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Reg. No. : .....

Name : .....

Eighth Semester B.Tech. Degree Examination, April/May 2012
(2008 Scheme)
08.825 : MICROWAVE DEVICES AND CIRCUITS (T)

Time : 3 Hours Max. Marks : 100

Instruction : *Provide Smith chart to students on their* ***request.***

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. Derive expressions for S parameters in terms of Z parameters.
2. Find the ABCD parameters of a 2-port network consisting of a series impedance 'z' between port 1 and port 2.
3. Write brief note on Quaterwave Transformer.
4. Explain the advantages of double stub tuning.
5. Explain the LSA mode of operation of GUNN diode.
6. Explain the operation of a TRAPATT diode.
7. Differentiate between available power gain and transducer power gain.
8. Explain the disadvantages of stripline.
9. Write short notes on planar resistors.
10. Differentiate between circulators and isolators. **(10×4=40 Marks)**

P.T.O.

PART – B

Answer **any two** questions from **each** Module. **Each** question carries **10** marks.

MODULE – I

11. Explain how equivalent voltages and currents are defined for waveguide modes.

12. Design on L-section matching network to match a series RC load with an impedance $Z_L = 200 - j\,100\ \Omega$ to a 100 Ω line, at a frequency of 500 MHz.

13. With the help of neat diagrams explain the structure and operation of MESFET.

MODULE – II

14. Explain the Ridley-Watkin's-Hilsum theory of GUNN diodes.

15. Explain the different modes of operation of the GUNN diode. Differentiate between the various GUNN oscillation modes.

16. Explain about single stage transistor amplifier design.

MODULE – III

17. Explain about the even mode and odd mode of operation of coupled striplines.

18. Explain how capacitors are implemented in MIC's.

19. Write short notes on :

    a) Planar inductors

    b) Discontinuity in MIC's. **(6×10=60 Marks)**