Paper Code: EE-703	**Roll No.**									

B.Tech
SEVENTH SEMESTER EXAMINATION, 2016-17
POWER STATION PRACTICE

[Time: 3hrs] [Max. Marks: 100]

Note: Attempt ***ALL*** questions. Assume suitable data, if required. All question carry equal marks.

1. Attempt any *two* parts of the following: - **(10x2=20)**

(a) A power plant comprising of steam and gas turbine plant is operating for a category of load; A huge load block is suddenly added, Mention the way the load added will be shared and more over which unit will respond quickly and why?

(b) What are different factor that decide the location and site selection of hydro-electric plants? Discuss the merits and demerits of hydro-electric plant.

(c) (A) Explain different types of fan used in thermal power plant and also explain (i) economizer (ii) BFP (iii) ESP (iv) cooling tower.

(B) Thermal power plant efficiency is low, why? Explain in detail.

2. Attempt any *two* parts of the following: - **(10x2=20)**

(a) What do you mean by nuclear power plant? Discuss different types of reactors.

(b) Discuss general layout of CANDU type reactor and gives advantages and disadvantages.

(c)Explain regeneration, intercooling and reaheating of gas turbine plant?

3. Attempt any *two* parts of the following: - **(10x2=20)**

(a) What are the causes and effect of poor power factor? Discuss methods of improve the power factor.

(b) Explain different types of bus-bar arrangement and gives of advantages.

(c) (i) A power station supplies the peak load of 50 MW ,40 MW, and 70 MW to three localities. the annual load factor is 0.5 p.u. ant the diversity factor of the load at the station is 1.55. Calculate the maximum demand on the station and average load.

(ii) What is the maximum value of a load which consume 500 KWH per day at a load factor of 0.4, if the consumer increases the load factor to 0.5 without increasing the maximum demand.

4. Attempt any *two* parts of the following: - **(10x2=20)**

(a) What do you mean by economic operation of power system? What are different characteristics of steam and hydro plants? Explain in detail.

(b) What do you mean by economic load scheduling? Explain economic load scheduling of thermal plants without consider of transmission losses.

(c) The incremental fuel cost (in same approximate unit) for a plant consisting of three generating units

IC:1= 18 + 0.3 P1
IC:2=28 + 0.4 P2
IC:3=30

Where p1 is the power in MW generated by unit for i=1,2 &3. Assume that all the three units are operating all time. Minimum and maximum loads on each units are 50 MW & 300 MW respectively. If plant is operating on economic load dispatch to supply the total power demand is 700 MW. Calculate power generated by each unit.

5. Attempt any *two* parts of the following: - **(10x2=20)**

(a) What do you mean by non-conventional energy sources? Explain role of privet sector in energy management.

(b) Discuss advantages and disadvantages of MHD system and explain working principal of closed cycle MHD system.

(c) Discuss the Tidal energy generation & Ocean thermal energy generation.