

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

**POWER SYSTEM DYNAMICS & STABILITY
(POWER SYSTEM CONTROL AND AUTOMATION)**

Duration: 3 hours

Max Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. Explain the following:
 - a) Importance of state space approach for modelling a synchronous machine. 7 M
 - b) Modelling of various loads in power system networks. 7 M

2. Explain the following:
 - a) Steady state stability 5 M
 - b) Dynamic Stability 5 M
 - c) Transient Stability 4 M

3. Discuss Synchronous machine stability by Eigen value approach. 14 M

4. Derive swing equation for single machine connected to infinite bus system. 14 M

5. Explain the concept of the multi machine stability in detail. 14 M
6. Explain the effect of saturation, saliency and automatic voltage regulators on stability. 14 M
7. Explain the functioning of exciters with indirect acting rheostatic type voltage regulator using suitable diagrams. 14 M
8. Write short notes on the following
- a) Rotating Amplifier 5 M
 - b) Static excitation scheme 5 M
 - c) Brushless excitation system 4 M