EX-702 (NGS) B.E. VII Semester

Examination, December 2013

Computer Applications to Power Systems

Time: Three Hours

Maximum Marks : 100 ***Minimum Pass Marks :35***

Note: Attempt any five questions in all.

1. a) Describe the procedure in steps for the formation of Z bus matrix. 10

b) Develop V model of an OLTC. 10

2. a) Explain necessary derivations capability curves of an alternator. 10

b) Why nodal method of analysis is preferred over mesh analysis in power system studies. 10

3. a) Define security in power system. Explain different levels of power system security.

b) Define the following: 10

i) Contingency analysis

ii) Contingency selection

iii) Contingency evaluation

4. a) Differentiate the following: 10

i) Series and shunt compensation

ii) Nominal **'7t'** and equivalent V model of transmission line.

b) What are the problems associated with the transfer of reactive pqwer over long distance. 10

5. Derive the following distribution factors for *n* bus system

a) GSDF 10

b) LODF 10

6. a) Develop sensitivity relating load bus voltage changes in terms of P.V. bus voltage changes. 10

b) Explain the application of sensitivities in power system 10

7. a) Define voltage stability 20

b) How will you apply P.V. curve for voltage stability assessment

c) Differentiate voltage stability and Angle stability.

8. Write down short notes on any three of the following: 20

i) L index

ii) Modal analysis for voltage stability

iii) Corrective rescheduling

iv) Security function

v) EMS