22327

24225

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

(5) Use of Non-programmable Electronic Pocket Calculator is permissible.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following : **5 × 2 = 10**

(a) State any four applications of diesel power plant.

(b) Classify hydro power plant based on head of water available.

(c) State any four hydro power plant in Maharashtra (Name with capacity).

(d) List the types of concentrated solar power plant.

(e) State advantages of grid connected solar system.

(f) State range of wind speed required for installing wind power plant.

(g) Define hot reserve and cold reserve.

2. Attempt any THREE of the following : **3 × 4 = 12**

(a) State the advantages of Nuclear Power Plant.

(b) Explain the factors considered for site selection of hydro power plant.

(c) Draw neat sketch diagram of horizontal axis wind power plant.

(d) Compare base load power plant and peak load power plant on the basis of :

(1) Meaning

(2) Generation capacity

(3) Working hours

(4) Cost of per unit generation

3. Attempt any THREE of the following : **3 × 4 = 12**

(a) Draw neat sketch of layout of Nuclear power plant.

(b) Describe safety practices to be followed in hydro power plant.

(c) Explain Municipal waste power plant with block diagram.

(d) Explain geared wind power plant generator.

4. Attempt any THREE of the following : **3 × 4 = 12**

(a) Describe the function of following component of thermal power plant :

(1) Super heater

(2) Economiser

(3) Steam turbine

(4) Alternator

(b) Differentiate flat plate collector with concentrating type solar collector.

(c) State the salient features of electric generator used in large wind power plant.

(d) Describe the meaning of :

(1) Maximum Demand

(2) Average Demand

(3) Plant Capacity Factor

(4) Load Factor

(e) Explain the choice of size and number of generator units in a power plant.

5. Attempt any TWO of the following : **2 × 6 = 12**

(a) Compare fire tube boiler with water tube boiler (six points).

(b) Draw layout of hydro power plant and explain function of different parts of hydro power plant.

(c) State types of concentrating solar plant and explain any one with neat sketch.

6. Attempt any TWO of the following : **2 × 6 = 12**

(a) State types of water turbine and explain pelton wheel turbine with neat sketch.

(b) Draw and explain biomass power plant.

(c) The load on power plant is as given below :

Time in hours	0 – 6	6 – 9	9 – 12	12 – 6	6 – 10	10 – 12
Load in MW	20	40	30	10	50	20

Draw load curve and load duration curve and also calculate :

(1) Energy generated during 24 hours.

(2) Load factor
