

# Assignment –I

Q 1. Analyze the circuits in Fig. 1 and in Fig. 2. Evaluate the voltage across the 8 F capacitor in Fig. 1, and the current through the 8 H inductor in Fig. 2. Is there some similarity between the two circuits?

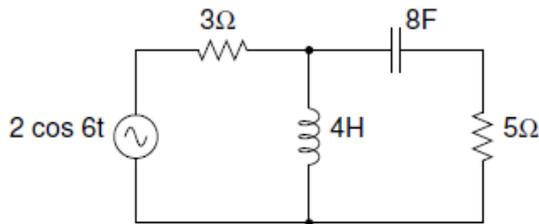


Figure 1

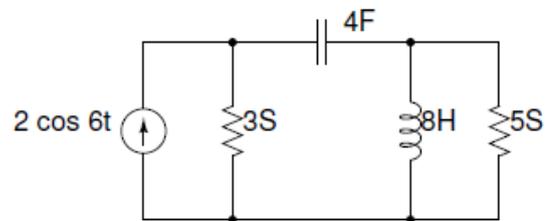


Figure 2

Q 2. The switch in Fig. 4 is closed after a long time, at  $t = 0$ . Find  $i(t)$  for  $t > 0$ .

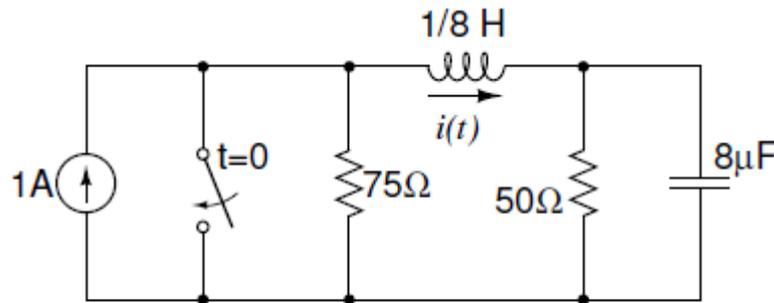
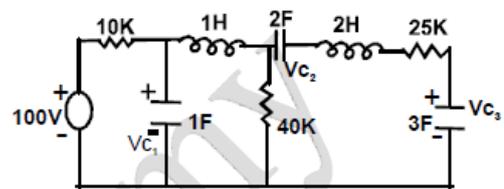


Figure 4

Q 3.

The voltages  $V_{C1}$ ,  $V_{C2}$ , and  $V_{C3}$  across the capacitors in the circuit in figure, under steady state, are respectively [GATE-1996]

- (a) 80 V, 32 V, 48 V
- (b) 80 V, 48 V, 32 V
- (c) 20 V, 8 V, 12 V
- (d) 20 V, 12 V, 8 V



Q 4.

At  $t = 0^+$ , the current  $i_1$  is:

- (a)  $\frac{-V}{2R}$
- (b)  $\frac{-V}{R}$
- (c)  $\frac{-V}{4R}$
- (d) zero

[GATE-2003]

