Roll No. | | | | | | | | | | | | | Total No. of Pages : 01

Total No. of Questions : 08

M.Tech.(EE) (2013 Batch) (Sem.–2)

POWER SYSTEM OPERATION AND CONTROL

Subject Code : MTEE-201

Paper ID : [A2502]

Time : 3 Hrs. Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. **Attempt any FIVE questions out of EIGHT questions.**
2. **Each question carries TWENTY marks.**

1. What is Unit Commitment problem? Distinguish between Economic Dispatch and Unit Commitment problems.

2. Incremental cost of two units in a plant are:

$$IC_1 = 0.8P_1 + 160 \; Rs/MWh$$

$$IC_2 = 0.9P_2 + 120 \; Rs/MWh$$

where P_1 and P_2 are power output in MW. Assume that both the units are operating at all times. Total load varies from 50 to 250 MW and the minimum and maximum loads on each unit are 20 and 125 MW respectively. Find the incremental cost and optimal allocation of loads between the units for various total loads and furnish the results in a graphical form.

3. Explain what is Priority List Method.

4. Explain the dynamic programming method with a help of flowchart in unit commitment.

5. Discuss lambda iteration method using a suitable example.

6. Discuss optimal power flow formulation using linear programming methods.

7. Discuss the method of finding solution of short term hydro-thermal scheduling problems using Lambda- Gamma iteration method.

8. Discuss the various methods of calculating penality factors.