MODEL QUESTION PAPER
Second Semester M.Tech Degree Examination
(Electronics and Communication)
Microwave and TV Engineering
TME 2002 : MICROWAVE INTEGRATED CIRCUITS

Time : 3 Hours Max. Marks : 60

Instructions: 1) Answer two questions from each module

MODULE - I

1. a) What do mean by a strip line? Explain the construction, field configuration and different types of losses occurring in a strip line.

   b) A 50 Ω microstrip transmission line need to be designed using a sheet of Epsilam (ε_r = 10) with h = 1.52 mm . Determine the trace width, wavelength and Effective Dielectric constant.

2. a) Explain the working of a coupled strip line. Derive expression for the mutual capacitance of a coupled strip line .

   b) Discuss about the various configuration of planar capacitors used in MIC's.

3. a) Discuss about the different configurations of print inductors used in MIC's and compare their features.

   b) Comment on the different types of discontinuities encountered in Microwave Integrated circuits ?

MODULE – II

4. Explain the implementation of Low Pass Filters and Band Pass filters in microwave integrated circuits?

5 a) Explain the working of a shunt SPST Switch. Derive expressions for it normalised dissipated power.

b) What do you mean by a Switched Channel Attenuator? Explain implementation

of a switched channel attenuator using shunt PIN diodes.

6) a) Explain how circulators and isolators are implemented in MIC's

b) Write brief notes on the working of Ferrite Phase Shifter and Differential Phase Shifter.

MODULE - III

7. With the help of a neat diagram explain the working of a L – band multifunctional Transmit / Receive Module.
8. Explain the working of a electrically tunable L band pre selector balanced amplifier with the help of a block diagram
9. Write short notes on:

a) Microwave Packages

b) Three Dimensional Design in MIC's

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