


SIDDARTHA INSTITUTE OF SCIENCE AND TECHNOLOGY
(AUTONOMOUS)

Siddharth Nagar, Narayanavanam Road – 517583

QUESTION BANK (DESCRIPTIVE)
Subject with Code: Power Plant Engineering (19ME0334)

Course & Branch: B. Tech – ME

Year & Sem: IV - B. Tech & I - Sem

Regulation: R19

UNIT –I

1	(a)	Discuss about the resources for power development in India.	[L2]	[CO1]	[6M]
	(b)	What is the present position of power in India?	[L1]	[CO1]	[6M]
2		Explain the layout of steam power plant with neat sketch.	[L2]	[CO1]	[12M]
3		Draw the layout of hydel power plant and explain.	[L1]	[CO1]	[12M]
4		Describe the layout of diesel power plant with neat sketch.	[L2]	[CO1]	[12M]
5		Explain the layout of MHD power plant with a neat sketch.	[L2]	[CO1]	[12M]
6		A 60 MW power station has an annual peak load of 50 MW. The power station supplies loads having maximum demands of 20 MW, 17 MW, 10 MW and 9 MW. The annual load factor is 0.45. Find: (i) Average load. (ii) Energy supplied per year. (iii) Diversity factor. (iv) Demand factor	[L3]	[CO1]	[12M]
7	(a)	Define demand factor and diversity factor.	[L1]	[CO1]	[6M]
	(b)	What is meant by load curve? Explain its importance in power generation.	[L1]	[CO1]	[6M]
8		Discuss the harmful effects of carbon dioxide, carbon monoxide, compounds of Sulphur, and oxides of nitrogen.	[L2]	[CO1]	[12M]
9		Discuss the factors to be considered for the selection of a site for setting up a steam power plant.	[L2]	[CO1]	[12M]
10	(a)	Identify the pollution effects from hydro-electric plants.	[L3]	[CO1]	[6M]
	(b)	List the advantages of combined operation of power plants.	[L1]	[CO1]	[6M]

UNIT –II

1	(a)	What are the advantages of thermal power plants?	[L1]	[CO2]	[6M]
	(b)	List out the disadvantages of thermal power plants.	[L1]	[CO2]	[6M]
2		Explain the pulverized fuel burning systems.	[L2]	[CO2]	[12M]
3		Organize types of equipment used for transferring coal?	[L4]	[CO2]	[12M]
4	(a)	Summarize types of coal.	[L2]	[CO2]	[6M]
	(b)	What are the properties of coal?	[L1]	[CO2]	[6M]

5		Explain with a neat diagram the process of coal handling from coal mines to combustion chamber.	[L2]	[CO2]	[12M]
6	(a)	Discuss over feed fuel bed.	[L2]	[CO2]	[6M]
	(b)	Describe underfeed fuel bed.	[L2]	[CO2]	[6M]
7	(a)	Illustrate the working of a chain grate stoker.	[L2]	[CO2]	[6M]
	(b)	Explain the working of a spreader stoker.	[L2]	[CO2]	[6M]
8		Explain about cyclone furnace, its design and construction.	[L2]	[CO2]	[12M]
9		Demonstrate ash handling systems.	[L2]	[CO2]	[12M]
10	(a)	Examine the pollutants and methods used to measure them.	[L3]	[CO2]	[6M]
	(b)	Illustrate the working of an electrostatic precipitator.	[L2]	[CO2]	[6M]

UNIT-III

1	(a)	What is an IC engine? Explain its applications.	[L1] [L2]	[CO3]	[6M]
	(b)	How would you classify IC engines? Brief them.	[L2]	[CO3]	[6M]
2		Explain the working of a diesel power plant with a neat sketch.	[L2]	[CO3]	[12M]
3	(a)	Discuss the functions of a diesel engine's fuel system.	[L2]	[CO3]	[6M]
	(b)	What is meant by super charging and mention the advantages?	[L1]	[CO3]	[6M]
4	(a)	Describe a simple open cycle gas turbine plant with a simple line diagram.	[L2]	[CO3]	[6M]
	(b)	Compare a closed cycle gas turbines with open cycle gas turbine.	[L4]	[CO3]	[6M]
5		Construct a line diagram of combined steam and gas turbine power plants and explain.	[L6]	[CO3]	[12M]
6	(a)	How does inter cooling help in improving thermal efficiency of the gas power plant?	[L2]	[CO3]	[6M]
	(b)	Explain the process of reheating and regeneration.	[L2]	[CO3]	[6M]
7		List out the advantages and disadvantages of combined cycle power plant.	[L1]	[CO3]	[12M]
8	(a)	Classify the gas turbines. Write the major field of application of gas turbines.	[L4]	[CO3]	[6M]
	(b)	List out few fuels for Gas turbine and why these fuels are used for gas turbine.	[L1]	[CO3]	[6M]
9		Explain different types of Fuel supply system.	[L2]	[CO3]	[12M]
10		Summarize the important components of an I.C. engine.	[L2]	[CO3]	[12M]

UNIT-IV

1		What is meant by Hydropower? Explain Hydrological cycle with a neat sketch.	[L1] [L2]	[CO4]	[12M]
2		Explain the need for flow measurement and the methods for flow measurement.	[L2]	[CO4]	[12M]

3	(a)	Define drainage area and its characteristics.	[L1]	[CO4]	[6M]
	(b)	Discuss hydrograph and flow duration curve and their use for hydro plants.	[L2]	[CO4]	[6M]
4.		Classify the dams and explain them.	[L4]	[CO4]	[12M]
5.	(a)	Differentiate between Storage and Pondage.	[L4]	[CO4]	[6M]
	(b)	Classify Hydroelectric power plants.	[L4]	[CO4]	[6M]
6.		Discuss different types of spill ways.	[L2]	[CO4]	[12M]
7.	(a)	Illustrate high head power plant with a neat sketch.	[L2]	[CO4]	[6M]
	(b)	Compare base load plant with peak load plant.	[L4]	[CO4]	[6M]
8.	(a)	List out the hydroelectric power plant auxiliaries.	[L1]	[CO4]	[6M]
	(b)	How to select prime movers for hydroelectric power plant?	[L2]	[CO4]	[6M]
9.		Discuss a pumped storage power plant with neat diagram.	[L2]	[CO4]	[12M]
10.		Explain governing mechanism of turbines with a neat Sketch.	[L2]	[CO4]	[12M]

UNIT-V

1	(a)	What is nuclear fuel? List the advantages of nuclear Energy.	[L1]	[CO5]	[6M]
	(b)	Explain nuclear fission process.	[L2]	[CO5]	[6M]
2	(a)	Discuss true chain reaction.	[L2]	[CO5]	[6M]
	(b)	Enumerate the requirements of fission process.	[L1]	[CO5]	[6M]
3		Explain a nuclear reactor with neat diagram.	[L2]	[CO5]	[12M]
4	(a)	Define critical mass, breeding and fertile materials.	[L1]	[CO5]	[6M]
	(b)	Describe boiling water reactor with neat diagram.	[L2]	[CO5]	[6M]
5		Explain with a neat diagram Pressurized water reactor.	[L2]	[CO5]	[12M]
6		Discuss sodium-graphite reactor with a line diagram.	[L2]	[CO5]	[12M]
7		Draw a fast breeder reactor and explain.	[L1]	[CO5]	[12M]
8	(a)	Summarize the radiation hazards on living beings.	[L2]	[CO5]	[6M]
	(b)	Define shielding and its purpose.	[L1]	[CO5]	[6M]
9	(a)	Define radioactive waste. Necessity of its disposal.	[L1]	[CO5]	[6M]
	(b)	Describe radioactive waste disposal methods.	[L2]	[CO5]	[6M]
10		List out all the advantages and disadvantages of a nuclear power plant.	[L1]	[CO5]	[12M]

Prepared by: **Dr. C. Sreedhar**