

SS**Code: 9A02603**

B.Tech IV Year I Semester (R09) Regular & Supplementary Examinations December 2015

POWER SYSTEM OPERATION & CONTROL

(Electrical & Electronics Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

- 1 A power System consists of two, 125 MW units whose input cost data are represented by the equations :
 $C_1 = 0.04P_1^2 + 22P_1 + 800$ Rupees/hour
 $C_2 = 0.045P_2^2 + 15P_2 + 1000$ Rupees/hour
If the total received power $P_R = 200$ MW, determine the load sharing between units for most economic operation.
- 2 Briefly explain about the exact co-ordination equation and derive the penalty factor.
- 3 Explain the solution method of long-term hydro thermal scheduling by discretization principle.
- 4 Draw the schematic diagram of a speed-governing system and explain the function of its components.
- 5 Discuss the merits of proportional plus integral load frequency control of a system with neat sketch.
- 6 Explain the considerations in selection of frequency bias parameters.
- 7 (a) Distinguish between capacitive and inductive compensations
(b) Distinguish Shunt and Series compensations
- 8 (a) Explain the characteristics of wholesale electricity market
(b) Briefly explain about sequential and simultaneous markets
