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

Roll No .....

MEPE - 203

M.E./M.Tech., II Semester

Examination, December 2015

Power Electronics Applications to Power Systems

Time : Three Hours

Maximum Marks : 70

Note: Attempt any five questions. All questions carry equal marks.

1. a) Why power system components model formation is necessary, justify your answer by developing an algorithm for formation of bus impedance matrix?
   b) What do you understand by load flow study?

2. a) What do you mean by regulated shunt compensation and also discuss about its applications?
   b) How, reactive power capability, of an alternator is calculated? Explain.

3. a) What are the different factors are involved in sensitivity analysis? Explain each of them briefly.
   b) What is pre-contingency corrective rescheduling? Discuss in detail.

4. a) Why power system security levels are necessary? Explain their types.
   b) What is voltage stability. Also explain the role of proximity indicators.

5. a) What do you understand by Jacobian participation factor, discuss its significance?
   b) What is P-V curve, also Explain its applications?

6. a) Explain about flexible ac transmission system.
   b) What is the role of FACTs Controllers, also explain the working principle of shunt compensators?

7. a) What are the different modes of operation of Thyristors Controlled Series Capacitor (TCSC)? Explain each of them.
   b) Put your focus on configuration and operating characteristics of TCR.

8. Write short notes on any two :
   a) SVC
   b) Capability curve of an alternator
   c) Transient-stability model of TCSC

******