**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**
**- - -**

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]

*****