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Question Paper Code : 71711

05/06/2017 AN

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Seventh Semester

Electronics and Communication Engineering

EC 6011 — ELECTRO MAGNETIC INTERFERENCE AND COMPATIBILITY

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Why EMI is a vital problem?
2. List the testing strategies in EMC.
3. What is transient coupling?
4. Define LISN.
5. Formulate the shielding effectiveness of E and H fields.
6. What is meant by 'bulging' capacitor?
7. Analyze the key for Conducted Emission (CE) EMC standards.
8. Interpret the need for EMI standards.
9. Illustrate the significance of narrow band testing.
10. Give the list of antenna used for microwave frequencies.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Distinguish between the features of conducted EMI and radiated EMI.

(ii) Explain the different sources of EMI in detail. Give examples.

Or

(b) Discriminate time domain and frequency domain EMI. Why does analysis is made in frequency approach analysis, design and location of high voltage equipments?

12. (a) (i) Describe the cable related emissions and coupling briefly.

(ii) Demonstate the common impedance ground couplings with examples.

Or

(b) (i) Explain how common mains supply acts as a frequent source of conducted interference.

(ii) Illustrate the electromagnetic impact of cable coupling in a system design.

13. (a) (i) How does an isolation transformer control EMI? Explain shielding and filtering methods of controlling EMI.

(ii) Explain various methods of grounding with examples.

Or

(b) (i) How does cable routing control EMI? How is signal control achieved?

(ii) Describe the shielding effectiveness of both solid and non-solid materials including multiple soil shields and thin film shading.

14. (a) Summarize FCC and CISPR Conducted Emission and Radiated Emission standards.

Or

(b) Write short notes on

(i) BSI

(ii) CENELEC.

15. (a) Describe about the open area test site measurements. What are its limiatations? Outline the characteristics of open area test site.

Or

(b) (i) Formulate the various EMI Test instruments.

(ii) Develop a test bed for EFT.

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