PVP 12

Code: **EEPC2T1**

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

POWER SYSTEM DYNAMICS & STABILITY

(POWER SYSTEM CONTROL AND AUTOMATION)

Duration: 3 hours Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. Derive the state space model of a synchronous machine? 14 M

2. Explain the 14 M
   i) Steady state stability limit
   ii) Dynamic stability limit
   iii) Transient stability limit.

3. Explain the state space representation of synchronous machine connected to infinite bus and explain the time response. 14 M

4. Derive swing equation for a single machine connected to infinite bus system. State the assumptions if any and state the usefulness of their equation. Damping is not to be neglected. State the reasons for non linearity of this equation. 14 M

5. Explain the multi machine stability in detail. 14 M

6. Briefly explain the 14 M
   i) effect of saturation and
   ii) saliency & automatic voltage regulators on stability.

7. Explain the Rotating self-excited exciter with direct acting Rheostatic type and voltage Regulator. 14 M

8. Write short notes on 14 M
   i) Rotating main exciter
   ii) Rotating Amplifier and static voltage Regulator.