

Exam.Code:1018
Sub. Code: 7476 ✓

2054

M.E. Electrical Engineering (Power Systems)
Second Semester
EE-8201: Power Systems Dynamics and Stability ✓

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt any five questions. All questions carry equal marks.

x-x-x

- I. Explain complete classification of power system stability.
- II. Discuss the effect of excitation system on small signal stability
- III. A 60 Hz, 4 pole turbo-generator rated 100MVA, 13.8 KV has inertia constant of 10 MJ/MVA.
 - (a) Find stored energy in the rotor at synchronous speed.
 - (b) If the input to the generator is suddenly raised to 60 MW for an electrical load of 50 MW, find rotor acceleration.
 - (c) If the rotor acceleration calculated in part (b) is maintained for 12 cycles, find the change in torque angle and rotor speed in rpm at the end of this period.
 - (d) Another generator 150 MVA, having inertia constant 4 MJ/MVA is put in parallel with above generator. Find the inertia constant for the equivalent generator on a base 50 MVA.
- IV. Explain the Euler's method used for the analysis of transient stability.
- V. Apply equal area criterion to study transient stability for a fault that is occurring at the middle of one of the line of a double circuit line feeding infinite bus.
- VI. Write detailed technical note on the small signal stability of multi machine system.
- VII. What are the salient disturbances that causes voltage instability.
- VIII. Explain the voltage collapse phenomenon with the help of P-V curves.

x-x-x