R09

Code No: D0701

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD M.Tech II - Semester Examinations, March/April 2011 POWER SYSTEM CONTROL AND STABILITY (ELECTRICAL POWER SYSTEMS)

Time: 3hours Max. Marks: 60 Answer any five questions All questions carry equal marks 1. a) Explain the analysis of transient stability. b) What is the effect of excitation system on transient stability? [12] 2. What are the different modes of oscillations of unregulated synchronous machines obtain relevant equations? [12] 3. Derive the stator voltage equations and rotor voltage equations from the abc frame of reference to dgo reference frame. [12] 4. What is the objective of power system stabilizer and explain how it can improve the stability of the system. [12] 5. Explain the dynamics of a synchronous generator when connected to an infinite bus. [12] 6. a) Explain state space description of the excitation system. b) Draw the block diagram of static excitation system & explain its operation. [12] 7. a) Explain the factors affecting voltage stability & voltage collapse. b) Explain any one method to assess voltage stability of the system. [12] 8. Write short notes on a) Multimachine system b) Dynamic stability by Routh's criterion c) Variable gradient method stability analysis. [12]
