



22566

12223

3 Hours / 70 Marks

Seat No.

0	0	2	3	6	8	5	8
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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.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.
 - (8) Use of steam tables, logarithmic, Mollier's chart is permitted.

Marks

1. **Attempt any FIVE :**

5 × 2 = 10

- (a) Name any four components of diesel power plant.
- (b) State the principle of Fluidized bed combustion boiler.
- (c) List different fuel handling systems used in Steam Power Plant.
- (d) Define term 'Waste Heat Recovery'.
- (e) State the objectives of 'International Atomic Energy Agency'.
- (f) Define term 'Load Factor'.
- (g) Classify 'Hydroelectric Power Plant'.



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3 × 4 = 12

2. Attempt any THREE :

- (a) Explain 'World and National scenario of demand and supply of energy' in brief.
- (b) Differentiate between Velox and Loffler Boiler.
- (c) State the advantages and disadvantages of Steam Power Plant with respect to Gas Power Plant.
- (d) Explain the need of 'Cogeneration' with suitable example.

3. Attempt any THREE :

3 × 4 = 12

- (a) Draw a layout of 'Hydro-Electric Power Plant'.
- (b) List different methods to improve thermal efficiency of open cycle constant pressure gas turbine power plant. Explain in brief any one.
- (c) Write any four standard practices of waste heat recovery in Thermal Power Plant.
- (d) Explain construction of 'Pressurized Heavy Water Reactor' with neat sketch.

4. Attempt any THREE :

3 × 4 = 12

- (a) Write the maintenance procedure of 'Diesel Generation Set' using in your institute.
- (b) List different safety practices used in nuclear power plants of India.
- (c) Explain with graphical representation of effect of load factor on cost of energy per kWh.
- (d) Draw layout of Diesel Power Plant.
- (e) Explain following terms :
 - (i) Load Factor
 - (ii) Average Load

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5. Attempt any TWO :

 $2 \times 6 = 12$

- (a) Draw a neat sketch of 'Ramsin Boiler'. Explain its constructional details.
- (b) Explain with neat sketch the working of 'Electro Static Precipitators'.
- (c) Draw layout of 'BWR Nuclear Power Plant'. State its advantages.

6. Attempt any TWO :

 $2 \times 6 = 12$

- (a) Explain in detail the main features of 'Indian Boiler Regulation Act'.
- (b) Write the standard maintenance procedure of 'Gas Power Plant'.
- (c) A power plant has following annual factors :

Load factor = 0.75, Capacity factor = 0.60, Use factor = 0.65, Maximum demand is 50 MW. Estimate annual Energy Production, a reserve capacity over and above the peak load and the hours during which the plant is not in service per year.
