

UNIT - II

- 2 (a) With suitable diagram explain Vapour Turbine Cycle of converting geothermal energy into electrical energy. What are the disadvantages of geothermal energy ? 8
- (b) Explain Green House effect. 8

OR

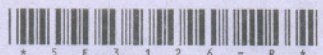
- 2 (a) Discuss the impact of thermal and hydro power stations on the environment. 8
- (b) Compare Renewable and non renewable energy sources. 8

UNIT - III

- 3 (a) What is the difference between chronological curve and load duration curve ? What is the necessity of load forecasting ? 8
- (b) The annual load duration curve of a small hydroplant shows 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 the plant. 8

OR

- 3 (a) Discuss the causes and effects of low power factor. 8
- (b) Find the power factor of an installation supplying the following loads : 300 kW at unity power factor, 1000 kW at 0.9 lagging power factor and 1500 kW at 0.8 lagging power factor. Also find the maximum load at unity power factor which can be supplied by this substation. 8



UNIT - IV

- 4 (a) What is depreciation reserve ? Why is it necessary to maintain it ? Discuss the method to calculate the depreciation reserve. 8
- (b) Calculate most economic power factor when kVA demand is kept constant. 8

OR

- 4 (a) Differentiate between fixed and operating cost of power plants. List various items which contribute to the fixed and operating costs. 8
- (b) Why is it not economical for consumer to raise power factor to unity ? How can the most economical power factor be determined for a consumer installation. 8
- 5 (a) Discuss different types of tariffs used for charging the consumers of electric energy. 10
- (b) Two monthly tariffs are offered
(i) Rs. 3000 + Rs. 0.90 per kwh
(ii) Rs. 3.00 per kwh.
At what consumption per month tariff (i) is more suitable for consumer. 6

OR

- 5 (a) What is the special feature of two part tariff ? For which category of consumer it is used ? 6
- (b) An industrial consumer has an annual energy consumption of 201500 kwh at a load factor of 0.35. The tariff is Rs. 9000 + Rs. 1200 per kw of maximum demand + Rs. 2.20 per kWh.
(i) Find his annual bill
(ii) What is the bill if total energy consumption is the same but load factor improved to 0.55
(iii) What is the bill if energy consumption is reduced by 25% and load factor is 0.35
(iv) Find average energy cost in each case. 10

