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
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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 dqo 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]

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