Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – III • EXAMINATION – SUMMER • 2013

Subject code: 734502 Date: 15-05-2013 **Subject Name: EMC in Power Electronics (Elective - IV)** Time: 10:30 am - 13:00 pm**Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. (a) Describe Electromagnetic Disturbances by Frequency Content. 07 0.1 **(b)** Describe spectrum analyzers. 07 (a) Describe Electromagnetic Disturbances by Transmission Mode. **07** 0.2 **(b)** Write a short note on measuring the interference voltage. 07 OR **(b)** Write a short note on measuring the interference current. 07 (a) Describe shielded transformers with necessary equivalent circuit. 07 Q.3(b) Draw equivalent circuit for determining the capacitive current of noise suppression and explain 07 it with necessary equation. OR Q.3 (a) Draw and explain basic circuit configuration of EMI filter circuit configurations. 07 **(b)** Draw and explain equivalent circuits of common mode choke coils. 07 (a) Describe worst-case insertion loss test method with necessary equations. 07 **Q.4 (b)** Write a short note on Damped EMI filter for low current ratings. **07** OR (a) Describe impulse voltage withstand test with necessary diagram. 07 **Q.4 (b)** Draw equivalent circuit for calculating conductive noise coupling with necessary equations. 07 (a) Explain circuit balancing method of reduction of electromagnetic coupling reduction. 0.5 07 **(b)** Explain wiring layout method to reduce EMI coupling. **07** OR Q.5 (a) Explain noise filter design method for voltage attenuation. 07 **(b)** Write a short note on surge protection devices. 07 ******