

TH.4A BASIC ELECTRICAL
 BY
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 SOUMYA SOURAJA PANDA
 LESSON PLAN
 SESSION-2022-23

Sl.No.	Chapter	Hours	WEEK	Lecture No.	Topic to be covered	
1	Chapter-1	04	1	FUNDAMENTAL		
				1	Concept of current flow, source and load State Ohm's law and concept of resistance.	
				1	Relation of V, I & R in series circuit. Relation of V, I & R in parallel circuit.	
				1	Division of current in parallel circuit. Effect of power in series & parallel circuit.	
				1	Kirchhoff's Law. Simple problems on Kirchhoff's law	
2	Chapter-2	7	2	A.C. THEORY		
				1	Generation of alternating emf. Difference between D.C. & A.C	
				1	Define Amplitude, instantaneous value, cycle, Time period, frequency, phase angle, phase difference	
				1	State & Explain RMS value, Average value, Amplitude factor & Form factor with Simple problems.	
				1	Represent AC values in phasor diagrams. AC through pure resistance, inductance & capacitance	
				3	1	AC through RL, RC, RLC series circuits.
					1	Simple problems on RL, RC & RLC series circuits.
					1	Concept of Power and Power factor Impedance triangle and power triangle.
				3	Chapter-3	3
	Give elementary idea on generation of electricity from thermal POWER STATION					
1	HYDRO POWER PLANT					
1	NUCLEAR POWER STATION					

				CONVERSION OF ELECTRICAL ENERGY	
4	Chapter-4	5	4	1	Introduction of DC machines. Main parts of DC machines
				1	Principle of operation of DC generator EMF equation of generator and simple problem.
			5	1	Classification of DC generator Principle of operation of DC motor.
				1	Classification of DC motor. Uses of different types of DC generators & motors
				1	Types and uses of single phase induction motors.
				1	Types and uses of 3-phase induction motors. Concept of transformer & its applications
				WIRING AND POWER BILLING	
5	Chapter-5	4	5	1	Types of wiring for domestic installations
				6	1
			1		List out the basic protective devices used in house hold wiring
			1	Calculate energy consumed in a small electrical installation	
				MEASURING INSTRUMENTS	
6	Chapter 6	3	7	1	Introduction to measuring instruments. Torques in instruments.
				1	Different uses of PMMC type of instruments (Ammeter & Voltmeter). Different uses of MI type of instruments (Ammeter & Voltmeter).
				1	Draw the connection diagram of A.C/ D.C Ammeter, voltmeter, energy meter and wattmeter. (Single phase only).
				CONSERVATION OF ELECTRICAL ENERGY	
7	Chapter 7	4	8	1	Concept of Lumen
				1	Different types of Lamps Filament, fluorescent
				1	Mercury Vapour, Sodium Vapour, Neon, LED bulb and its Construction and Principle
				1	Star rating of home appliances (Terminology, Energy efficiency, Star rating Concept)

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