

M.E.DEGREE EXAMINATION: APRIL/MAY 2010

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. List out any four characteristics for an ideal substrate material.
2. What are the different techniques used for mounting beam lead devices?
3. Mention the purpose of using dielectric layers in MIC technology.
4. What is the basic principle of ion -implantation?
5. Mention the methods for analysing microstrip lines.
6. What are the types of losses in microstrips?
7. List out the properties of branch line couplers.
8. Differentiate between periodic and synchronous branch line couplers.
9. What are the factors that minimize conductor loss in ferromagnetic substrates?
10. What is a microstrip isolator?

PART B (5 x 16 = 80 Marks)

11. (a) Explain in detail about thin and thick film technology.

(OR)

- (b) Explain various mounting techniques of active devices.

12. (a) (i) Explain the process of epitaxial layer growth for silicon and GaAs. (8)

- (ii) Describe the various techniques for silicon dioxide layer fabrication. (8)

(OR)

- (b) Explain Diffusion process in detail.

13. (a) Explain hybrid mode analysis of microstrip lines.

(OR)

- (b) Explain in detail numerical method for analysis of microstrip lines.

14. (a) Explain the branch line couplers.

(OR)

(b) Describe in detail the coupled microstrip directional coupler.

15. (a) Explain in detail about design and fabrication of lumped elements.

(OR)

(b) Write short notes on:

(i) microstrip circulators (8)

(ii) isolators. (8)
