

23288

M.Tech. 2nd Semester (Electrical Power Systems)

Examination, May-2017

REAL TIME CONTROL OF POWER SYSTEM

Paper-MTEPS-203

Time allowed : 3 hours]

[Maximum marks : 100

Note : Attempt five questions in total. All questions carry equal marks.

1. (a) What is state estimation ? Briefly explain sequential and non-sequential state estimation methods to process measurements ?
(b) Distinguish between all the types of state estimations.
2. (a) What are bad data in state estimation ? Explain bad data detection technique.
(b) Briefly explain identification and elimination methods of bad data in state estimation.
3. (a) Derive contingency analysis for generator and line outage by iterative linear power flow method.
(b) Short note on security concept and network sensitivity methods.

23288-P-2-Q-8 (17)

[P.T.O.]

4. (a) What is real time data used in computer control?
Explain its needs.
- (b) Explain in detail the computer control of power system.
5. (a) Define SCADA and explain energy control centers in detail.
- (b) What are SCADA implementation considerations ?
Explain software requirement for implementing functions.
6. (a) Explain in detail voltage stability and voltage security.
- (b) Write a note on voltage collapse.
7. (a) Discuss following in brief :
 - (i) Voltage stability in mature power systems
 - (ii) Long term voltage stability.
- (b) Explain voltage stability analysis 'P-V' curves and 'Q-V' curves.
8. (a) Give basic concept and definition of AI and ANN in power system.
- (b) Explain short term load forecasting and fault diagnosis.