Code No : 9A02603/R09

III Year B.Tech. II Semester Regular & Supplementary Examinations

Set-1

April/May - 2013

POWER SYSTEM OPERATION & CONTROL

(Electrical & Electronics Engineering)

Time: 3 Hours | Max. Marks: 70

*Answer any **FIVE** Questions*

*All Questions carry **equal** marks*

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1 Explain the λ-iterative technique used to solve economic load dispatch problem.

2 Two units of a thermal station have each of the following cost characteristics $C = 5500 + 450\,P + 0.5\,P^2$ Rs/hr. Due to an instrumentation error the cost characteristics of first unit is in error by +2% and that of the second unit by –2% at the time of scheduling. Find the extra operating cost due to erroneous scheduling. Total load is 200 MW.

3 Describe the types of hydro thermal co-ordination.

4 Obtain the derivation of small signal transfer function of speed governing system.

5 Explain the operation of two major control loops ALFC and AVR with the help of a neat block diagram.

6 Draw the complete block diagram of the LFC of an isolated power system with proportional plus integral controller. Explain about each block.

7 (a) List out different reactive power compensation devices. Explain briefly about them.

(b) Explain why compensator is connected at load end than at generator end in a radial transmission line.

8 Explain the motivation for the restructuring power system.