Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER IV(NEW) - EXAMINATION- SUMMER- 2017

Subject Code: 2744502 **Date:03/05/2017**

Subject Name: Electromagnetic Compatibility in Power Electronics

Time: 02:30 pm to 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)**	Derive the equations of insertion loss of two port network in terms of Z parameters and ABCD parameters.	**07**
	(b)	Explain EMI from rectifier circuits.	**07**
Q.2	**(a)**	Describe parallel injection method of worst-case insertion loss test method.	**07**
	(b)	Write a short on measuring HF characteristics of EMI filter elements.	**07**
		OR	
	(b)	Explain impulse voltage withstand test with necessary diagram.	**07**
Q.3	**(a)**	Describe in detail the noise suppression in relay system.	**07**
	(b)	Draw and explain equivalent circuits of common mode choke coils.	**07**
		OR	
Q.3	**(a)**	Explain the application of RC snubbers to power semiconductors.	**07**
	(b)	Discuss inductive noise coupling mode of electromagnetic coupling.	**07**
Q.4	**(a)**	Explain any one electromagnetic disturbance in details with suitable example.	**07**
	(b)	Write a short note on measuring the interference voltage.	**07**
		OR	
Q.4	**(a)**	Why EMC test is required? Discuss the EMC tests as per IEC specifications.	**07**
	(b)	Explain wiring layout method to reduce EMI coupling.	**07**
Q.5	**(a)**	Explain in detail about spectrum analyzers.	**07**
	(b)	What are the effects of extreme condition of mismatched impedance on EMI filter?	**07**
		OR	
Q.5	**(a)**	Briefly explain the surge protection devices.	**07**
	(b)	Explain Laplace transform root calculation method.	**07**

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