Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY ME - SEMESTER - III • EXAMINATION – SUMMER 2015

Subject Code: 734502 Date:02/05/2015 **Subject Name: EMC in Power Electronics** Time: 2:30 pm to 5:00 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** Classify the various electromagnetic disturbances and explain any one in 07 (a) details with suitable example. Define EMI and explain in details about the various sources of EMI. 07 (b) 0.2 List out various EMI measuring Instruments and explain any one in detail. **07** (a) Explain the EMI Measurement techniques for Consumer Appliances. **07** (b) OR Write a short note on spectrum analyzers. **07** (b) Explain HF Characteristics of Noise Filter Circuit Elements. 07 Q.3 (a) Discuss in detail about damped EMI filter for low current ratings. (b) 07 OR Q.3 Explain the capacitive current for noise suppression with necessary 07 (a) equations. (b) Draw and explain the equivalent circuit of shielded transformers. 07 0.4 (a) Explain the noise suppression in relay system. 07 Explain the significance of RC Snubbers used in power semiconductor. (b) **07** OR **Q.4** (a) Discuss the method for calculating energy content of transient disturbances. 07 (b) Describe in detail about surge protection devices. 07 Q.5 **07** Briefly explain the EMC tests as per IEC specifications. (a) Explain the electromagnetic coupling reduction methods. 07 (b) OR List out various EMI filter designs and explain the EMI filter design for **07** Q.5 insertion loss. Explain the Filter Design Method for Voltage Attenuation. 07 (b)
