



Reg. No. : .....

Name : .....

**First Semester M.Tech. Degree Examination, March 2014**  
**(2013 Scheme)**  
**ELECTRICAL ENGINEERING**  
**Stream: Power Control and Drives**  
**EDC1002 : Applications of Power Electronics in Power Systems**

Time : 3 Hours

Max. Marks : 60

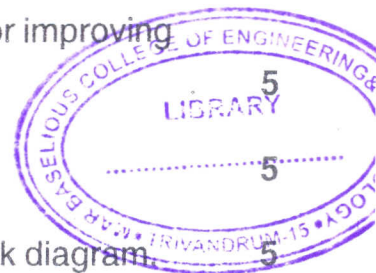
**Instruction : Answer any two questions from each Part.**

PART – I

1. a) Explain the concept of static series compensation and its effect on Power Oscillation damping. 5
- b) Explain the working principles of STATCON with relevant diagrams. 5
2. Discuss the effect of SVC and STATCOM on first swing stability, with the help of power angle diagram of a two machine system. 10
3. Explain the working of UPFC in terms of real and reactive power flow control with a suitable system. Give all relevant diagrams. 10

PART – II

4. a) What is 'conducted EMI' ? Explain the corrective measures for improving conducted EMI. 5
- b) Describe the propagation of harmonics in power system. 5
5. a) What is a harmonic Analyser ? Explain with its functional block diagram. 5
- b) Explain the harmonic mitigation techniques. How the data recorded in harmonic analyser is used for this purpose ? 5



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6. a) List various power quality issues. Explain in detail. 7
- b) What are the basic steps in power quality evaluation ? 3

PART – III

7. a) Explain IEEE standards 929-2000 for power transfer from inverter to grid. 5
- b) Give details of Islanding protection of grid connected PV system. 5
8. a) With the help of block diagrams, explain the working of a grid interactive inverter. 5
- b) Give details on protection against Islanding and reverse power flow in grid interactive system. 5
9. a) Give the importance of Distributed Generation (DG) in the deregulated power system environment. 5
- b) Discuss the optimal location of DG on distribution feeders. 5