

## Assignment-5

1. A circuit shown in fig 1 with  $\omega = 10 \text{ rad/s}$ ,  $L = 0.5 \text{ H}$ ,  $C = 10 \text{ mF}$ . Find voltage  $v$  in its sinusoidal steady-state form when  $V_s = 10 \cos \omega t \text{ V}$ .

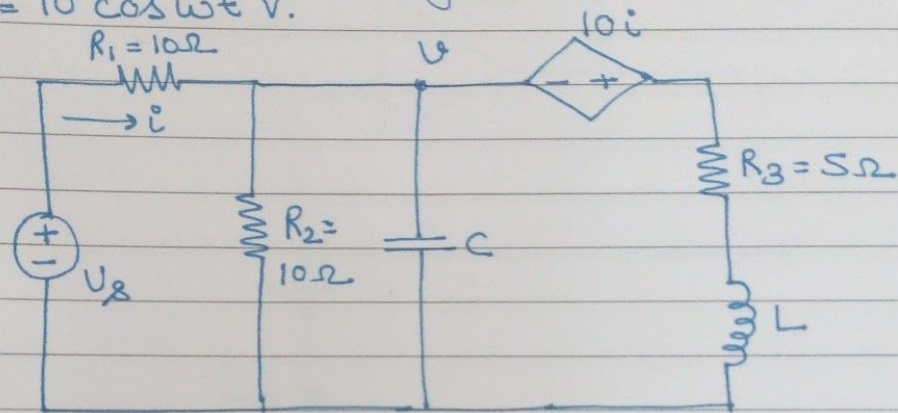


Fig 1

2. A circuit has form shown in fig 2 when  $I_{s1} = 1 \cos 100t \text{ A}$  and  $I_{s2} = 0.5 \cos(100t - 90^\circ) \text{ A}$ . Find voltage  $v_a$  in time domain.

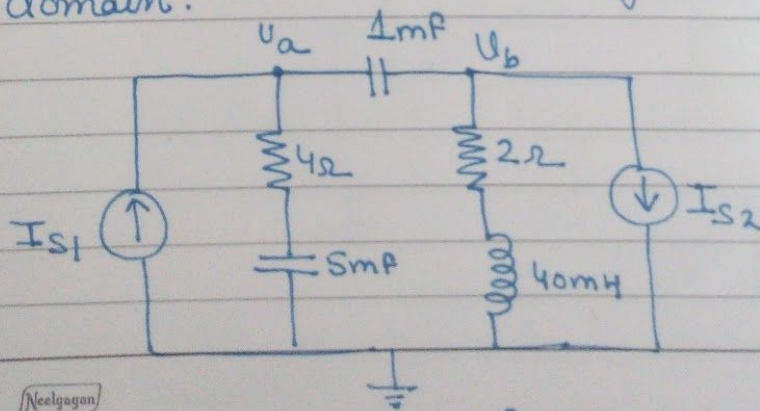


Fig 2

3. Find the steady state response  $V_o(t)$  if  $V_s(t) = \sqrt{2} \cos(1000t)$  for the circuit of fig 3.

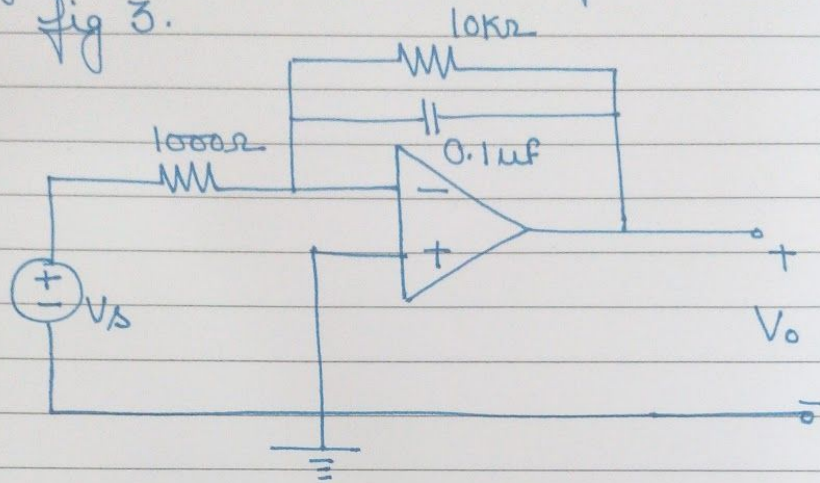
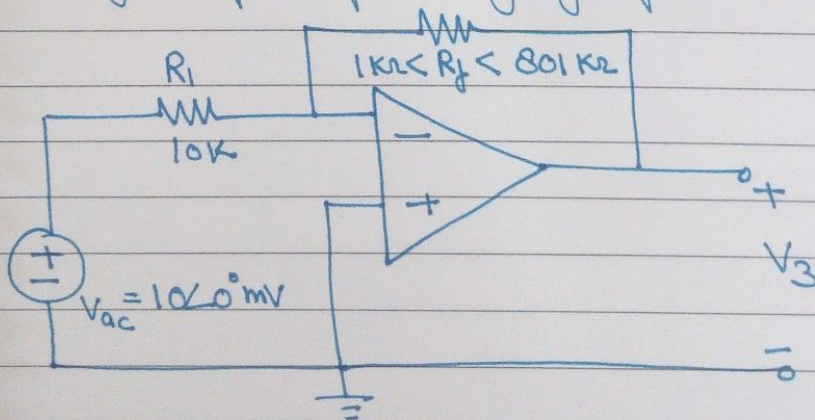


Fig 3

4. Find the frequency response of  $V_3/V_{ac}$  in fig 4 for  $f$  varying from 1MHz to 1GHz.



Note:- All questions to be done in LTSpice as well.