

Roll No .....

**EE/EX-7003 (CBGS)****B.E. VII Semester**

Examination, November 2019

**Choice Based Grading System (CBGS)****Computer Application to Power System***Time : Three Hours**Maximum Marks : 70***Note:** i) Attempt any five questions.

ii) All questions carry equal marks.

iii) Assuming missing data suitably.

1. a) Write a brief note on line loadability and what do you understand by capability curves of alternator. 7
- b) Define Tree, Co-tree and Branch. Also explain with a simple example why Nodal analysis is preferred over Mesh analysis. 7
2. a) How do you control the Load bus voltage using reactive power control devices? 7
- b) Write short notes about the following: 7
  - i) SVC
  - ii) SVS
3. a) What do you understand by regulated shunt compensation? 7
- b) Distinguish between Series and Shunt compensation. 7

4. a) Describe the significance of generation shift and line outage distribution factors in sensitivity analysis of power system. 8
- b) Explain the sensitivity relating changes in reactive power for changes in P - V bus voltages. 6
5. Write short notes on:
  - a) Pre and Post contingency 5
  - b) Corrective load re-scheduling 5
  - c) Security level 4
6. a) Explain major function of Power system security and Enumerate power system static security levels. 10
- b) Describe Contingency analysis. 4
7. a) Derive the elements of Jacobian Matrix of a power system. 7
- b) Discuss the approach for Voltage stability analysis of a given system. <http://www.rgpvonline.com> 7
8. a) Explain what you mean by reactive compensation of load and discuss how it helps in maintaining voltage stability. 7
- b) What are P-V and V-Q curves? Discuss how these help in studying voltage stability of the system. 7

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