[Time: 3 Hours] **[Marks:80]**

Please check whether you have got the right question paper.

N.B:
1. Question No.1 is Compulsory.
2. Answer any three out of remaining five questions
3. Assume any suitable data wherever required but justified the same
4. Illustrate answer with sketches wherever required

Q.1 Attempt any **four**

a. How you will illustrate the comparison between base load plant and peak load plant. **05**

b. Pertaining to the operation of the various types of nud lear power plants, explain **05**

c. the role played by the Moderator and Coolant **05**

d. Illustrate the principle of operation of Gas turbine power plant. **05**

e. Illustrate the Rankine cycle with reference to thermal power plant operation **05**

f. Illustrate the principle of operation of Fuel cell.

Q.2

a. Name and explain the essential elements of a hydroelectric power plant **10**

b. Illustrate in brief ash handling plant in steam power station **05**

c. What is the significance of Super heater towards enhancement of performance of thermal power plant? **05**

Q.3

a. Explain BWR type nuclear reactor with neat sketch. Give its advantages and disadvantages. **10**

b. Illustrate the induced draught fan and forced draught fan in a thermal power plant. **10**

Q.4

a. A power plant has following annual factors: **10**

Load Factor = 0.6
Plant Use Factor = 0.45
Plant Capacity Factor = 0.4
If Maximum demand is 30MW, find the following:-

i) Annual energy consumed in 365 days in a year
ii) Reserve capacity of plant
iii) No. of ms. per year during which the plant is not working

b) Draw and illustrate the operation of Diesel power, plant **10**

Q.5

a. Illustrate horizontal axis and vertical axis wind turbine power plant **10**

b. Describe the operation of Solar pond power plant. **10**

Q.6 Write short note on **20**

i) Surge Tank
ii) Tidal Power Plant
iii) Solar Concentrators
iv) Pelton Turbine

****