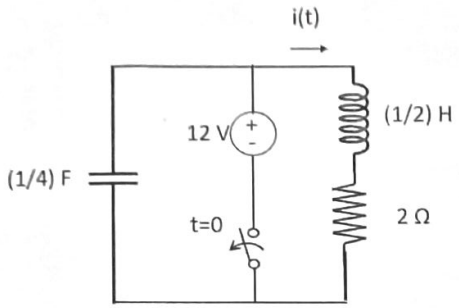
EE 101: Introduction to Electrical and Electronic Circuits, 2018

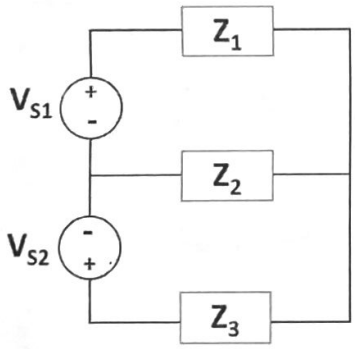
Endsem

(Show all the steps in the solution properly. Weightage=50 %)

1) The switch in the circuit below was closed for a long time and opened at t=0. Find i(t) for t>0. [6 marks]



2) For the circuit shown below, $V_{S1}=2*\cos(\omega t)$ and $V_{S2}=2*\sin(\omega t)$, where $\omega=10$ rad/s. Find out the average power absorbed by each element in the circuit (including power sources). Assume $Z_1=Z_2=Z_3=10-10j\ \Omega$. [6 marks]



3) For the oscillator circuit shown below, assume that the op-amp is ideal. Find out the frequency of oscillation. Find out the minimum value of R for which oscillations occurs. [7 marks]