**DEPARTMENT OF MECHANICAL ENGINEERING**

**ME2403-POWER PLANT ENGINEERING**

**SEMESTER/YEAR:VII/VI**

**UNIT 1**

**INTRODUCTION TO POWER PLANT AND BOILERS**

**TWO MARKS**

1. Mention a few characteristics of diesel power plant.

2. What are the advantages of high pressure boiler?

3. What do you understand by MHD.

4. State the importance of load curves.

5. State the advantages and disadvantages of the hydroelectric power plant.

6. Classify power plants on the basic of traditional use.

7. Indicates the advantages of load duration curve over load curve.

8. What factor should be taken in to consideration while selecting the site for steam power plant?

9. What is the significance of load curves.

10. Give the requirement of chain reactions.

11. List out the inherent advantages of combined power cycles.

12. Discuss the essential factors which should be considered while selecting a site for hydro electric power plant.

13. Define supercritical boilers.

14. What are the application of diesel power plant.

15. What do you understand by water hammer?

16. What is meant by fluidized bed combustion?

17. what is topping cycle?

18 what is the function of economizer?

19. what are the main units in a gas turbine power plant?

20. what is the purpose of surge tank in hydroelectric power plant?

**SIXTEEN MARKS**

1. What is the difference between Velox and Loffler Boiler. Explain with neat sketch.

2. i) Draw and explain the working of Combined power cycle plants

 ii) What is the basis for selecting a site for hydro power plants.

3. Explain the working of high head hydro power plant giving its layout clearly.

4. i) Explain the unique feature of high pressure boilers.

 ii) Enumerate the advantages of fluidized bed boiler over conventional

5. Explain the working of steam power plant with a schematic diagram.

6. Discuss the advantages of combined cycle power generation. Explain the working of GT-ST combined cycle plant.

7. i) What is a supercritical boiler. List down its merits and demerits.

 ii) What is acid rain. Explain how sulphur is removed in a fluidized bed combustor.

8. Draw a neat diagram of diesel power plant and explain the essential component of the plants.

9. i) Distinguish between hydro power plant and thermal power plant.

 ii) Distinguish between high pressure boiler and supercritical boiler.

10. With neat diagram, explain the working principle of the combined MHD and steam open cycle power plant.

 **UNIT II**

**STEAM POWER PLANT**

**TWO MARKS.**

1. What are the principles of stoker’s?
2. What are the advantages pulverized coal.
3. What are the uses of ash?
4. What are the types of dust collecting equipments?
5. What are the various methods of obtaining draught controls?
6. What is a cooling tower? State its application.
7. What is necessity of draft tubes? List the types
8. What is the significance of specific speed of hydraulic turbines?
9. What do you understand by the term Boiler draught?
10. What is cyclone separator?
11. State the characteristic of good ash handling plants
12. Draw a neat sketch of screw conveyors? What is pulverization?
13. What are the different types of chemical used in feed water treatment?
14. What is acid rain?
15. What are the different pollutions in the fuel gas?
16. What are the types of oil burners?
17. What are the requirements of a modern surface condenser?
18. What the different is between overfeed and underfeed stokers?
19. What are the limitations of chimney draught?

**SIXTEEN MARKS.**

1. a) Draw an explanatory line diagram of an ash handling system employed in steam power plants and also explain the difficulties encountered in the handling of ash in a thermal power station. (10)

 b) Explain the difficult types of coal handling process. (6)

 2. a) Explain the principle involved in preparation of coal and what are the methods of preparation? (10)

 b) What are the different types of dust collectors used? (6)

 3. What are the different types of pulverizing mills? Explain with its neat sketch. (16)

 4. How ash is handled in the power plant? Explain the ash handling system. (16)

 5. What are the methods used for pulverized fuel burning? (16) 6. Explain the various draught systems with a neat sketch. (16)

7. Explain the principle involved in design of chimney. (16)

8. What are the different types of cooling towers? Explain with a neat sketch. (16)

9. Explain the analysis of pollution from thermal power plants. (16)

10. What are the methods used for control the pollutants. (16)