Reg. No. : | | | | | | | | | | |

Question Paper Code: 37403

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Seventh Semester

Electronics and Communication Engineering

01UEC703 - MICROWAVE ENGINEERING

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Why isolators are called uniline?
2. Mention the reason for using S-matrix for microwave analysis.
3. State the main advantages of TRAPATT over IMPATT.
4. Define negative resistance.
5. Mention the performance specification of reflex Klystron.
6. Compare TWTA and klystron amplifier.
7. Outline the features of coplanar strip line and microstrip line?
8. Write about diffusion and ion implantation process in fabrication.
9. List the different types of impedance measurement methods.
10. A wave guide termination with a VSWR of 1.5 is used to dissipate 150 watts of power. Determine the reflected power.

PART - B (5 x 16 = 80 Marks)

11. (a) (ii) Explain different types of waveguide junction with neat diagram. (16)

Or

(b) Describe the scattering matrix of a directional coupler. (16)

12. (a) Explain the various modes of operation of Gunn oscillator with neat sketches. (16)

Or

(b) Derive the manley-rowe relationship for a parametric amplifier and state the use of this relationship. (16)

13. (a) Explain the velocity modulation process and derive the condition at which maximum bunching occurs in two cavity klystron. (16)

Or

(b) Describe with a neat sketch, the constructional details and principle of operation of Magnetron. (16)

14. (a) Discuss the various losses of microstrip line in detail and derive the q-factor of microstrip lines. (16)

Or

(b) (i) Specify the properties of materials that are required for the monolithic microwave integrated circuits fabrication. (8)

(ii) Write short notes on coplanar strip lines and shielded strip lines. (8)

15. (a) Explain in detail the various impedance measurement techniques. (16)

Or

(b) Explain in detail about slotted line VSWR measurement. (16)

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