

**IV B.Tech. I Semester Regular Examinations, November -2005
ELECTRO MAGNETIC INTEREFRENCE & COMPATIBILITY
TECHNIQUES**

(Bio-Medical Engineering)

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. (a) Discuss about various sources of Electro magnetic Interference. [8]
(b) Differentiate between Inter system and Intra system EMI. [8]
2. (a) With neat diagrams disucss about the receiver models of EMI prediction. [8]
(b) What are the different types of Emissions explain in detail. [8]
3. (a) With neat diagrams, differentiate between Amplitude culling and frequency culling. [8]
(b) Explain about detail prediction and performance prediction of various Emis- sions. [8]
4. (a) Discuss in detail about the antenna models for EMI prediction. [8]
(b) What are the considerations for Antenna EMI prediction. [8]
5. (a) Discuss in detail about the propagation models for EMI prediction. [8]
(b) What are the considerations of propagation models for EMI prediction. [8]
6. (a) With a diagram, explain the open area test site measurement for EMI mea- surement. [10]
(b) What are the measurement precautions during EMI measurement. [6]
7. (a) With a neat diagram, describe the radiated and conducted interference mea- surement. [10]
(b) What are the control requirements of EMI measurement. [06]
8. (a) With a neat diagram, describe the EMI filter characteristics of a Low Pass Filter (LPF). [10]
(b) What are the FCC regulations for EMI. [6]

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1. (a) Discuss in detail about the EMI prediction and Modelling techniques. [12]
(b) What is cross talk? Give some examples? [4]
2. (a) With neat diagrams, differentiate between Amplitude culling and frequency culling. [8]
(b) Explain about detail prediction and performance prediction of various Emissions. [8]
3. (a) With neat diagrams, discuss about the receiver models of EMI prediction. [8]
(b) What are the types of Emissions. Explain in detail. [8]
4. (a) Discuss in detail about Antenna models for Amplitude culling and frequency culling. [8]
(b) Discuss in detail about propagation models for EMI prediction [8]
5. (a) With neat diagrams explain the propagation models for detail prediction and Amplitude culling. [8]
(b) Discuss in detail about the antenna models for EMI prediction. [8]
6. (a) What are the control requirements and test methods for the EMI measurement. [10]
(b) Discuss about the measurement precautions taken during EMI measurement. [6]
7. (a) Describe the open area test site measurement for EMI. [8]
(b) What are the merits and demerits of radiated and conducted interference measurement. [8]
8. (a) Describe the EMI filter characteristics for Highpass filter. [8]
(b) Discuss about EMI standards both military and industrial standards. [8]

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1. (a) With necessary diagrams, explain about the different coupling techniques used to interconnect the medical equipment using cable wire. [10]
(b) Explain in detail about the shielding materials. [6]
2. (a) Discuss in detail about the receiver EMI functions. [8]
(b) With neat figures, explain about the receiver models of Amplitude and frequency culling. [8]
3. (a) Differentiate between detail prediction and performance prediction of receiver models. [8]
(b) Explain about detail prediction and performance prediction of various emissions. [8]
4. (a) Describe the propagation models for Amplitude culling and detail prediction. [8]
(b) What are the considerations for propagation models. [8]
5. (a) Describe the antenna models for amplitude, frequency and detail prediction. [10]
(b) What are the considerations for Antenna models. [6]
6. (a) With a neat diagram, describe the radiated and conducted interference measurement. [10]
(b) What are the control requirements of EMI measurement. [6]
7. (a) Discuss about the measurement precautions taken during EMI measurement. [6]
(b) With neat diagram, explain the open area test site measurement for EMI measurement. [10]
8. (a) Describe the EMI filter characteristics of a Band Pass filter. (BPF). [10]
(b) What are the FCC regulations for EMI control. [6]

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1. (a) With neat diagrams explain about grounding and Bouncing. [8]
(b) Explain in detail about the materials that are used for grounding. [8]
2. (a) Differentiate between detail prediction and performance prediction of receiver models. [8]
(b) What are the different types of Emissions. Explain in detail. [8]
3. (a) Discuss in detail about the receiver EMI functions. [8]
(b) With neat figures, explain about the receiver models of Amplitude culling and frequency culling. [8]
4. (a) Describe the antenna models for Amplitude culling, frequency culling and detail prediction. [10]
(b) Discuss about antenna EMI prediction considerations. [6]
5. (a) Describe the propagation models for amplitude and detail prediction. [8]
(b) Explain the propagation considerations for EMI prediction. [8]
6. (a) Describe the open area test site measurement for EMI. [8]
(b) What are the merits and demerits of radiated and conducted interference measurement. [8]
7. (a) What are the control requirements and test methods for the EMI measurement. [10]
(b) Discuss about the measurement precautions taken during EMI measurement. [6]
8. (a) Describe the EMI filter characteristics of Band Elimination or Band Rejection Filter (BEF). [10]
(b) Describe the EMI standards-both military and industrial standards. [6]
