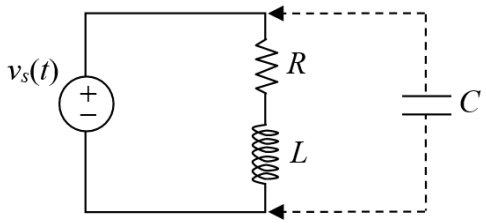
NCTU-ECE Introduction to Electric Circuit (C)

Practice Problems (2023/12/22)

60%

1. Consider the following circuit with the source $v_s(t) = 5cos(10t)$ connected by the payload R=10Ω and L=0.1H in series.



(a) What is the complex power delivered by the source $v_s(t)$?

(b) What is the average power dissipated by the payload?

(c) What is the power factor of the payload?

(d) Choose the capacitance C that will give a unity power factor?

40%

2. Determine the transfer function $\hat{h}(s) = \dfrac{\hat{v}_o(s)}{\hat{v}_s(s)}$.