Roll No .....

MEPS/MTPA/MEHP - 102

M.E./M. Tech., I Semester

Examination, June 2014

Power System Dynamic Analysis And Control

Time : Three Hours

Max. Marks : 70

Note: i) Solve any five questions.
ii) Assume suitable data if necessary.

1. a) Give the classification of power system stability and with suitable diagram show their time frame.
   b) Discuss the necessary measures to prevent voltage collapse.

2. a) Discuss the relation between voltage and real power at receiving bus. Also discuss voltage stability margin.
   b) Discuss modeling of power system elements that have significant impact on voltage stability.

3. a) Describe the point-by-point method for analysis transient stability of power system.
   b) Explain the classical model of the synchronous machine for stability studies. What are the shortcoming of the classical model?

4. a) Explain Equal area criteria for determination of transient stability. Also discuss its limitations.

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   b) Explain the various test conducted on synchronous machine to obtain the machine data.

5. a) Explain synchronous machine analysis connected to external network.
   b) Give the steady state performance analysis of loaded synchronous generator.

6. a) Explain the state space description of the excitation system.
   b) Develop the model for mechanical-hydraulic speed governing system.

7. a) Discuss the polynomial and exponential static load representation.
   b) Discuss the field implementation and operating experience of power system stabilizers.

8. Write short notes on any three:
   i) Automatic voltage regulators
   ii) Voltage security
   iii) Steady state stability
   iv) Modeling of SVC's
   v) Basic structure and tuning of power system stabilizers

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