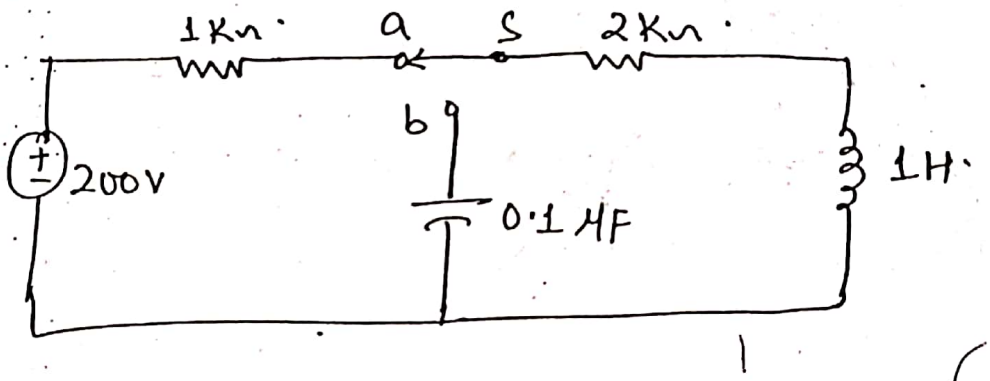
Circuit and Systems

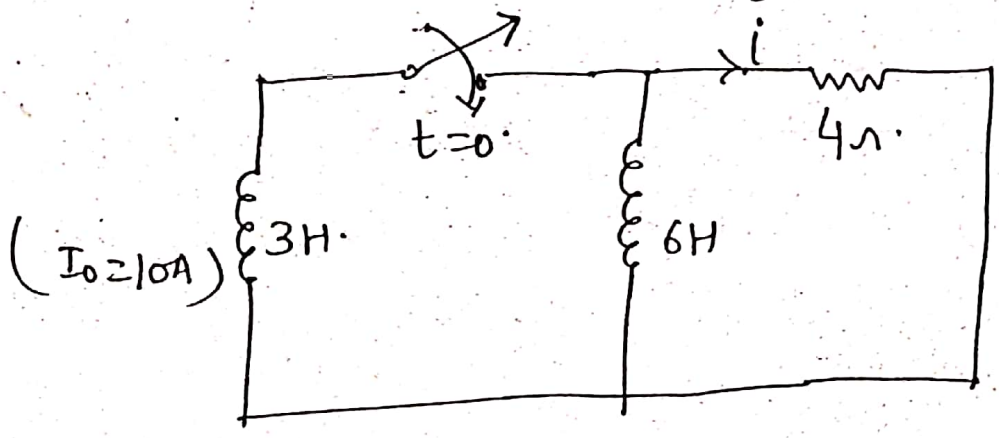
Assignment No. 2

Que-1→ Find the transient responses of series R-L and series R-C circuits having sinusoidal excitation.

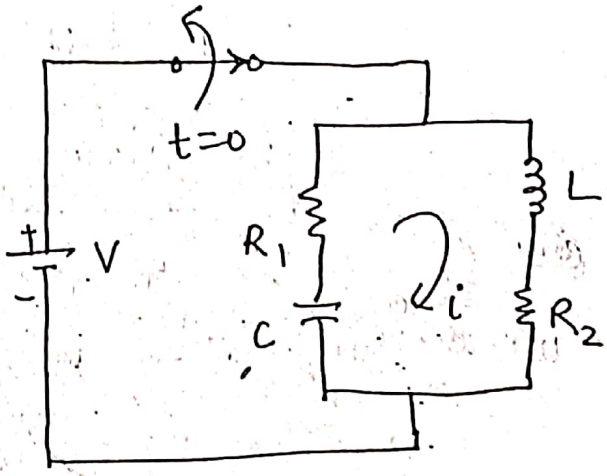
Que-2→ In the given circuit shown in fig: below, the switch S is changed from position 'a' to position 'b' at $t=0$. Find an expression for current $i(t)$, $\frac{di(t)}{dt}$ and $\frac{d^2i(t)}{dt^2}$ at $t=0^+$



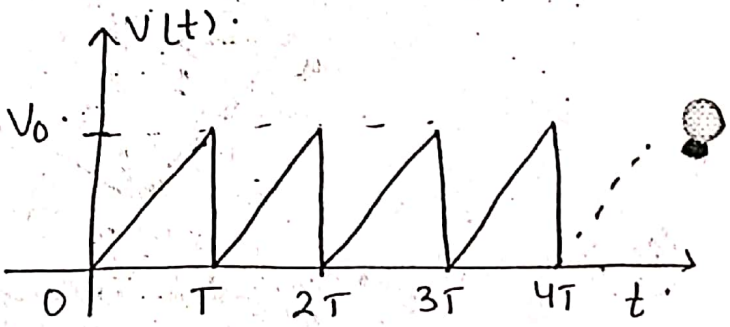
Que-3→ A 3-H inductor in the circuit shown in fig. below, carries a 10-A initial current. The switch is closed at $t=0$. Solve for current i.



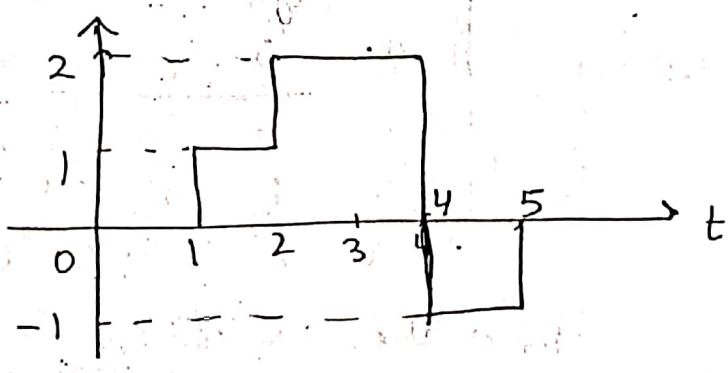
Que-4→ The switch in the circuit shown in fig. is opened at t=0. Determine the current 'i' and it's derivative at $t=0^+$



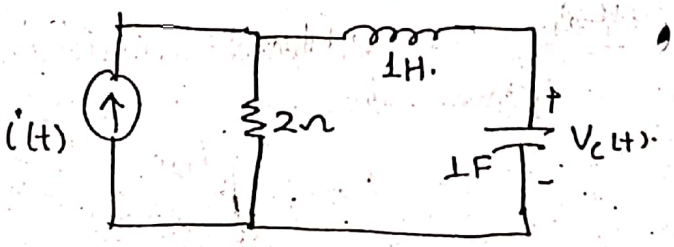
Que-5→ Find the laplace transform of the waveform shown in figure.



Que-6→ Find the laplace transform of the waveform shown in figure.



Que-7→ In the circuit shown in figure, the initial values are $i_L(0^-)=5A$, $V_c(0^-)=10V$, $i(t)=10u(t)$. Determine $V_c(t)$ for $t>0$.



Que-8→ In the circuit shown in figure, the switch 'S' is moved from position 1 to 2 at t=0; a steady state having previously been established at position 1. Solve for current i(t).