

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?

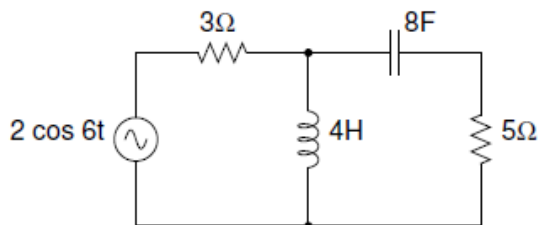


Figure 1

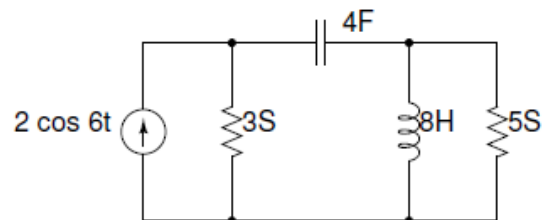


Figure 2

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

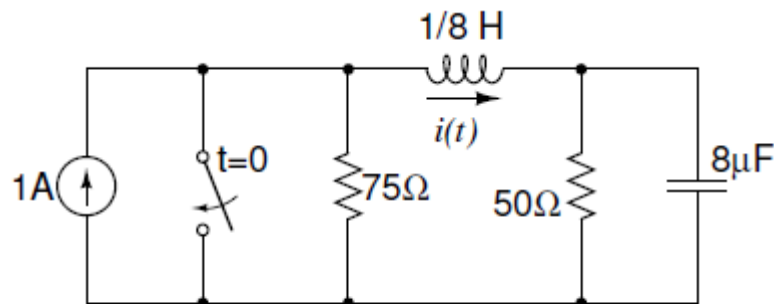
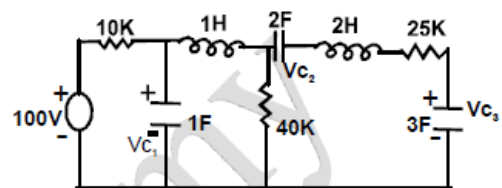


Figure 4

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]

