

Code: EEPC2T3

I M.Tech-II Semester–Regular/Supplementary Examinations – July 2017

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

Duration: 3 hours

Max Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. a) Explain the need of state estimation in power system. 7 M

b) Explain the weighted least square state estimation method with the help of an example. 7 M

2. a) Explain about the network observability and pseudo measurements in bad data Collection. 7 M

b) Discuss the bad data processing algorithm. 7 M

3. a) Explain how contingency analysis is done using sensitivity factors and also draw flow chart? 7 M

b) Explain factors affecting power system security. 7 M

4. a) Describe the operating states of power systems. 7 M

- b) What are the major functions that are carried out in an operational control centre? 7 M
5. a) Explain the structure of control room in SCADA system. 7 M
- b) Explain the main activities of energy control centres. 7 M
6. a) Briefly discuss the factors affecting voltage stability. 7 M
- b) How does the bifurcation analysis helps in determining the voltage stability limit? 7 M
7. a) Develop the concept of voltage stability using the method of optimal power flow. 7 M
- b) Discuss the voltage stability in mature power systems. 7 M
8. What is phasor measurement unit? Explain its role in real time environment. 14 M