

[Time: Three Hours]

[Marks:80]

- Note : 1) Question No.1 is compulsory.  
 2) Attempt any 3 questions from remaining five questions.  
 3) Figure to the right indicate full marks.  
 4) Make suitable assumptions wherever necessary.  
 5) Draw suitable diagram wherever necessary

**Q 1. Attempt any Four 20**

- a) Describe the Load Factor and Plant Capacity Factor.  
 b) State and Explain the selection criteria for Hydro Power Plant.  
 c) Explain Nuclear Fission and Fusion.  
 d) What Factors affect a Runoff data at a particular site?  
 e) Write about the Conventional and Non-Conventional sources of energy.

**Q2 a) Explain the Thermal Power Plant in detail with its neat block diagram.  
 b) Explain Pressurized Water Reactor with its advantages and disadvantages. 20**

**Q3 a) Explain Operation of Diesel Power Plant with layout.  
 b) Discuss the role of Super Heater and its impact on the performance of power plant. 20**

**Q4 a) Explain the performance of Gas Turbine Power Plant.  
 b) Discuss the broad classification of Hydro Electric Power Plant with figure. 20**

**Q5 a) Explain Ash handling plant in Steam Power Station.  
 b) Describe Solar Power Plant. Write short notes on Solar Active and Passive Collectors. 20**

**Q6 a) Explain operation of PWR Nuclear Reactor with its advantages and disadvantages. 20**

**b) The maximum demand of a power station is 9600KW. It has to supply the load as follows:-**

|            |     |     |      |       |       |       |       |
|------------|-----|-----|------|-------|-------|-------|-------|
| Time (Hrs) | 0-6 | 6-8 | 8-12 | 12-14 | 14-18 | 18-22 | 22-24 |
| Load (MW)  | 48  | 60  | 72   | 60    | 84    | 96    | 48    |

**1) Draw Load Curve and Load Duration Curve. 2) Calculate Load Factor.**

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