Q. Code: 517334

Reg. No. | | | | | | | | | |

M.E. / M.TECH. DEGREE EXAMINATIONS, MAY 2019

Second Semester

CU18008- ELECTROMAGNETIC INTERFERENCE AND COMPATIBILITY

(*Communication Systems*)

(Regulation 2018)

Time: Three Hours **Maximum : 100 Marks**

Answer **ALL** questions

PART A - (10 X 2 = 20 Marks)

1. What is meant by electromagnetic compatibility?
2. Define ESD.
3. Define cross talk with reference to EMI/EMC design issues.
4. What is mean by ground loop coupling?
5. What does 'Chemical Salting' mean?
6. Define shielding effectiveness. List any four shielding materials.
7. Define : PCB trace impedance with respect to EMI.
8. What is Zoning?
9. Expand the terms CISPR, FCC.
10. Define the term LISN.

PART B - (5 X16 = 80 Marks)

11. (a) (i) Discriminate time domain and frequency domain EMI. **(6)**

(ii) Why is EMI significant in system design? What are the sources and victims of EMI? **(10)**

(OR)

(b) (i) Discuss how lightning discharges affect the transmission line communication. **(8)**

(ii) Explain about the transients, transient effects and how to minimize the transient effects? **(8)**

12. (a) (i) Describe the differences between radiated DM and CM coupling with suitable example. **(10)**

(ii) With neat diagram explain near field coupling. **(6)**

(OR)

(b) (i) Explain various remedial activities for coupling in circuits. **(8)**

(ii) Explain how power supply main affects the system. **(8)**

13. (a) Filters may be designed with two different types of components. What are they? Discuss all the techniques for designing filter. **(16)**

(OR)

(b) What ate the factors influencing the EMI performances of the bonding? How can bonding be made? . **(16)**

14. (a) (i) Discuss how component selection and mounting control EMI? **(8)**

(ii) Why digital circuits are so sensitive in PCBs. Explain. **(8)**

(OR)

(b) (i) How do you control the impedance value while designing the PCB? Explain. **(8)**

(ii) Discuss how electromagnetic compatibility is achieved while PCB is prepared for industry applications. **(8)**

15. (a) (i) What is the need for EMI standards? Explain. **(8)**

(ii) What is TEM cell? Explain in detail with neat diagram. **(8)**

(OR)

(b) Explain briefly about the measurements using an Anechoic chamber. **(16)**