

Code: EE8T4A

IV B.Tech - II Semester – Regular Examinations – April 2016

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

Duration: 3 hours

Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. a) What are the properties of weighted Least Square Estimation method? 7 M
- b) Explain the need of state estimation in power systems. 7 M
2. a) What is hypothesis testing and chi-square distribution? 7 M
- b) Explain about the detection and identification of bad data measurements. 7 M
3. a) Discuss the importance of power system security and contingences analysis. 7 M
- b) Draw the flow chart of iterative linear power flow method for contingences analysis. 7 M

4. a) What are the major functions that are carried out in an operational control center? 7 M
- b) Explain briefly how the system states are continuously monitored and controlled. 7 M
5. a) Explain the main activities of energy control centers. 7 M
- b) Explain the software requirements in SCADA. 7 M
6. a) What do you mean by stability margin? How would you develop the criteria of Steady state static and transient reactive power stability? 7 M
- b) Derive the relation between voltage stability and rotor angle stability. 7 M
7. a) Explain continuation power flow analysis for voltage stability. 7 M
- b) Explain voltage stability indices. 7 M
8. a) Write an algorithm for load flows using ANN technique in power systems. 7 M
- b) Explain the fault diagnosis and state estimation using AI technique. 7 M