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B.E./B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2012
ELECTRONICS AND COMMUNICATION ENGINEERING BRANCH
SIXTH SEMESTER

EC 385 – RF AND MICROWAVE ENGINEERING
(REGULATIONS 2004)

Duration: 3 Hours

Max.marks: 100

Answer ALL questions

PART-A

(10x2=20 Marks)

1. Define the characteristic impedance of coaxial line.
2. Write the merits of FMCW radar.
3. Write the typical characteristics of circulator.
4. State the applications of tuning screws.
5. State the principle of Crystal diode.
6. Why is parametric amplifier called so?.
7. Draw the equivalent circuit of Reflex Klystron.
8. Why are magnetrons called crossed field tubes?
9. List the types of power meter.
10. Write the need for complex dielectric constant measurement.

PART-B

(5x16=80 Marks)

11. Explain the industrial and medical applications of microwaves. (16)
- 12.(a) With diagrams explain the working principle of Precision type attenuator and Faraday rotation isolator. (16)
- OR
- 12.(b) Explain about the stub realization in microwave circuits. (16)
- 13.(a)(i) Discuss the modes of operation of Gunn diode. (8)
- (ii) Explain the working of two-diode and four-diode PIN switches. (8)
- OR
- 13.(b) Explain the operating principle of IMPATT diode and write the mathematical substantiation of varactor diode. (16)
- 14.(a) With schematic structure describe the parameters to analyze TWTA. (16)
- OR
- 14.(b) Explain the density modulation of two cavity klystron amplifier and the construction of a basic magnetron.. (16)
- 15.(a) Explain the operation of harmonic frequency converter and the transmission method of Q measurement. (16)
- OR
- 15.(b) Explain the application of slotted line method for the measurement of impedance and frequency. (16)
