

I M.Tech - II Semester - Regular Examinations - AUGUST 2018

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

Duration: 3 hours

Max Marks: 60

Answer the following questions.

1. Derive from fundamentals the stator and rotor voltage equations of synchronous machine from 'abc' frame of reference to 'dqo' reference frame. 15 M
(OR)
2. Derive per unit quantities for stator based and rotor based quantities. Write the comments on it. 15 M
3. Obtain the classical model of one machine connected to an infinity bus. 15 M
(OR)
4. Illustrate the small signal stability analysis of a multi-machine connected to infinite bus system. 15 M

5. Derive necessary equations for finding the transient stability of power system and also discuss the solution of the equations. 15 M

(OR)

6. List out the factors influencing transient stability. 15 M

7. Outline the characteristics of generator, transmission system and load characteristics and their importance in voltage stability analysis. 15 M

(OR)

8. Draw the PV, QV and PQ curves and write their use in voltage stability analysis of the system. 15 M