

Worksheet

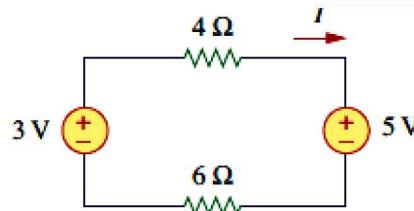
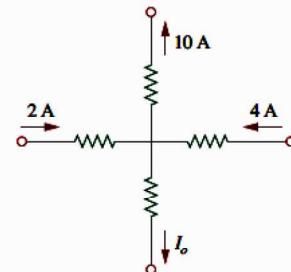
(Chapter 1 Kirchhoff's Law)

MCQ (Multiple Choice Questions)

Q1. Find the value of current I_0 in the following figure:

- (a) -4 A
- (b) -2 A
- (c) 16 A
- (d) 4A

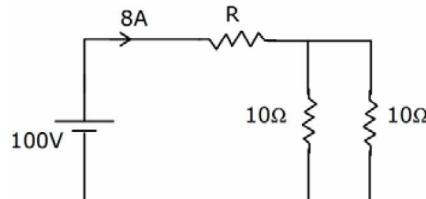
Q2. The current I in the circuit of following Figure is:



- (a) -0.8 A
- (b) -0.2 A
- (c) 0.2 A
- (d) 0.8 A

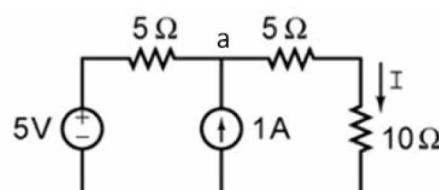
Q3. In the figure given below the value of R is

- (a) 2.5Ω
- (b) 5.0Ω
- (c) 7.5Ω
- (d) 10.0Ω



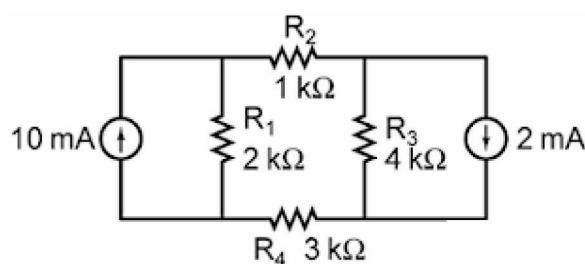
Q4. In the figure shown, the value of the current I (In Amperes) is

- (a) 1 A
- (b) 0.5 A
- (c) 3 A
- (d) 2.5 A

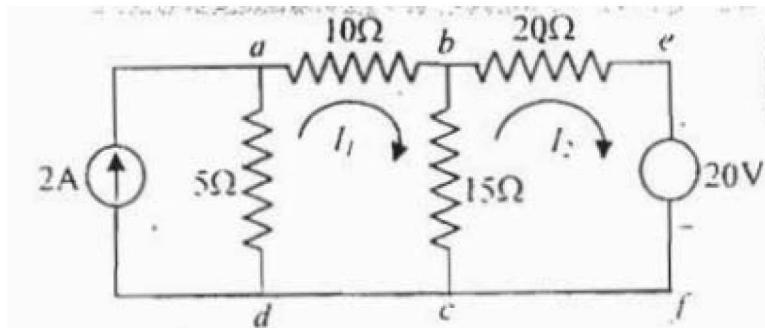


Q5. The magnitude of current (in mA) through the resistor R_2 in the figure shown is

- (a) 3.5 mA
- (b) 2.8 mA
- (c) 1.4 mA
- (d) 2.2 mA

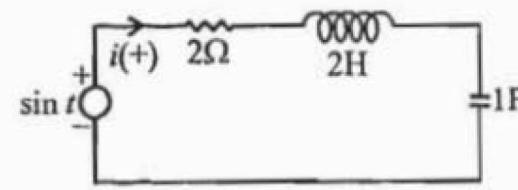


- Q6. Let I_1 and I_2 represent mesh currents in the loop abcd and befc respectively. The correct expression describing Kirchoff's voltage loop law in one of the following loops is



- (a) $30I_1 - 15I_2 = 10$
 (b) $-15I_1 + 20I_2 = -20$
 (c) $30I_1 - 15I_2 = -10$
 (d) $-15I_1 + 20I_2 = 20$

- Q7. The differential equation for the current $i(t)$ in the circuit of the figure is



- (a) $2\frac{d^2i}{dt^2} + 2\frac{di}{dt} + i(t) = \sin t$
 (b) $\frac{d^2i}{dt^2} + 2\frac{di}{dt} + 2i(t) = \text{cost}$
 (c) $2\frac{d^2i}{dt^2} + 2\frac{di}{dt} + i(t) = \text{cost}$
 (d) $\frac{d^2i}{dt^2} + 2\frac{di}{dt} + 2i(t) = \sin t$

MSQ (Multiple Select Questions)

- Q8. In the circuit of given Figure, a decrease in R_3 leads to a decrease of, select all that apply:
- (a) current through R_3
 - (b) voltage across R_3
 - (c) voltage across R_1
 - (d) power dissipated in R_3

