

Time : 3 Hours]

[Total Marks : 80
 [Min. Passing Marks : 24

*Attempt any five questions. Selecting one question from each unit.
 All questions carry equal marks. Schematic diagrams must be
 shown wherever necessary. Any data you feel missing suitably
 be assumed and stated clearly. Units of quantities used /
 calculated must be stated clearly.*

Use of following supporting material is permitted during examination.
 (Mentioned in form No. 205)

1. _____ NIL _____ 2. _____ NIL _____

UNIT - I

- 1 (a) Explain Nuclear fission and Nuclear fusion type of Nuclear power plant. What are advantages of nuclear generation ? 8
 (b) Explain Hydro power plant, who are they classified ? 8

OR

- 1 (a) Explain open cycle and closed cycle gas turbine plants. 8
 (b) In a nuclear power plant explain schemes with boiling water Reactor, heavy water reactor and fast breeder reactor. 8

UNIT - II

- 2 (a) Explain the conversion of solar energy into electrical energy in a solar power plant. 8
 (b) What are Renewable energy source who are they different compare to non-renewable energy source ? 8

OR



- 2 (a) Explain generation of electrical energy by help of wind. 8
(b) What are impact of thermal and nuclear power plant on our environment ? 8

UNIT - III

- 3 (a) What do you mean by power factor ? What are disadvantage and cause of low power factor and how it can be improved ? 8
(b) The annual load duration curve of a small hydroplant is 438×10^4 kWh of energy during the year. It is a peak load plant with 20% annual load factor. Find station capacity. If plant capacity factor is 15% find reserve capacity of plant. 8

OR

- 3 (a) What is chronological curve and who are they different from load duration curve? Why is load forecasting necessary ? 8
(b) Define following terms for a power station.
(i) Demand factor
(ii) Load factor
(iii) Capacity factor
(iv) Diversity factor 8

UNIT - IV

- 4 (a) Explain concept of co-generation and energy conservation. 8
(b) Explain the following :
(i) Capital cost of plant
(ii) Annual fixed cost of plant
(iii) Operating cost of plant
(iv) Depreciation 8

OR

- 4 (a) Calculate most economic power factor when kVA demand is kept constant. 8
(b) Explain effect of load factor on unit energy cost. Also explain role of load diversity in power system economics. 8



UNIT - V

- 5 (a) Discuss various types of reserve and size of power plant. 8
- (b) An industrial undertaking has connected load of 100 kW. The maximum demand is 80 kW. On an average each machine work for 60% time. Find the yearly expenditure on electricity if the tariff is Rs. 6000 + Rs. 700 per kW of maximum demand per year + Re. 1.80 per kwh. 4
- (c) Explain objectives of tariffs and General Tariff. rtuonline.com 4

OR

- 5 (a) Give a comprehensive comparison of thermal, hydro and nuclear power source. 8
- (b) Discuss different types of tariffs used for charging the consumers of electric energy. 8

