

22566

12425

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 :

10

- (a) List components of hydro-electric power plant.
- (b) State classification of high pressure.
- (c) State any four advantages of gas turbine power plant.
- (d) Define need of cogeneration.
- (e) Enlist any four nuclear power plants in India.
- (f) Define Depreciation Cost.
- (g) State the importance of power plant.

2. Attempt any THREE of the following :

12

- (a) State any four applications of diesel power plant.
- (b) Explain types of control system in steam power plant.
- (c) Explain with neat sketch construction and working of Benson boiler.
- (d) Explain with neat sketch cogeneration in thermal power plant.



- 3. Attempt any THREE of the following : 12**
- (a) Compare the hydroelectric plant and diesel power plant.
 - (b) Explain with neat sketch Electrostatic precipitators.
 - (c) State the benefits of tri-generation.
 - (d) Explain pressurized water reactor power plant.
- 4. Attempt any THREE of the following : 12**
- (a) List advantage and disadvantages of hydro power plants over thermal power plant.
 - (b) Explain construction and working of nuclear power plant.
 - (c) What are the factors affecting on choice of power plant ?
 - (d) Write a note on maintenance of diesel power plant.
 - (e) In a power station annual factors are under load factor 65%, capacity factor 55% and use factor 60%. The power plant has a maximum demand of 45,000 kW.
Find :
 - (i) Annual energy production
 - (ii) Reserve capacity above peak load
 - (iii) Hours per year the plant is not in use.
- 5. Attempt any TWO of the following : 12**
- (a) Explain Indian Boiler Regulation Act.
 - (b) Explain with neat sketch intercooling method used to improve the thermal efficiency of open cycle gas turbine plant.
 - (c) Draw and explain sodium graphite reactor power plant.
- 6. Attempt any TWO of the following : 12**
- (a) Explain types of fluidized bed boilers.
 - (b) Draw schematic diagram of boiler feed water control system. State its importance in thermal power plant.
 - (c) A thermal power plant consist of two units of 25 MW each running of 7100 hours and one unit of 10 MW running for 1500 hours in a year. The energy produced by the plant 350×10 kWh per annum. Calculate plant load factor and plant use factor.
-