

Code: EE8T3B

IV B.Tech - II Semester - Regular Examinations - March 2018

**REAL TIME CONTROL OF POWER SYSTEMS
(ELECTRICAL & ELECTRONICS ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11 x 2 = 22 M

1.

- a) List the different types of state estimations.
- b) Define normalized measurement residual.
- c) Define hypothesis testing.
- d) What is a cascading outage?
- e) What are the factors affecting power system security?
- f) List two important features of SCADA system.
- g) What is the role of energy control centre?
- h) Define voltage stability.
- i) Mention the significance of PV and QV curves.
- j) Differentiate between short and long term load forecasting.
- k) Mention the applications of PMU in a power system.

PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

- 2.a) Explain the process of WLS state estimation with an example. 8 M
- b) Discuss about bad data identification and suppression. 8 M
- 3.a) Discuss about contingency selection. 8 M
- b) Explain about iterative linear power flow method for contingency analysis. 8 M
- 4.a) Discuss about implementation considerations for a SCADA system. 8 M
- b) Explain in detail about the four operating states of a power system. 8 M
- 5.a) Explain how voltage instability leads to voltage collapse in a power system. 8 M
- b) Explain the significance of PV and QV curves in voltage stability analysis. 8 M
- 6.a) Discuss the algorithms for load flow using ANN. 8 M
- b) Explain about short term load forecasting using ANN. 8 M