

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Discipline: MECH	Semester: 6th	Name of the Teaching Faculty C. K. Jena
Subject: P.S.E.	No. of days per week Class Alloted:	Semester from Dt. 14.02.23 to Dt. 23.05.23 No. of Weeks: 15
Week	Class Day	Theory / Practical Topics
1st		<u>INTRODUCTION.</u>
	1st	1. Sources of energy.
	2nd	2. Central and Captive Power Station.
	3rd	3. Classification of Power plants.
2nd	1st	4. Importance of electrical Power in day to day life.
	2nd	5. Method of electrical Power generation.
		<u>THERMAL POWER STATIONS:</u>
	3rd	1. Layout of Steam Power Station.
	4th	2. Steam power cycle.
	5th	3. Carnot Vapour Power cycle with p.v, T.s diagram, Thermal efficiency.
3rd	1st	4. Rankine cycle with p.v, T-s and H.s diagram, Thermal efficiency, K.D, W.R and sp. steam Consumption.
	2nd	5. Numericals on Carnot cycle.
4th	1st	6. Numericals on Rankine cycle
	2nd	7. — do —
	3rd	8. List of thermal Power Stations in the state with their Capacities.
5th	4th	9. Boiler Accessories:
	1st	operation of Air Preheater.
		operation of economiser.
	2nd	operation of electrostatic Precipitator.
	3rd	operation of Superheater.
		Need of boiler Mounting.
		operation of boiler.

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6TH	1st	Draught system.
	2nd	Natural, forced and balanced draught.
	3rd	Advantages and disadvantages.
	4th	Steam turbine. Advantages and disadvantages.
	5th	Elements of steam turbine.
7TH	1st	Governing of steam turbine.
	2nd	Performance of steam turbine.
	3rd	Thermal efficiency, stage efficiency and gross efficiency.
	4th	Steam Condenser: function,
	5th	Classification, Hot well, extraction pump, air extraction pump.
8TH	1st	Circulating pump.
	2nd	Cooling Tower: function and types.
	3rd	Spray ponds.
	4th	Site selection for thermal power plant.
	5th	<u>NUCLEAR POWER STATIONS</u>
9TH	1st	Classification of nuclear fuel.
	2nd	fissile and fertile material.
	3rd	Fission and fusion reaction.
	4th	Working of Nuclear power plant with block diagram.
	5th	Working and Construction of nuclear reactor.
10TH	1st	Comparison bet ⁿ nuclear and thermal plant.
	2nd	Disposal of nuclear waste.
	3rd	Site selection of nuclear power plant.
11TH	1st	List of nuclear power plant.
	2nd	

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Week	Class Day	Theory / Practical Topics
11 TH		<u>DIESEL ELECTRIC POWER STATION</u>
	1 st	Advantages and Disadvantages of diesel electric power station.
	2 nd	Different Systems of Diesel Plant.
	3 rd	Fuel storage and fuel supply system.
	4 th	Fuel Injection system.
	5 th	Air Supply system, Exhaust system.
12 TH	1 st	Cooling system, Lubrication system.
	2 nd	Starting system and governing system.
	3 rd	Site Selection for diesel plant.
	4 th	Performance and thermal efficiency of diesel plant.
		<u>HYDEL POWER STATION</u>
	1 st	Advantages and Disadvantages of hydroelectric power plant.
	2 nd	Classification of hydel power plant.
13 TH	1 st	General arrangement of storage type hydroelectric project and its operation.
	2 nd	Site selection of hydel plant.
	3 rd	List of hydel plant with their capacity.
	4 th	Types of hydro turbine.
	5 th	Numericals.
14 TH		<u>GAS TURBINE PLANT</u>
	1 st	Site selection for G.T.P.
	2 nd	Fuels for G.T.
	3 rd	Elements of simple G.T.P.
	4 th	Merits, Demerits and application of gas turbine power plants.
	5 th	