Roll No .....

MEPS-104

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

Examination, December 2015

Power Electronics Applications to Power System

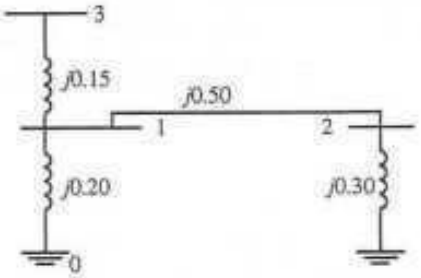
Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All parts of each question are to be attempted at one place.
iii) All questions carry equal marks.

1. a) Explain how do you form Y-bus by direct inspection with a suitable example.
   b) Explain transmission line model and loadability in detail.

2. a) Using the method of building algorithm find the bus impedance matrix for the network shown in Figure.



   b) Write down the algorithm for formulation of bus impedance matrix.

3. a) What is the significance of sensitivity analysis in power system stability analysis? Explain.
   b) Discuss security levels in power system with the help of flowchart.

4. a) Specify the following :
      i) Contingency selection
      ii) Contingency evolution
   b) What do you understand by pre contingency corrective rescheduling?

5. a) Distinguish the following :
      i) Voltage stability and rotor angle stability
      ii) Security, stability and reliability
   b) What is the significance of Jacobian participation factors?

6. a) Explain the configuration and operating characteristics of TCR and FC-TCR.
   b) With a neat schematic diagram, explain the various basic types of FACTS controllers in detail.

7. a) Derive the equivalent model of TCSC.
   b) Describe Thyristor Controlled Series Capacitor (TCSC). Write down the advantages and disadvantages.

8. Write short note :
   a) Proximity indicators
   b) Difficulties with reactive power transmission
   c) Shunt compensation
   d) Security constrained economic dispatch

******