

Anna University
(PT) B.E.Degree End Semester Examination, April 2014
PTEC 432/ PTEC 385 RF and Microwave Engineering
V Semester
Regulations – 2002/2005

Answer All Questions

Time : 3 hours

Max.marks :100

PART-A

(2x10=20marks)

1. Draw the Electric flux lines in microstriplines and striplines
2. Draw the equivalent circuit of a high frequency Inductor
3. State the applications of a crystal diode
4. How can stubs be used in impedance matching
5. What is role of wedge shaped structure in waveguide matched termination
6. Outline the principle of working of a phase shifter
7. What are the high frequency effects in RF tubes
8. What is meant by strapping in magnetrons
9. Define Q factor of a resonator
10. What are the applications of a spectrum analyser

PART-B

(5x16=80marks)

11.State and prove the properties of S-Matrix.Derive the S matrix of a Directional Coupler

12 a) (i)Discuss the working of a rotary vane attenuator and give its Smatrix

ii)Specify the applications of a Quarterwave transformer and explain its principle of working.

(OR)

12b) (i)Explain the operation of faraday rotation isolator

(ii)Discuss with neat diagram the role of coupling probes and loops in coupling RF power in and out of waveguides

13(a) Explain in detail the working of a GUNN diode and discuss its modes of operation

(OR)

13b)Derive the expressions for power gain and stability factor of a microwave transistor amplifier

14a) Discuss the construction and operation of a travelling wave tube

(OR)

14b) With neat diagram explain and derive the expression for velocity modulation in two cavity klystron amplifier

15a) Explain the procedure for measuring dielectric constant of i) solid material ii) liquid material

(OR)

15b) Explain any two methods of microwave power measurement .