Total No. of Questions : 8] [Total No. of Printed Pages : 2

MEPS–104

M. E. (First Semester) EXAMINATION, Dec., 2010

POWER ELECTRONICS APPLICATION TO POWER SYSTEMS

(MEPS – 104)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

Note : Attempt any *five* questions.

1. (a) Develop a model for OLTC. 10
   (b) Develop an algorithm for formation of bus impedance matrix. 10
2. (a) Enlist the problems associated with the transfer of reactive power over long transmission line. 10
   (b) Develop a model for long transmission line. 10
3. (a) Discuss security levels in power system with the help of flowchart. 10
   (b) Give an application of GSDF and LODF for each. 10
4. (a) Specify the following : 10
   (i) Contingency selection
   (ii) Contingency evolution
   (b) Explain security functions. What is precontingency corrective scheduling ? 10

5. (a) Distinguish the following : 10
   (i) Voltage stability and rotor angle stability
   (ii) Security, stability and reliability
   (b) Explain how P-V curve can be used as an indicator for assessing loadability margin. 10
6. (a) Define FACTS and give its applications in power system. 10
   (b) Discuss SVC and its application. 10
7. (a) Compare SVC and STATCOM. 10
   (b) Derive the equivalent model of TCSC. 10
8. (a) How will you solve power flow equations using N-R method ? 10
   (b) Write short notes on any *two* of the following :5 each
   (i) Capability curve of an alternator
   (ii) FDLF
   (iii) Shunt compensation