Time: 3 Hrs ***Marks: 80***

Note:
1. Question No.1 is compulsory.
2. Attempt any three from the remaining questions.
3. Assume suitable data if applicable.
4. Figures on the right hand side indicate full marks.

Q.1 Answer **any *four*** **20 Marks**
(i) Explain the various shielding techniques in EMC with diagrams
(ii) Draw and Compare Maximally flat low pass prototype and Equal ripple low pass prototype, in filter design
(iii) What is DFS? Explain the term with a block diagram
(iv)What is unilateral figure of merit? Explain its relevance with amplifier design
(v) What is the difference between Filter transformation and filter implementation?

Q.2 a. Explain various coupling modes in EMI **10 Marks**

b. What is stability parameter in context with Amplifier Design? Explain types of stability and stability circles **10 Marks**

Q.3 a. Explain the Image parameter method of filter design and mention its characteristics and advantages. **10 Marks**
b. Derive the expression for available and transducer power gain **10 Marks**

Q.4 a. Compare various types of Balanced mixers, Image reject mixers **10 Marks**

b.Explain the concept of Fixed and Variable-Modulus Dividers in Frequency Synthesizers **10 Marks**

Q.5 a With an example explain the difference between Maximum Amplifier and Low Noise Amplifier Design steps **10 Marks**

b Compare CISPR and FCC standards **10 Marks**

Q.6 Write a Short Note on ***Any two*** **20 Marks**
a) Grounding schemes in EMC
b) One-port and two-port microwave oscillator design.
c) DDFS