Register No: ……..

M.E. DEGREE EXAMINATIONS: JUNE 2011

Second Semester

COMMUNICATION SYSTEMS

COM506: Microwave Integrated Circuits

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 2 = 20 Marks)

1. Explain a few parameters of Dielectric substrates.
2. Compare conductor thickness and width in thick and thin film technologies.
3. What is diffusion explain
4. What is Ion Implantation?
5. Draw the diagram of micro strip line and show its parts and electric and magnetic fields.
6. Draw the diagram of coplanar wave guide and show its parts.
7. What are synchronous branch line couplers?
8. If the coupling coefficient of a coupled microstrip directional coupler is 3 db.what is its even mode characteristic impedance.
9. What is inter digitated capacitor mention any two application?
10. Explain micro strip phase shifter.

PART B (5 x16 = 80 Marks)

11. a) (i) Explain the possible sequence of steps for fabrication of thick film MIC s (8)

(ii) Describe Vacuum evaporation, sputtering and Etching in thin film technology (8)

(OR)

b) (i) Describe the method of Passivated chips, beam lead devices, leadless inverted device packages. (8)

(ii) Explain Thermo compression Bonding, ultrasonic bonding. (8)

12. a) (i) With relevant equations explain single step and two step methods of diffusion. (8)

(ii) Explain any one method of Vapour Phase Epitaxy. (8)

(OR)

b) (i) Explain the various methods of Growth of Dielectric layers on substrates. (8)

(ii) Explain the main process steps in selective epitaxial growth with a diagram. (8)

13.a) Discuss conformal transformation method of analysis with proper equations of MicroStrip line in detail.

(OR)

b) Explain numerical (relaxation) method of analysis for characteristic impedance of Microstrip line with proper equations in detail.

14. a) With necessary equations explain coupled micro strip directional coupler in detail.

(OR)

b) With necessary equations explain Branch line directional coupler in detail.

15. a) (i) With the field patterns explain the operation of a 3 port junction circulator. (12)

(ii) Explain Faraday rotation in ferrites (4)

(OR)

b) (i) With schematic diagram and field patterns explain the working of an isolator. (8)

(ii) Write short notes on (8)

Flat resistors

Sandwich capacitors

Realized using micro strips.

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