

PNS SCHOOL OF ENGG & TECH

SUB-PSE(TH-3) NAME OF FACULTY:- ER. RAMAKANT SWAIN & ER JYOTIRMAY JENA

Period	Unit	Topics to be covered
1	01	INTRODUCTION :Energy and its units,Relationship between the units,Power and its units,Relationship between the units
2		Sources of energy,Conventional source and non-conventional source of energy,Types of fuel
3		Classification of power plants as captive and central power plants
4		Distribution of power from power station
5		Discussion of important questions
6	02	THERMAL POWER PLANT : Steam power plant, components of steam power plant ,Layout of steam power plant
7		Thermodynamic Cycle, Types of cycle, Carnot cycle in P-V,T-S Determination of Thermal efficiency
8		Limitations of Carnot cycle, Rankine cycle, P-V,T-S diagram,Determination of thermal efficiency , Net work done,Meaning of work ratio, specific steam consumption of Rankine Cycle
9		Numericals on Carnot cycle
10		Numericals on Rankine cycle using Mollier chart and steam tables
11		List of Thermal power Stations in Odisha with capacity, Boiler and its Accessories, Air-Preheater, Economiser
12		Superheater, Working of Sugden's Superheater
13		Electrostatic precipitator, components and working
14		Boiler mountings and Its need ,operation of boiler
15		Boiler draught and its types, advantages and disadvantages
16		Balanced draught and derivation of minimum height of chimney
17		Comparsion Between Forced draught and Induced draught,Steam Turbines and Its Classification
18		Elements of steam turbine and Governing of Steam turbine
19		Performance of Steam Turbine
20		Steam Condensers and its Classification
21		Working of steam condenser and function of its components
22		Cooling tower and its types
23		Working of cooling Tower and site selection of thermal power stations
24		CLASS TEST
25	03	NUCLEAR POWER PLANT : Pre-requisites of nuclear power plant
26		Nuclear Reaction and its types

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27		Working of Nuclear Power plant
28		Construction and Working of Nuclear Reactor
29		Comparison of Nuclear power plant and Thermal power plant
30		Nuclear Waste and its Classification
31		Nuclear waste disposal methods
32		Site selection of Nuclear Power plant
33		Nuclear Power plants in India
34		Discussion of important questions
35	04	DIESEL ELECTRIC POWER PLANT: Diesel electric power station: its advantages and disadvantages
36		Fuel storage system and fuel supply system of Diesel electric power station
37		Fuel Injection system of diesel electric power station
38		Air supply system and exhaust system of diesel electric power station
39		Cooling and Lubrication system of diesel electric power station
40		Starting system of diesel electric power station
41		Governing system of Diesel Electric power station
42		Selection of site for diesel electric power stations
43		Performance parameters and thermal efficiency of diesel electric power station
44		Discussion of important questions
45	05	Hydel Power station: Its advantages and disadvantages
46		Classification of Hydel power stations
47		General arrangement of storage type hydroelectric project
48		Operation of hydroelectric project
49		Selection of site of hydel power plant
50		Hydro power stations with their capacities and number of units in Odisha
51		Types of turbines and generation used in power stations
52		Numericals on Hydel power stations
53		Numericals on Hydel power stations
54		CLASS TEST
55	06	Gas turbine power station: Selection of site for gas turbine power stations
56		Fuels for gas turbine plants
57		Elements of Simple gas turbine power plant
58		Merits and demerits of Gas turbine power stations
59		Application of gas turbine power stations
60		Discussion of important questions

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