

SUBJECT CODE / SUBJECT NAME: POWER PLANT ENGINEERING
SEMESTER: IV SEM-EEE (A & B SECTIONS)

PART A

1. What are the super critical boilers?
2. What do you understand by moderation?
3. What do you understand by the term equivalent evaporation?
4. What are the micro-hydel plants? Why are they important now-a-days?
5. What are fast breeder reactors?
6. Define maximum demand and load factor.
7. What are the fixed costs?
8. What are the applications of diesel power plants?
9. Why re-heaters and re-generators are used in power plants?
10. How the ash produced is important factor in the selection of thermal power plant?
11. What is water hammer?
12. What are the different fields where diesel power plant is essential?
13. What is super critical boiler? List down its merits.
14. Define fluidization.
15. What are the transfer equipments of coal handling at plant?
16. What is a 'CANDU' reactor?
17. What are the functions of steam condenser?
18. What is chain reaction?
19. Define the term "Breeding"?
20. How diesel plants are classified?

PART – B

1. Draw the layout of a coal based thermal power station of 200 MW capacity showing all necessary components and its function.
2. With neat sketch explain the working principle of the combined MHD- steam power plant.
3. Discuss the factors those go in the favour of nuclear power plant as compared to other types of types of power plants.
4. Draw a neat sketch of a La-Mont boiler and discuss its merits and de-merits over Benson boiler.
5. Explain the working principle of a fluidized bed combustion system with a neat sketch.
6. Explain the working principle of the electro static precipitator with neat sketch and give its outstanding features over other dust collectors.

7. Describe with the help of neat sketches the working principle of 'forced draft' and 'induced draft cooling towers.
8. Describe the boiling water reactor with the help of neat sketch and explain its chief characteristics.
9. Discuss the salient feature of the nuclear waste disposal.
10. Draw a neat diagram of in plant coal handling and indicate the equipment used at different stages.
11. Explain the advantages of pulverized coal burning.
12. Describe the automatic control of fuel and air supply systems in boiler
13. Discuss the various losses those are encountered in boilers .
14. What are the elements which contribute to the cost of the electricity, and how can the cost of power generation be reduced?
15. Determine the generating cost per unit of 80 MW power station with the following data
Capital cost = Rs. 160×10^7
Annual cost of fuel = Rs. 32×10^6
Annual wages & taxes = Rs. 36×10^6
Interest & depreciation = 10% of capital cost.
Annual load factor = 45%
16. Sketch and explain the two pool tidal power plant .
17. Describe with a neat sketch the working of a solar thermal receiver system plant and enumerate the advantages and disadvantages of concentrating collectors over flat plat collectors.
18. With a neat sketch indicate the function of various parts of a nuclear reactor.
19. What are the different components of a nuclear power plant? Explain the working of a nuclear power plant.
20. Draw the layout of thermal power plant and explain the functions of each component in it?
21. What are the factor considered for section of site of a hydro electric power plant?
22. Explain the construction and working principles of diesel power plant and state its applications.
23. Explain the working principle of nuclear power plant.
24. Draw a neat line diagram of Benson boiler and discuss its relative merits and demerits.
25. Explain with neat sketch the principle of PFBC system.
26. What is meant by coal storage? Discuss the different methods used for coal storage at plant?
27. Name the various methods of ash handling. Describe the pneumatic system of ash handling.
28. Explain the working principles of electrostatic precipitator (ESP) and state its advantages and disadvantages.
29. Explain the operation of balanced draught with neat sketch.

30. Explain the different types of cooling towers used in thermal power plants?
31. Write short notes on I. Boiling Water Reactor. ii. Fast Breeder Reactor.
32. Explain the methods of governing of an impulse turbine
33. Explain with neat sketch the indirect gas cooled reactor.
34. Explain the essential components of diesel power plant with a neat layout.
35. Write short notes on the following for gas turbine
 - i. Reheating ii. Regeneration iii. Intercooling
