



17324

15116

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) *All questions are compulsory.*
 - (2) *Answer each next main question on a new page.*
 - (3) *Illustrate your answers with neat sketches wherever necessary.*
 - (4) *Figures to the right indicate full marks.*
 - (5) *Assume suitable data, if necessary.*
 - (6) *Use of Non-programmable Electronic Pocket Calculator is permissible.*

Marks

1. Attempt any ten :

20

- a) State the importance of electrical power in day today life.
- b) List out thermal power stations in Maharashtra and write their generating capacities.
- c) State "Spray pond" in connection with thermal power plant.
- d) Write the meaning of "Surface runoff" in hydro power plant.
- e) List out any two disadvantages of hydro power plant.
- f) Define "radioactive isotopes".
- g) Name any two parts of reactor and also write their functions.
- h) State the meaning of "Captive power".
- i) Define "firm power".
- j) State the meaning of interconnection of power system.
- k) Write all types of reactors.
- l) List out any two applications of diesel power plant.

2. Attempt any four :

16

- a) List out any four renewable sources of energy and also write their future perspectives, in short.
- b) Distinguish between super heater and reheater in steam power plant and write their functions.
- c) Draw the flue gas flow diagram of thermal power plant and label all parts.
- d) Illustrate the term "hydrology" in hydro power plant and state its significance.
- e) Explain ash disposal section in steam power plant.
- f) Write any four merits of steam power plant.

P.T.O.

**Marks**

- 3. Attempt any four :** **16**
- a) Discuss any four factors necessary for selection of hydro power plant site.
 - b) Draw the schematic diagram of advanced gas cooled reactor and label all parts.
 - c) Discuss the engine starting system in diesel power plant with neat diagram.
 - d) Explain turbo alternator in steam power plant.
 - e) Compare prime movers used in hydro power plant with respect to their construction, speed, capacity and head available.
 - f) Discuss the control of nuclear reactors by using control rods.
- 4. Attempt any four :** **16**
- a) State the advantages of hydro power plant.
 - b) Explain the use of diesel power plant as captive power.
 - c) Explain load duration curve with neat diagram.
 - d) Show with the help of schematic diagram coal handling unit in steam power plant.
 - e) State the types of captive power plants and explain in brief.
 - f) Classify different condensers used in steam power plant and write their functions.
- 5. Attempt any four :** **16**
- a) Explain the procedure of disposal of nuclear waste in short.
 - b) State the principle of solar cell and give its ratings.
 - c) Classify solar collectors and draw constructional diagram of any one collector.
 - d) Show the schematic arrangement of a typical nuclear power plant.
 - e) Classify hydro power plant on the basis of load and head available.
 - f) State the factors due to which the location of nuclear power plant site nearer the load centres becomes difficult.
- 6. Attempt any four :** **16**
- a) List types of solar cells with their efficiencies.
 - b) Distinguish between base and peak load.
 - c) Draw the block diagram showing basic wind energy conversion system and write function of each block.
 - d) Identify any two advantages and any two disadvantages of nuclear power plant.
 - e) A generating station has a connected load of 43 MW and maximum demand of 20 MW. The units generated are 61.5×10^6 per year. Calculate :
 - i) Demand factor and ii) Load factor.
 - f) List out any four limitations of wind energy.
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