

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – III • EXAMINATION – WINTER • 2014****Subject code: 734502****Date: 27-11-2014****Subject Name: EMC in Power Electronics****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is EMI? What are the sources of EMI? **07**
(b) Explain basic terms and conducted EMI references with reference to EMI measurement. **07**
- Q.2** (a) Describe Electromagnetic Disturbances by Character. **07**
(b) What are the effects of extreme condition of mismatched impedance on EMI filter? **07**
- OR**
- (b) Describe shielded transformers with necessary equivalent circuit. **07**
- Q.3** (a) Multistage EMI filter is better than one stage EMI filter. Give Reason? **07**
(b) Why common mode choke is better than solenoid coil in EMI filter? **07**
- OR**
- Q.3** (a) Draw equivalent circuit for determining the capacitive current of noise suppression and explain it with necessary equation. **07**
(b) Explain feed through capacitor and feed through filter. **07**
- Q.4** (a) Describe parallel injection method of worst-case insertion loss test method. **07**
(b) Explain basic circuit configuration of EMI filter circuit configurations. **07**
- OR**
- Q.4** (a) Why RC snubbers are used in power semiconductors? **07**
(b) Explain the noise suppression in relay systems. **07**
- Q.5** (a) Discuss inductive noise coupling mode of electromagnetic coupling. **07**
(b) Explain the difference between conductive noise coupling and electromagnetic coupling. **07**
- OR**
- Q.5** (a) Discuss the method for calculating energy content of transient disturbances. **07**
(b) What is the use of surge protection devices? **07**
