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M.E. / M.TECH. DEGREE EXAMINATIONS, MAY/JUNE 2017
SECOND SEMESTER

COMMUNICATION SYSTEMS

CU16203 – ELECTROMAGNETIC INTERFERENCE AND COMPATIBILITY

(Regulation 2016)

Q. Code: 414974

Time: Three Hours

Maximum : 100 Marks

Answer **ALL** questions

PART A - (10 X 2 = 20 Marks)

1. Define ESD.
2. Write the four aspects of EMC.
3. What is meant by ground loop coupling?
4. What do you understand about near field cable to cable coupling?
5. What are the properties of shielding?
6. Mention the need of EMI gaskets.
7. List some properties to reduce cross talk.
8. Differentiate military and civilian standard.
9. Define LISN.
10. What is spectrum analyzer?

PART B - (5 X16 = 80 Marks)

11. (a) Discuss how lightning discharges affect the transmission line **(16)** communication. Explain the transient effects and how to minimize the transient effects.

(OR)

- (b) (i) How are the various sources of EMI kept under control and **(8)** measured? What are the various parameters of measurement?

- (ii) Explain the conducted EMI and radiated EMI. (8)
12. (a) (i) With a neat diagram describe ground loop coupling. (8)
(ii) Explain how power supply main affects the system. (8)
- (OR)**
- (b) What is radiated differential mode coupling? In what way this is different from the radiated common mode coupling. (16)
13. (a) (i) Illustrates how the effectiveness of shielding is obtained in SMPS. (8)
(ii) Explain the various grounding techniques used in electronic circuits. (8)
- (OR)**
- (b) (i) Differentiate between single and double shields .Briefly explain it. (8)
(ii) How does cable routing controls EMI. (8)
14. (a) (i) Discuss about the various factors to be considered for EMC design of PCB. (8)
(ii) Explain the importance of PCB design. (8)
- (OR)**
- (b) Discuss briefly on control devices of cross talk. (16)
15. (a) Explain the following:
(i) MIL standard 461E. (5)
(ii) FCC regulations. (5)
(iii) EFT test bed. (6)
- (OR)**
- (b) What is TEM cell? Explain in detail with neat diagram. (16)