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Question Paper Code	12642
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M.E. / M.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Second Semester

M.E. - Communication Systems

20PCOPC203 - ELECTROMAGNETIC INTERFERENCE AND COMPATIBILITY

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

	Marks	K- Level	CO
1. Define Radiated Susceptibility.	2	K1	CO1
2. List the three criteria to be satisfied by any system to become electro magnetically compatible with its environment.	2	K1	CO1
3. How to minimize the effects of radiated coupling?	2	K2	CO2
4. Infer how power mains interference can be avoided.	2	K2	CO2
5. List the reasons for shielding at PCB level.	2	K1	CO4
6. Define Mold In Place.	2	K1	CO4
7. Define the term “spectrum conservation”.	2	K1	CO5
8. Define Class A devices with reference to FCC.	2	K1	CO5
9. Examine the functions of a feed through capacitor.	2	K2	CO6
10. Define Antenna Factor.	2	K1	CO6

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) i) Illustrate Intra system and Inter System EMI with examples.	7	K2	CO1
ii) Explain the concept of ESD with waveform and equivalent circuit.	6	K2	CO1
OR			
b) i) Explain EMC testing categories in detail.	7	K2	CO1
ii) Summarize the effects of radiation in human body.	6	K2	CO1
12. a) Examine in detail about inductive coupling with necessary equations and diagrams.	13	K2	CO2
OR			
b) Explain the various EMI coupling modes with Common Mode and Differential Mode current measurement with neat diagrams.	13	K2	CO2

13. a) Illustrate how shielding is done in PCB and also list the reasons for PCB level shielding. 13 K2 CO4

OR

- b) Summarize the grounding techniques adopted in PCB for mixed signal systems and large systems. 13 K2 CO4

14. a) Interpret the need for EMI standards. Explain the needs for civilian and military standards. 13 K2 CO5

OR

- b) Explain in detail the specifications for
(i) BSI
(ii) CENELEC. 13 K2 CO5

15. a) Give a detailed notes on anechoic chamber used for EMI measurement and explain the procedure for RE and RS measurement. 13 K2 CO6

OR

- b) With a neat diagram, explain the super-heterodyne spectrum analyzer. 13 K2 CO6

PART - C (1 × 15 = 15 Marks)

16. a) Explain shielding theory and shielding effectiveness based on the types of shield. 15 K2 CO3

OR

- b) Define filter. With neat diagram, explain in different types of filters in detail. 15 K2 CO3