

## LAB and Tutorial Assessment-1

1. The switch in Fig. 1 opens at  $t=0$ . Find  $V_0$  for  $t > 0$

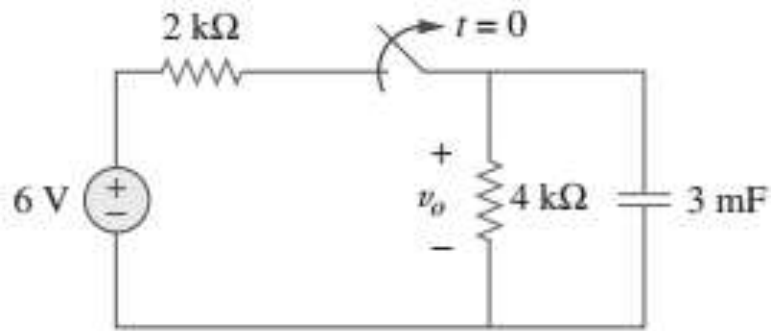


Fig. 1

2. Find  $i$  and  $V_x$  in Fig. 2. Let  $i(0) = 12A$ . Also perform it in LT Spice.

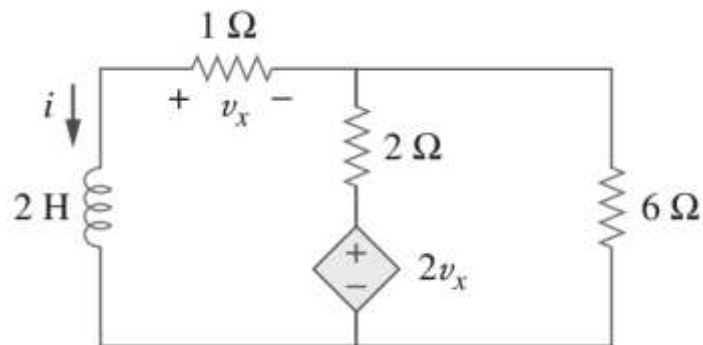


Fig. 2

3. For  $V_c(0) = 20V$ . Determine  $V_c$ ,  $V_x$  and  $i_o$  for  $t \geq 0$ . Also perform in LT Spice.

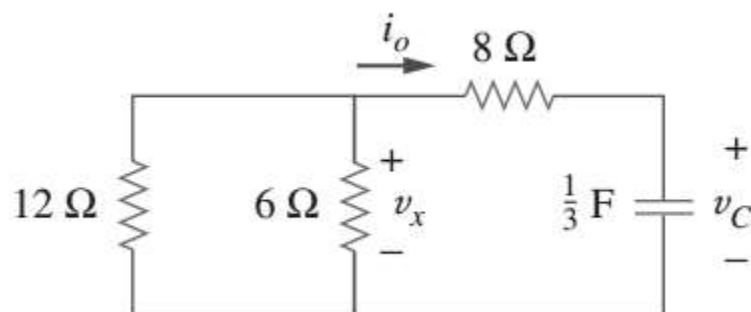


Fig. 3

4. For the circuit in Fig.4, find  $i_o$  for  $t < 0$ .

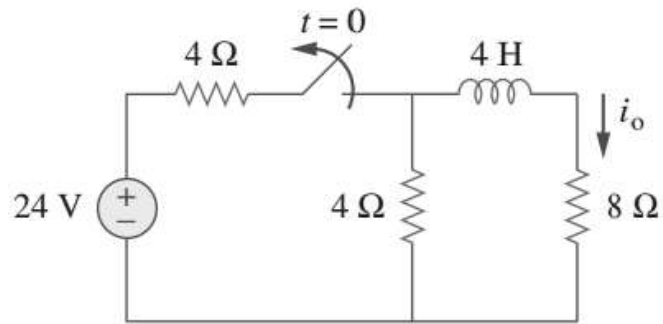


Fig. 4

5. Plot output waveform for rectangular input in LT Spice and MATLAB. Determine the operation performed by the circuit shown in Fig. 5.

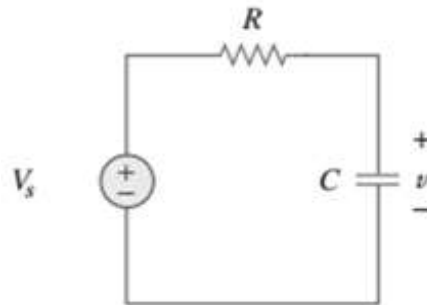


Fig. 5

6. Switch  $S_1$  in Fig. 6 is closed at  $t=0$  and switch  $S_2$  is closed at  $t=2$ . Calculate  $i(t)$  for all  $t$ .

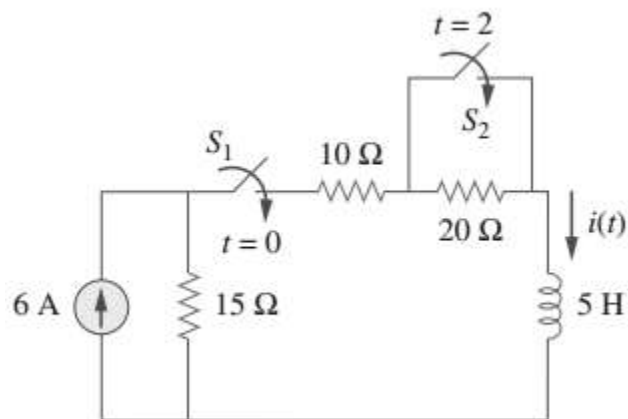


Fig. 6