

END TERM EXAMINATION**SIXTH SEMESTER [B.TECH] MAY- JUNE 2017****Paper Code: ETEE-312****Subject: Power Station Practice****Time: 3 Hours****Maximum Marks: 75**

**Note: Attempt any five questions including Q.No1 which is compulsory.
Select one question from each unit.**

- Q1 (a) Write conditions for selecting site of a thermal station. (5x5=25)
 (b) Differentiate between open and closed cycle gas turbine plants.
 (c) Compare between Kaplan and Francis turbine.
 (d) What do you understand by supercharging in diesel engine?
 (e) Classify different types Nuclear Reactors.

UNIT-I

- Q2 Write short notes on:- (12.5)
 (i) Solar energy
 (ii) Geothermal energy
 (iii) Tidal energy
 (iv) Bio Gas energy
 (v) Wind energy

- Q3 Explain in detail how Fuel and Ash are handled in thermal power plant. (12.5)

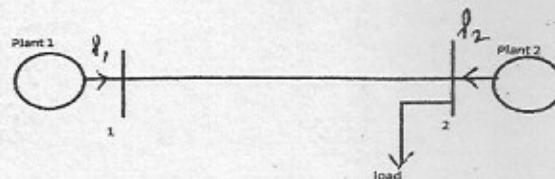
UNIT-II

- Q4 Write methods for improving thermal efficiency of Gas Turbine Plant. (12.5)
 Q5 (a) Draw and explain typical layout of a diesel engine power station. (6.5)
 (b) Draw and explain characteristics of hydro-electric turbines. (6)

UNIT-III

- Q6 A system consists of two plants connected by a transmission line as shown in figure 1. The load is at plant 2. If a load of 125 MW is transmitted from plant 1 to the load, there is a loss of 12.5 MW. Determine the generation schedule and the load demand if the cost of the received power is Rs 70/MWh. Assume that the incremental costs of the two plants are given by

$$\frac{dC_1}{dP_1} = 0.25P_1 + 40 \text{ Rs/MWh}; \quad \frac{dC_2}{dP_2} = 0.20P_2 + 50 \text{ Rs/MWh}$$



Solve the problem using (a) coordination equation (b) penalty factor method. (12.5)

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- Q7 (a) Explain about Plant layout and working for nuclear power plant. (6.5)
(b) Write advantages and factors selecting the nuclear power plant. (6)

UNIT-IV

- Q8 (a) Write in brief about Gas insulated and hybrid electrical power substation. (6.5)
(b) Describe typical layout & constructional details of pole mounted substation. (6)
- Q9 (a) Explain substation grounding, Indoor & outdoor substation. (6.5)
(b) Differentiate with advantage different bus bar arrangements. (6)

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