GOVT. POLYTECHNIC MAYURBHANJ , TIKARPADA

ACADEMIC SESSION-2022-23 , LESSON PLAN

Discipline : MECHANICAL ENGG.		Semester: 6th Sem	Name of the Teaching Faculty :SASMITA SAHA
Subject : POWER STATION ENGINEERING.		No. of Days / per week class allotted : 04	Semester From date : 13/2/2023 To Date : 23/5/2023
MONTH	**Week**	**Day**	**Topics**
FEBRUARY	3rd	1st	**CHAPTER -1. INTRODUCTION** :Describe sources of energy
		2nd	Explain concept of Central and Captive powerstation
		4th	Classify power plants.
		5th	Importance of electrical power in day to day life.
	4th	1st	Overview of method of electrical power generation
		2nd	**CHAPTER-2 :THERMAL POWER STATIONS :**Layout of steam powerstation, Steam powercycle
		4th	Explain Carnot vapour power cycle with P-V,T-s diagram and determine thermal efficiency.
		5th	Layout of steam powerstations.
	5th	1st	Explain Rankine cycle with P-V,T-S&H-s diagram
		2nd	Determine thermal efficiency,Workdone,workratio, and specific steam Consumption.
	1st	4th	solve simple problems.
		5th	list of the thermal power station in the state with their capacities
	2nd	1st	Operation of air pre heater
		4th	Operation of economiser,eletrostatic precipitator
		5th	Operation of super heater,need of boiler mountings
	3rd	1st	operation of boiler
		2nd	Draught systems(Naturaldraught,Forceddraught & balanceddraught)

MARCH	3rd	4th	Advantages & disadvantges of Draught systems
		5th	revision
	4th	1st	Advantages & disadvantages of steam turbine
		2nd	Discuss about the elements of steam turbine
		4th	**CLASS TEST -I**
		5th	Governing and Performance of steam turbine.
	5th	1st	Explain Thermal efficiency,Stage efficiency and Gross efficiency.
		2nd	Function of condenser and classification of condenser
		5th	Function of condenser auxiliaries such as hot well,condenser extraction pump,air extraction pump and circulating pump.
APRIL	2nd	1st	Function and type of cooling tower and sprayponds
		2nd	Selection of site for thermal powerstations
		4th	REVISION
	3rd	1st	**CHAPTER- 3 :NUCLEAR POWER STATIONS :**Classify nuclear fuel(Fissile&fertilematerial)
		2nd	Explain fusion and fission reaction.
		4th	Explain working of nuclear powerplants with blockdiagram
	4th	1st	Explain the working and construction of nuclear reactor
		2nd	Compare the nuclear and thermalplants
		4th	Explain the disposal of nuclear waste
		5th	Selection of site for nuclear powerstations.List of nuclear powerstations.
	5th	1st	**INTERNAL EXAMINATION**
		2nd	**CHAPTER-4: DIESEL ELECTRIC POWER STATIONS** : State the advantages and disadvantages of diesel electric power stations.
		4th	Explain briefly different systems of diesel electric power stations.
		5th	Explain Fuel storage and fuel supply system, Fuel injection system,Air supply system in diesel electric power station
		1st	Exhaust system,cooling system,Lubrication system,starting system,governing system of diesel electric power station

MAY	1ST	2nd	Selection of site for diesel electric powerstations.Performance and thermal efficiency of diesel electric powerstations.
		4th	**CHAPTER -5: HYDEL POWER STATIONS** State advantages and disadvantages of hydro electric powerplant.
	2nd	1st	Classify and explain the general arrangement of storage type hydro electric project and explain its operation.
		2nd	Selection of site of hydel powerplant.
		4th	List of hydro power stations with their capacities and number of units in the state.Types of turbines and generation used.
		5th	Simple problems, Revision
	3rd	1st	**CHAPTER- 6: GAS TURBINE POWER STATIONS** :Selection of site for gas turbine stations.
		2nd	Fuels for gas turbine.
		4th	Elements of simple gas turbine power plants
	4th	1st	Merits,demerits and application of gas turbine power plants., Revision
		2nd	CLASS TEST -II