Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER III (OLD) – EXAMINATION – WINTER-2016

Subject Code: 734502 **Date:27/10/2016**

Subject Name: EMC 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)**	Explain the classification of disturbances by transmission mode.	**07**
	(b)	Explain the classification of disturbances by frequency.	**07**
Q.2	**(a)**	Explain basic terms and conducted EMI references with reference to EMI measurement.	**07**
	(b)	Write a short note on measuring the interference current.	**07**
		OR	
	(b)	Write a short note on measuring the interference voltage.	**07**
Q.3	**(a)**	Draw and explain basic circuit configuration of EMI filter.	**07**
	(b)	Write a short note on Damped EMI filter for low current ratings.	**07**
		OR	
Q.3	**(a)**	Derive the equations of insertion loss of two port network in terms of Z parameters and ABCD parameters.	**07**
	(b)	Explain Laplace transform root calculation method.	**07**
Q.4	**(a)**	Write a note on EMI from rectifier circuits.	**07**
	(b)	Explain the filter design method for voltage attenuation.	**07**
		OR	
Q.4	**(a)**	Write a note on EMI from semiconductor.	**07**
	(b)	Explain the noise suppression in relay systems.	**07**
Q.5	**(a)**	Explain HF characteristics of noise filter circuit elements.	**07**
	(b)	Briefly explain the EMC tests as per IEC specifications.	**07**
		OR	
Q.5	**(a)**	Describe in detail about surge protection devices	**07**
	(b)	Draw equivalent circuit for determining the capacitive current of noise suppression and explain it with necessary equation.	**07**

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