ASSIGNMENT ON Transmission Line

16.3.20.

B.Sc. (H) Elec. III year

(Transmission Line, Wave Propagation & Antennas)

Q1. What are the typical applications of transmission lines?

Q2. Do two-conductor transmission line support TEM mode of propagation?

Q3. What are transmission line equations. Express the voltage and current waves in terms of forward & backward travelling waves. Also Express the characteristic impedance and propagation constant in terms of its parameters

Q4. A 100m long lossless T.L. has a total inductance and capacitance of 27.72 μH & 18 nF. respectively. Determine a) velocity of propagation and the phase constant for an operating frequency of 100 kHz. b) characteristic impedance of T.L.

Q5. A 25-m long lossless T.L. is terminated with a load having an equivalent impedance of $40 + j30\ \Omega$ at 10MHz. The per-unit length inductance and capacitance of the line are 310.4 nH/m & 38.28 pF/m. respectively. Calculate the input impedance at the sending end and the midpoint of the line.

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