

Code No: H4304/R13

M. Tech. II Semester Regular/ Supplementary Examinations, July-2016

CUSTOM POWER DEVICES

(Common to PE, P & ID, PE & ED, PE & D, EM & D and PE & PS)

Time: 3 Hours

Max. Marks: 60

Answer any FIVE Questions
All Questions Carry Equal Marks

1. a Discuss in detail about the implications of poor load power factor in a distribution system where a source is supplying an inductive load with a feeder. 08
- b Discuss the effects of voltage harmonics in an electrical distribution system. 04
2. List the different compensative types of custom power devices and also explain in detail about the load compensation using any one of the custom power device. 12
3. a List the different types of multilevel inverters also explain the role of sinusoidal pulse width modulation in multilevel inverter. 10
- b What is hybrid source transfer switch? 02
4. With a help of schematic diagram, explain the operation and characteristics of a FC-TCR type VAR compensator. 12
5. a Discuss the issues in limiting and switching operations of protective devices used in power systems. 08
- b Mention the advantages of static VAR compensators. 04
6. Explain in detail about the voltage regulation using DSTATCOM with relevant diagrams. 12
7. a Explain in detail about the process of protecting the load from harmonic voltages using UPQC. 08
- b Discuss the operation of a Solid state current limiter. 04
8. Draw and explain the schematic diagram, structure and control of a right shunt UPQC. 12
