

PECMEL321 - Power Plant Engineering

Time : Three Hours



Max. Marks : 80

6. a) Explain the construction and operation of different components of hydro-electric power plants. 8
- b) Discuss the various factors which govern the site selection of hydro plant. 8
7. a) Discuss closed cycle gas turbine plant in detail. 8
- b) Derive the expression for efficiency of constant pressure open cycle gas turbine. 8

OR

8. Write short notes on **any two**. 16
- a) Geothermal power generation
- b) Wind power
- c) Solar power
9. a) What do you mean by load curve? Differentiate between load curve and load duration curve. 8
- b) Write short notes on **any two**. 8
- i) Tariff for electrical energy
- ii) Cost of electrical energy
- iii) Plant capacity and use factor

OR

10. The following data for a 2200 kW diesel power station is given. The peak load on plant is 1600 kW and its load factor is 45%. Capital cost/kW installed = Rs. 1500000, Annual costs = 15% of capital, Annual operating costs = Rs. 60000000, Annual maintenance cost = Fixed Rs. 10000000 and Variable Rs. 20000000, Cost of Fuel = Rs. 80/kg, Cost of lubricating oil = Rs. 400/kg CV of fuel = 40000kJ/kg, Consumption of fuel = 0.5kg/kwh, Consumption of lubricating oil = 1/400 kg/kWh, Determine- 16
- a) The annual energy generated
- b) The cost of generation in Rs/kwhr.
