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Question Paper Code : 71219

M.E./M.Tech. DEGREE EXAMINATION, JUNE/JULY 2013.

Second Semester

Communication Systems

CU 9223/CU 923/10244 CM 203 – MICROWAVE INTEGRATED CIRCUITS

(Regulation 2009/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is Even and Odd mode in coupled micro strip lines?

2. Enumerate the characteristics of substrates.

3. List the merits of Lumped components over microstrip components.

4. Write a brief note on microstrip resistors.

5. Define Transducer gain of an amplifier.

6. What is the role of stability circles plotted on a Smith chart in the amplifier design?

7. What is phase noise?

8. Name few CAD tools for RF circuit design.

9. Write short notes on photonic band gap antenna.

10. What is field probing technique?

PART B — (5 × 16 = 80 marks)

11. (a) Discuss in detail about the Active device technologies.

Or

(b) Explain the multichip module technology in detail.

12. (a) Design a microstrip Low Pass Filter with cut-off frequency 2GHz, 30dB attenuation at frequency 3.5GHz for Chebyshev attenuation response with 0.2dB ripple. Use alumina substrate of thickness 0.63mm.

Or

(b) Describe the multilayer techniques and micro machined passive components in detail.

13. (a) (i) Discuss the properties of Constant Gain Circles in detail. (8)

(ii) Write a detailed note on matching techniques. (8)

Or

(b) Explain the procedure for the design of microwave Low Noise Amplifier.

14. (a) Discuss in detail about MMIC —VCO and mixers.

Or

(b) Explain the procedure for the design of microwave oscillator.

15. (a) Describe the micro electro mechanical system antennas.

Or

(b) Discuss in detail about the thermal and cryogenic measurements.

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