NR/R09

Code No: A4905/C4906, C6406

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.Tech I - Semester Examinations, March/April-2011

VOLTAGE STABILITY

(COMMON TO ELECTRICAL POWER ENGINEERING AND POWER ENGINEERING & ENERGY SYSTEMS)

Time: 3hours **Max. Marks: 60**

Answer any five questions

All questions carry equal marks

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1. a) Define the following:
   i) Voltage Stability ii) Voltage Collapse
   iii) Voltage Security.
   b) What are the factors affecting voltage collapse and insecurity. Explain the voltage stability relation with these factors. [12]

2. How does the voltage collapse phenomenon occurs with variation of Q and explain with the help of Q-V curve? [12]

3. Analyse the voltage stability of a SMIB system. [12]

4. Explain the characteristics of following loads:
   i) Synchronous motor loads.
   ii) Induction motor loads.
   iii) Converter loads. [12]

5. Explain the effect of series compensation on voltage instability? What are the devices used for series compensation. [12]

6. Describe the method of shunt compensation? Explain how this can be achieved with devices available. [12]

7. Discuss the stability margins with respect to uncompensated system. [12]

8. Describe the methods of improve voltage stability. [12]

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