B. Tech.
(SEM. VIII) EXAMINATION. 2006-07
ELECTROMAGNETIC INTERFERENCE &
ELECTROMAGNETIC COMPATIBILITY

Time : 3 Hours] [Total Marks : 100

Note : Attempt all questions. All questions carry equal marks.

1  Attempt any four parts of the following : \(5 \times 4 = 20\)
   (a) How many types are of EMI? Enlist and explain each of them.
   (b) Describe natural sources of EMI.
   (c) How does opto.coupler work as grounding of interference? Explain.
   (d) Classify surges in a power supply. Explain the effect of surges in the power supply.
   (e) How high frequency and low frequency interferences are avoided? Explain.
   (f) How electrostatic discharge is generated in a human body? Explain.

2  Attempt any four parts of the following : \(5 \times 4 = 20\)
   (a) What is shield? How effective shield is for EMI? Explain.

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(b) Discuss Transverse Electromagnetic Cell. Discuss also the salient features of this.
(c) Describe absorption and reflection loss in shields.
(d) Discuss the trends in modern shielding cells.
(e) Compare coaxial cable, twisted cable and ribbon cables.
(f) Discuss one of the system grounding for EMC technique.

3 Attempt any two of the following: 10x2=20
(a) Discuss various EMI filters for mains noise.
(b) Discuss how passive components are chosen for EMC in detail.
(c) Discuss how are various components and modules of an assembly bonded together with introduction of its technique in brief.

4 Attempt any two of the following: 10x2=20
(a) Discuss in detail the EMI standards for households.
(b) What are various measurement techniques for EMI? Enlist all and discuss in detail one of them.
(c) What do you understand by EMI hardening for Transmitters? Discuss in detail with remedies.

5 Write short notes on any two of the following: 10x2=20
(a) Conductive gaskets
(b) Magnetic and ground coupling in cables
(c) EMI measurement technology.

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