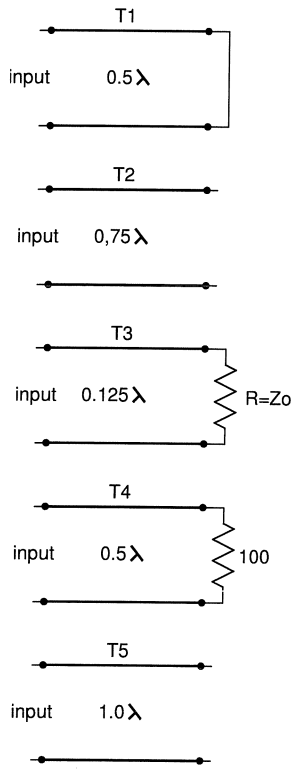
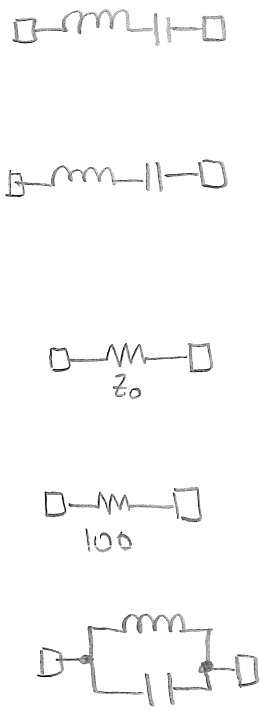
3. The electrical length of several transmission lines are given below. At a frequency corresponding to λ :
(a) draw the equivalent lumped circuit the line would present at its input terminals
(b) give the impedance at the input of the line



(a)



(b)

Short circuit ($\frac{\lambda}{2}$ line Replicates load impedance At the input)

short circuit (equiv to $\frac{\lambda}{4}$ line)

Z_o (Any line terminated in its Z_o has An $Z_{in} = Z_o$)

100 Ω ($\lambda/2$ lines replicate their load impedance At the input)

open circuit ($\frac{\lambda}{2}$ multiples replicate the endpoint impedance)