

M.Tech. 1st Semester
Examination, December-2018
ELECTRICAL POWER SYSTEMS
Paper- MTEPS-103
Power System Operation and Control

Time allowed : 3 hours [Maximum marks : 100]

Note: Attempt any five questions.

1. (a) Describe the thermal and hydal constrains in unit commitment. 10
- (b) Write the algorithm for priority-list scheme around a simple shut-down rule. 10
2. (a) Describe the unit commitment problem solution by dynamic programming approach. 10
- (b) Explain with a flowchart of dynamic programming solution in unit commitment problem. 10
3. Explain the complete block diagram representation of load frequency control of an isolated power system and its steady state analysis. 20
4. (a) Discuss proportional plus integral control of single area and its block diagram representation. 10
- (b) Explain the load frequency control and economic dispatch control of single area system. 10
5. (a) Explain load frequency control problem in a Multi-area power system. 10

- (b) Derive an expression for steady-state change of frequency and tie-line power transfer of a two-area power system. 10
6. (a) What are the features of the dynamic response of a two-area system for step load disturbances? 10
- (b) Draw the block diagram of load frequency control in two-area control system and explain. 10
7. Write a short note on 20
 - (a) Hard limits and slack variables.
 - (b) Composite generation production cost function.
8. (a) Discuss transmission losses in transaction evaluation. 10
- (b) Explain interchange evaluation and power pool economy interchange. 10

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