



PART B — (5 × 16 = 80 marks)

11. (a) What are the advantages of a hydro electric power plant over a thermal power plant? Explain with a neat sketch, the operation of MHD power plant. (8 + 8)

Or

- (b) A power station has the yearly load duration curve as a straight line from 30,000 to 40,000 kW. To meet the load, three turbo-generators are installed. The capacity of two generators is 15,000 kW each and the third is rated at 5,000 kW. Determine the load factor, Capacity factor and Maximum demand. (8 + 4 + 4)

12. (a) Draw a neat sketch of unit system of pulverized fuel firing with various components in the system and explain. What are the advantages of pulverized fuel firing? (10 + 6)

Or

- (b) What is the function of a cooling tower in a modern steam power plant? Describe with a neat sketch the working of a mechanical type cooling tower. (4 + 12)

13. (a) What is a chain reaction? How it is controlled? Explain with a neat sketch a boiling water reactor.

Or

- (b) Explain the features of pumped storage power plants. Discuss its merits and demerits. What are the applications of hydro — electric power plants? (6 + 5 + 5)

14. (a) Describe the auxiliary equipments of a diesel engine power plant. What are the disadvantages of this plant? (10 + 6)

Or

- (b) What are the methods used for improving the efficiency of a gas turbine plant? Explain the working of any one type of combustion chamber used in gas turbine plant. (4 + 12)

15. (a) Discuss the different systems used for generating power using geothermal energy. (16)

Or

- (b) What do you understand by power plant economics? Explain the fixed costs and operating costs of a power station. (4 + 12)