

Code: 19EC4801D

IV B.Tech - II Semester – Regular Examinations – MAY 2023

**EMI AND EMC TECHNIQUES
(ELECTRONICS & COMMUNICATION ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.

2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.

3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.

4. All parts of Question paper must be answered in one place.

BL – Blooms Level

CO – Course Outcome

PART – A

		BL	CO
1. a)	List out the types of emission.	L2	CO1
1. b)	Define electromagnetic compatibility and Electromagnetic interference.	L1	CO2
1. c)	What are the benefits of good EMC design?	L1	CO3
1. d)	List out the EMI coupling methods.	L2	CO3
1. e)	How opto-isolator is used to control EMI?	L2	CO4

PART – B

		BL	CO	Max. Marks	
UNIT-I					
2	a)	List out the sources of EMI. Explain about any one of these types.	L2	CO2	6 M
	b)	Explain biological effects due to EMI.	L2	CO1	6 M
OR					

3	a)	Explain Frequency spectrum conservation in i) Transmitters & Receivers ii) Telecommunications	L2	CO2	8 M
	b)	Discuss briefly about EMI & EMC.	L2	CO1	4 M
UNIT-II					
4	a)	Analyze the types of noise and interference experienced by electronic systems.	L4	CO2	6 M
	b)	Explain the concept of transients in power supply lines.	L2	CO2	6 M
OR					
5	a)	Analyze the non-linearities in EMI circuits.	L4	CO2	6 M
	b)	Compare the measurement techniques of open area test site, indoor-test site and conducted interference.	L2	CO2	6 M
UNIT-III					
6	a)	Explain in detail about Anechoic chambers used for the measurements of RE & RS.	L4	CO3	6 M
	b)	Explain the concept of immunity to conducted EMI detectors.	L2	CO3	6 M
OR					
7	a)	Explain the characterization of conduction currents and voltages in common mode and differential mode interferences.	L2	CO3	6 M

	b)	Explain designing and working principle of Reverberating chamber.	L4	CO3	6 M
UNIT-IV					
8	a)	Analyze & explain the function of single rod electrode technique in grounding for EMI elimination.	L4	CO3	6 M
	b)	Explain the need of shielding and bonding in EMI/EMC.	L2	CO3	6 M
OR					
9	a)	Describe EMI control techniques.	L2	CO3	6 M
	b)	Explain shielding effectiveness in EMC.	L4	CO3	6 M
UNIT-V					
10	a)	Explain the need for suppression of EMI in cables.	L2	CO4	6 M
	b)	Illustrate the types of EMC connectors and explain.	L3	CO4	6 M
OR					
11	a)	Illustrate the use of isolation transformers.	L3	CO4	6 M
	b)	Explain the functioning of EMC gaskets.	L2	CO4	6 M