2	Definition of motor and generator,	2nd	Speed control of dc shunt motor (i) Armature control method (ii) Field control method
	4	concept of torque		
2nd	5	Torque development due to alignment of two fields and the concept of torque angle	3rd	Study of dc series motor with starter (to operate the motor on no load for a moment)
	6	Electro-magnetically induced emf		
	7	REVISON		
	8	TEST	4th	test
3rd	9	Elementary concept of an electrical machine	5th	Study of 3 point starter for starting D.C. shunt motor.
	10	Comparison of generator and motor		
	11	DC Machines INTRODUCTION		
	12	Main constructional features, Types of armature winding	6th	revison
4th	13	Function of the commutator for motoring and generation action	7th	test

	14	Factors determining induced emf		
	15	Factors determining the electromagnetic torque		
	16	Types of dc generation on the basis of excitation,	**8th**	To perform open circuit and short circuit test for determining: (i) equivalent circuit
5th	**17**	voltage built up in a dc shunt generator	**9th**	the regulation and (iii) efficiency of a transformer from the data obtained from open circuit and short circuit test at full load
	18	Significance of back e.m.f.,		
	19	the relation between back emf and Terminal voltage		
	20	Armature Reaction	**10th**	To find the efficiency and regulation of single phase transformer by actually loading it.
6th	**21**	Commutation methods to improve commutation	**11th**	Checking the polarity of the windings of a three phase transformer and connecting the windings in various configurations
	22	Performance and characteristics of different types of DC motors		
	23	Speed control of dc shunt/series motors		
	24	Need of starter	**12th**	revison
7th	**25**	three point dc shunt motor starter and 4-point starter	**13th**	test
	26	Applications of DC motors		
	27	Losses in a DC machine		
	28	Determination of losses by Swinburne's test	**14th**	Finding the voltage and current relationships of primary and secondary of a three phase transformer under balanced load in various configurations conditions such as (a) Star-star

8th	**29**	Transformers (single phase) introduction	**15th**	Star delta (c) Delta star (d) Delta - Delta configuring conditions
	30	Constructional features of a transformer and parts of transformer		
	31	Working principle of a transformer		
	32	revison	**16th**	test
9th	**33**	test	**17th**	revison
	34	EMF equation		
	35	EMF equation		
	36	Transformer on no-load and its phasor diagram	**18th**	revison
10th	**37**	test	**19th**	revison
	38	Transformer – neglecting voltage drop in the windings		
	39	Ampere turn balance – its phasor diagram		
	40	Mutual and leakage fluxes,	**20th**	revison
11th	**41**	leakage reactance	**21st**	revison
	42	Transformer on load,		
	43	voltage drops and its phasor diagram		
	44	Equivalent circuit	**22nd**	test
12th	**45**	Relation between induced emf and terminal voltage, regulation of a transformermathematical relation	**23rd**	revison
	46	Losses in a transforme		
	47	Open circuit and short circuit test.		
	48	Calculation of efficiency, condition for maximum efficiency-maintenance of Transformer, scheduled Maintenance	**24th**	test
13th	**49**	Auto transformer construction, saving of copper, working and applications	**25th**	revison
	50	Different types of transformers including dry type transformer.		
	51	Construction of three phase transformers and accessories of transformers such as		

		Conservator, breather, Buchholz Relay, Tap Changer (off load and on load) (Brief idea)		
	52	Types of three phase transformer i.e. delta-delta, delta-star, star-delta and star-star	**26th**	revison
14th	**53**	Conditions for parallel operation (only conditions are to be studied)	**27th**	revison
	54	On load tap changer		
	55	Difference between power and distribution transformer		
	56	revison	**28th**	test
15th	**57**	test	**29th**	problems
	58	Cooling of transformer		
	59	revison		
	60	test	30th	problems

Name of Faculty : V Yet to be Assigned
Discipline : Electrical
Semester : 4th sem
Subject : Electronics-II
Lesson Plan Duration : 15 weeks(from jan 2018 to april 2018)
Work Load (lecture/practical)per week (in hours) : Lectures- 04, practical- 03

Week	Theory		
	Lecture Day	Topic(including assignment/test)	Practical Day
1	1	Difference between voltage and power amplifier	1
	2	collector efficiency, distortion and dissipation capacity	2
	3	Explanation of Class A amplifier	3
	4	Explanation of Class B amplifier	4
2	5	Explanation of Class C amplifier	5
	6	Working of Class A single ended amplifier and its collector efficiency	6
	7	Impedence matching in power amplifier using transformer	7
	8	Heat sink in power amplifier	8
3	9	Working and advantages of push pull amplifier	9
	10	Working of complementary symmetry push pull amplifier	10
	11	Revision of previous topics	11
	12	Assignment of classification of power amplifiers	12
4	13	Introduction of tuned voltage amplifier	13
	14	Series Resonance and parallel Resonance	14
	15	Working of single tuned voltage amplifier	15
	16	Working of double tuned voltage amplifier	16

5	17	Frequency response of tuned voltge amplifier	17
	18	Application of tuned voltage amplifier	18
	19	Revision of previous topics	19
	20	test of previous chapters	20
6	21	Feedback, positive and negative feedback	21
	22	Voltage gain of amplifier using negative feedback	22
	23	Effect of negative feedback on voltage gain, stability, distortion, Bandwidth, input and output impedence	23
	24	Effect of emitter by pass capacitor on CE transistor amplifier	24
7	25	Emitter Follower and its applications	25
	26	Sinusoidal Oscillator and positive feedback in amplifiers	26
	27	Difference between oscilator and alternator	27
	28	Essential of an oscillator	28
8	29	Working of tuned collector oscillator	29
	30	Hartley and colpitt's oscillator	30
	31	R-C phase shift and Wein bridge oscillator	31
	32	Piezoelectric and crystal oscillator	32
9	33	Concept of waveshaping	33
	34	R-C differentiating and integrating circuits	34
	35	Diode clipping circuit	35
	36	Diode clamping circuit	36
10	37	Application of wave-shaping circuit	37
	38	Transistor as a switch	38
	39	Working of bistable multivibrator	39

	40	Working of monostabletable multivibrator	40
11	41	Working of astable multivibrator	41
	42	Revision of previous topics	42
	43	Revision of previous topics	43
	44	Test of previous chapters	44
12	45	Working of CVT	45
	46	Working of IC voltage rgulator (78XX/79XX)	46
	47	Intoduction of basic of operational amplifier	47
	48	Differential amlifier	48
13	49	Emitter coupled differential amplifier	49
	50	Offset even voltages and current	50
	51	Operational amplifier as integrator	51
	52	Operational amplifier as differentiator	52
14	53	Operational amplifier as summer and subtractor	53
	54	Pin configuration of 741 IC	54
	55	Assignment of important very short answer questions	55
	56	Block diagram of 555 IC timer	56
15	57	Revision of previous topics	57
	58	Revision of previous topics	58
	59	Test of previous chapters	59
	60	Revision of all syllabus	60

Practical
Practical Topic
Plot frequency response of two stage RC copled amplifier
Plot frequency response of two stage RC copled amplifier
Plot frequency response of two stage RC copled amplifier
Plot frequency response of two stage RC copled amplifier
Measure optimum load and power of a push pull amplifier
Measure optimum load and power of a push pull amplifier
Measure optimum load and power of a push pull amplifier
Measure optimum load and power of a push pull amplifier
Observe voltage gainof transistor amplifier by removing bye-pass capacitor
Observe voltage gainof transistor amplifier by removing bye-pass capacitor
Observe voltage gainof transistor amplifier by removing bye-pass capacitor
Observe voltage gainof transistor amplifier by removing bye-pass capacitor
Measure voltage gain of emitter follower circuit
Measure voltage gain of emitter follower circuit
Measure voltage gain of emitter follower circuit
Measure voltage gain of emitter follower circuit

Viva-voice of previous practicals
Viva-voice of previous practicals
Viva-voice of previous practicals
Viva-voice of previous practicals
Measure frequency generation in hartley and R-C phase shift oscillator
Measure frequency generation in hartley and R-C phase shift oscillator
Measure frequency generation in hartley and R-C phase shift oscillator
Measure frequency generation in hartley and R-C phase shift oscillator
Differentiated and integrated square wave on CRO
Differentiated and integrated square wave on CRO
Differentiated and integrated square wave on CRO
Differentiated and integrated square wave on CRO
Observe waveshape of clipping circuit
Observe waveshape of clipping circuit
Observe waveshape of clipping circuit
Observe waveshape of clipping circuit
Observe waveshape of clamping circuit
Observe waveshape of clamping circuit
Observe waveshape of clamping circuit
Observe waveshape of clamping circuit
Observe square wave of astable multivibrator on CRO
Observe square wave of astable multivibrator on CRO
Observe square wave of astable multivibrator on CRO

Observe square wave of astable multivibrator on CRO
Observe square wave of Bistable multivibrator on CRO
Observe square wave of Bistable multivibrator on CRO
Observe square wave of Bistable multivibrator on CRO
Observe square wave of Bistable multivibrator on CRO
Viva-voice of previous practicals
Viva-voice of previous practicals
Viva-voice of previous practicals
Viva-voice of previous practicals
Application performed using operational amplifier
Application performed using operational amplifier
Application performed using operational amplifier
Application performed using operational amplifier
Study of 555 IC as monostable and astable multivibrator
Study of 555 IC as monostable and astable multivibrator
Study of 555 IC as monostable and astable multivibrator
Study of 555 IC as monostable and astable multivibrator
Viva-voice of all practicals
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Name of the Faculty **:Yet to Be Assigned**

Discipline **: (Electrical Engineering)**

Semester **: 4TH**

Subject **: INSTRUMENTATION**

Lesson plan Duration **: 15 weeks(from January, 2018)**

Workload per week in hours **: Lectures-03, Practicals-02**

Week	Theory		Practical	
	Lecture Day	Topic(including assignment test)	Practical Day	Topic
1st	1	Importance of measurement, basic measuring systems,	1st	To measure the level of a liquid using a transducer
	2	advantages and limitations of each measuring systems		
	3	display devices		
2nd	4	Revision	2nd	To measure temperature using a thermo-couple
	5	Test		
	6	Transducers: Theory, construction and use of various transducers		
3rd	7	resistance, inductance	3rd	Revision
	8	capacitance, electromagnetic		
	9	piezo electric type		
4th	10	Revision	4th	To measure temperature using a thermo-couple
	11	Test		
	12	Measurement of Displacement and Strain:		Revision
5th	13	Displacement Measuring Devices	5th	Use of themistor in ON/OFF transducer
	14	wire wound potentiometer,		
	15	LVDT, strain gauges		
6th	16	Their different types such as inductance type	6th	Revision

	17	resistive type, wire and foil type etc.		
	18	Gauge factorgauge materials, strain gauge bridges and amplifiers.		
7th	**19**	and their selections. Use of electrical strain gauges,	**7th**	Study of variable capacitive transducer
	20	strain gauge bridges and amplifiers.		
	21	Revison		
8th	**22**	Test	**8th**	Revision
	23	Force and Torque Measurement:		
	24	Different types of force measuring devices and their principles		
9th	**25**	load measurements by using elastic transducers	**9th**	Draw the characteristics of a potentiometer
	26	electrical strain gauges.		
	27	Load cells, measurements of torque by brake		
10th	**28**	dynamometer, electrical strain gauges	**10th**	To measure linear displacement using LVDT
	29	speed measurements;		
	30	different methods, devices.		
	31	Revision	**11th**	Revision
	32	Pressure Measurement:Bourdon pressure gauges		
	33	electrical pressure pick ups and their principle		
12th	**34**	construction and applications. Use of pressure cells.	**12th**	To study the use of electrical strain gauge
	35	Revision And Test		
	36	Flow Measurement: Basic principles of magnetic and ultrasonic flow meters		
13th	**37**	Revision and Test	**13th**	To study weighing machine using load cell
	38	Measurement of Temperature: Bimetallic thermometer		
	39	thermoelectric thermometers		
14th	**40**	thermocouple,thermisters	**14th**	To study pH meter.
	41	resistance thermometers		
	42	pyrometer. Temperature recorders		
15th	**43**	Revision	**15th**	Revision
	44	Test		
	45	Problems Taken		