

Code: EEPC2T3

I M.Tech - II Semester-Regular Examinations – September 2015

**REAL TIME CONTROL OF POWER SYSTEMS
(POWER SYSTEM CONTROL AND AUTOMATION)**

Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. Define state estimation and also explain the state estimation solution algorithm. 14 M

2. Explain about the detection and identification of bad data measurements. 14 M

3. a) Explain factors affecting power system security. 7 M

b) Explain the AC power flow security analysis with contingency case selection. 7 M

4. Explain the structure of real time computer control system. 14 M

5. a) Explain the main activities of energy control centres. 7 M

b) Explain the software requirements in SCADA. 7 M

6. How and why does voltage instability occur in power system? What are the key factors contributing to instability? What are the voltages–weak areas? What measures are most effective in improving voltage stability? 14 M
7. a) Explain continuation power flow analysis for voltage stability. 7 M
- b) Explain voltage stability static indices. 7 M
8. Discuss about the Phasor Measurement Unit (PMU) in real time environment of power system operation and control. 14 M