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

Question Paper Code: 55042

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Fifth Semester

Electronics and Communication Engineering

15UEC502 - TRANSMISSION LINES AND WAVEGUIDES

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. An entire wavelength is equal to

    (a) 2π (b) π (c) $1/2\ (\pi)$ (d) none of these

2. Choose a correct transmission line parameter

    (a) Ampere   (b) Decibel   (c) Conductance   (d) Hertz

3. One Neper equal to

    (a) 9.328 db   (b) 1.632 db   (c) -1.414 db   (d) 8.686 db

4. Dominant mode for TE and TM waves

    (a) TE 10 & TM10   (b) TE 14 & TM 14
    (c) TE16 &TM 16   (d) TE 22 & TM 22

5. The frequency at which the wave motion ceases

    (a) Flat Line   (b) Zero frequency
    (c) Attenuation frequency   (d) Cut-off frequency

PART - B (5 x 3 = 15 Marks)

6. Define Neper.

7. Define an infinite line.

8. What are nodes and antinodes on a line?

9. What is a TEM wave or principal wave?

10. Why are rectangular wave-guides preferred over circular wave-guides

PART - C (5 x 16 = 80 Marks)

11. (a) Explain the operation and design of constant k low pass and high pass filter. (16)

Or

(b) Discuss the characteristic impedance of symmetrical T-networks. (16)

12. (a) Explain (i) the infinite line (ii) wavelength (iii) propagation (iv) Distortion line. (16)

Or

(b) Explain in detail about (i) standing wave (ii) reflection loss. (16)

13. (a) Explain single stub matching on a line. Deduce the expression for the length and location of single stub tuner for impedance matching. (16)

Or

(b) Elaborate various parameters of open-wire and co-axial lines at radio frequency and for high frequency propagation. (16)

14. (a) Explain about the transmission of TM waves between Parallel planes. (16)

Or

(b) Explain about the transmission of TE waves between Parallel planes. (16)

15. (a) Explain the transmission of TM waves in rectangular waveguide with neat diagram and derivation. (16)

Or

(b) Explain about the TE waves in rectangular waveguide. (16)

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