

IV B.Tech I Semester Supplementary Examinations, November 2005
POWER SYSTEM OPERATION & CONTROL
(Electrical & Electronic Engineering)

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. Explain the problem of scheduling hydro thermal power plants. What are the constraints in the problem? [16]
2. (a) Describe the need for co-ordination of different power stations.
(b) What are B_{mn} coefficients and derive them. [8+8]
3. Using dynamic programming method, how do you find the most economical combination of the units to meet a particular load demand? [16]
4. Discuss the computational procedure for the gradient method to obtain optimal power flow solution without inequality constraints. [16]
5. (a) Write notes on
 - i. Control area concept.
 - ii. Area control error.(b) Explain proportional plus integral control for load frequency control for a single area system. [4+4+8]
6. Draw the block diagram for two-area load frequency control with integral controller blocks, and explain each block. [16]
7. A long transmission line has the constants $A = 0.97 \angle 2^\circ$, $B = 84 \angle 75^\circ$ find the additional reactive power requirement at the receiving end to meet a load of 63 MW at 0.8 p.f. lagging, when both the sending end and receiving end voltages are to be maintained at 132 kV. [16]
8. A load is supplied through a 275 kV link of total reactance 50Ω from an infinite busbar at 275 kV. Plot the receiving -end voltage against power graph for a constant load power factor of 0.95 lagging. The system resistance may be neglected. [16]
