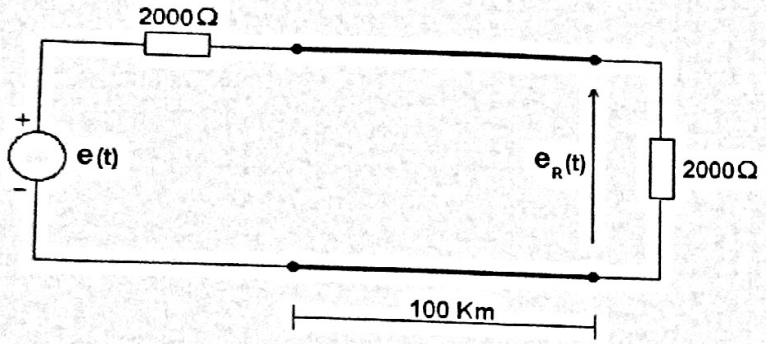
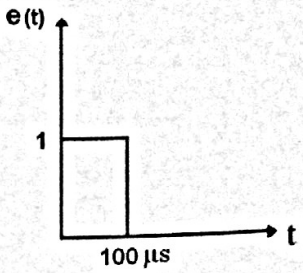
Prova 01 - EE754 A - Ondas Guiadas

Questão 1 (3,5): Considere o esquema abaixo:





r = 100 Ω/Km

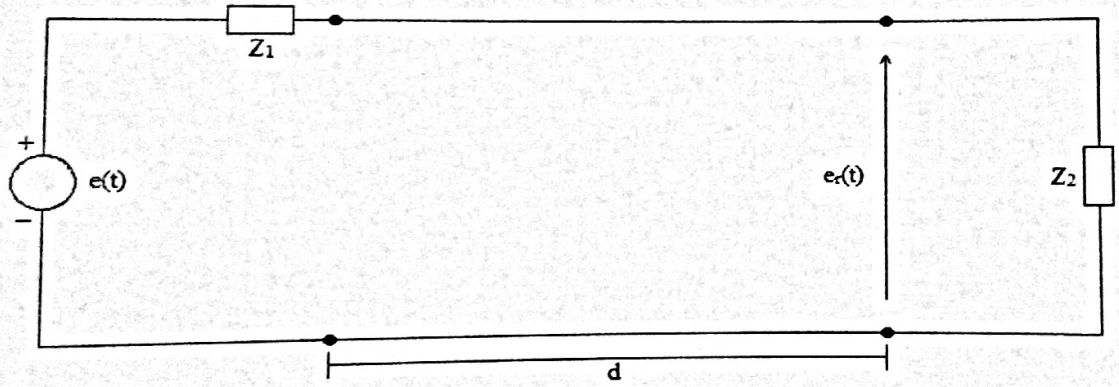
g = 25 μ℧/Km

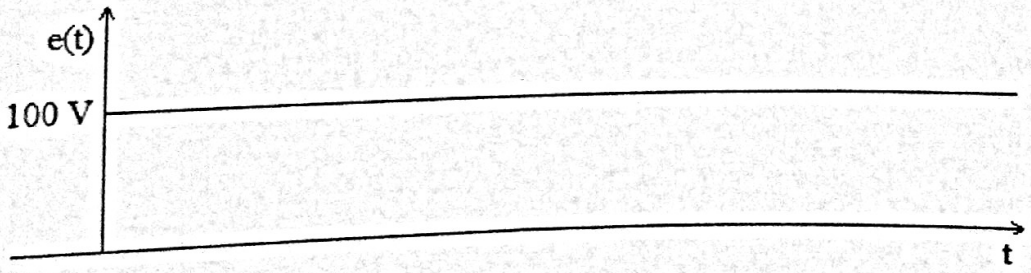
l = 100 mH/km

c = 25 nF/km

a) **(1,5)** Calcule Z_0, $\bar{\Theta}$ e a velocidade de fase;
b) **(2,0)** Calcule a tensão $e_r(t)$ na carga e esboce sua forma de onda;

Questão 2 (3,5): Considere a linha de transmissão a seguir.





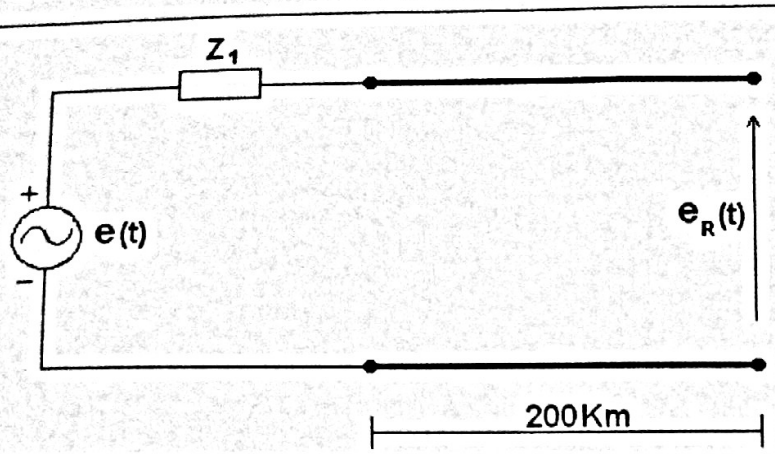
r = g = 0

l = 0,5 mH/km

c = 50 nF/km

a) **(1,75)** Calcule e esboce a forma de onda de $e_r(t)$ para $Z_1 = 100\ \Omega$, $Z_2 = \infty$;
b) **(1,75)** Calcule e esboce a forma de onda de $e_t(t)$ para $Z_1 = 150$, $Z_2 = 200\ \Omega$;

Questão 3 (3,0): Para a linha de transmissão representada a seguir, determine $e_r(t)$



$Z_0 = 649 - j82{,}9\ \Omega$

$\gamma = 0{,}00539 + j0{,}0353$ (por Km)

$f = 1$ KHz

$e(t) = 10$ V (Valor Eficaz)

$Z_1 = Z_0 \rightarrow$ Linha casada na transmissão