


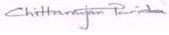


UTKAL INSTITUTE OF ENGINEERING & TECHNOLOGY

DISCIPLINE: electrical engineering	SEMESTER: 4TH Sem	NAME OF THE TEACHING FACULTY: CHITTARANJAN PARIDA		
SUBJECT: Th3. ELECTRICAL MEASUREMENT & INSTRUMENTATION	No of Days/Per week class allotted: 5 Class P/W(60)	Semester From Date:16/01/2024 To Date: 26/01/2024 No. Of Weeks: 12		
WEEK	CLASS DAY	THEORY TOPICS <u>PART- A (MEASURING INSTRUMENTS)</u>	REMARKS	
1st	1st	Define Accuracy, precision, Errors, Resolutions Sensitivity and tolerance.	Date	Dean/Principal
	2nd	Classification of measuring instruments		
	3rd	Explain Deflecting, controlling and damping arrangements in indicating type of instruments.		
	4th	Explain Deflecting, controlling and damping arrangements in indicating type of instruments.		
	5th	Calibration of instruments.		
2nd	1st	<u>PART B (ANALOG AMMETERS AND VOLTMETERS) :</u> <u>Describe Construction, principle of operation, errors, ranges merits and demerits of:</u>		
	2nd	<u>Moving iron type instruments.</u>		
	3rd	Permanent Magnet Moving coil type instruments		
	4th	Dynamometer type instruments		
	5th	Dynamometer type instruments		
3rd	1st	Rectifier type instruments		
	2nd	Induction type instruments		
	3rd	Extend the range of instruments by use of shunts and Multipliers.		
	4th	Extend the range of instruments by use of shunts and Multipliers.		
	5th	Solve Numerical		

4th	1st	<u>part c (Wattmeter and measurement of power)</u> : Describe Construction, principle of working of Dynamometer type wattmeter. (LPF and UPF type)		
	2nd	Describe Construction, principle of working of Dynamometer type wattmeter. (LPF and UPF type)		
	3rd	Describe Construction, principle of working of Dynamometer type wattmeter. (LPF and UPF type)		
	4th	Describe Construction, principle of working of Dynamometer type wattmeter. (LPF and UPF type)		
	5th	The Errors in Dynamometer type wattmeter and methods of their correction		
5th	1st	The Errors in Dynamometer type wattmeter and methods of their correction		
	2nd	Discuss Induction type watt meters.		
	3rd	Discuss Induction type watt meters.		
	4th	<u>PART D (ENERGYMETERS AND MEASUREMENT OF ENERGY)</u> : Introduction		
	5th	Introduction		
6th	1st	Single Phase Induction type Energy meters – construction, working principle and their compensation & adjustments.		
	2nd	Single Phase Induction type Energy meters – construction, working principle and their compensation & adjustments.		
	3rd	Single Phase Induction type Energy meters – construction, working principle and their compensation & adjustments.		
	4th	Single Phase Induction type Energy meters – construction, working principle and their compensation & adjustments.		
	5th	Testing of Energy Meters.		
7th	1st	Testing of Energy Meters.		
	2nd	<u>PART E (MEASUREMENT OF SPEED, FREQUENCY AND POWER FACTOR)</u> : Tachometers, types and working principles		

	3rd	Tachometers, types and working principles		
	4th	Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters.		
	5th	Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters.		
8th	1st	Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters.		
	2nd	Principle of operation and working of Dynamometer type single phase and three phase power factor meters.		
	3rd	Principle of operation and working of Dynamometer type single phase and three phase power factor meters.		
	4th	<u>PART F(MEASUREMENT OF RESISTANCE, INDUCTANCE& CAPACITANCE)</u> ∴ Classification of resistance		
	5th	Construction, principle of operations of Megger & Earth tester for insulation resistance and earth resistance measurement respectively.		
9th	1st	Construction, principle of operations of Megger & Earth tester for insulation resistance and earth resistance measurement respectively.		
	2nd	Construction and principles of Multimeter. (Analog and Digital)		
	3rd	Construction and principles of Multimeter. (Analog and Digital)		
	4th	Measurement of inductance by Maxwell's Bridge method.		
	5th	Measurement of capacitance by Schering Bridge method		
10th	1st	Measurement of capacitance by Schering Bridge method		
	2nd	<u>PART G (SENSORS AND TRANSDUCER) : Define Transducer, sensing element or detector element and transduction elements.</u>		
	3rd	Classify transducer. Give examples of various class of transducer.		
	4th	Resistive transducer		
	5th	Resistive transducer		
11th	1st	Inductive Transducer		

	2nd	Inductive Transducer		
	3rd	Capacitive Transducer		
	4th	Capacitive Transducer		
	5th	Piezo electric Transducer and Hall Effect Transducer with their applications.		
12th	1st	<u>PART H (OSCILLOSCOPE)</u> Principle of operation of Cathode Ray Tube.		
	2nd	Principle of operation of Oscilloscope (with help of block diagram)		
	3rd	Measurement of DC Voltage & current		
	4th	Measurement of DC Voltage & current		
	5th	Measurement of AC Voltage, current, phase & frequency.		
HOD 		DEAN 	PRINCIPAL 