JEE – 2023

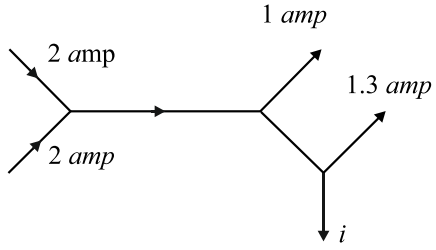
Current Electricity

DPP-07

1. Kirchhoff's first law i.e. $\Sigma i = 0$ at a junction is based on the law of conservation of _____.

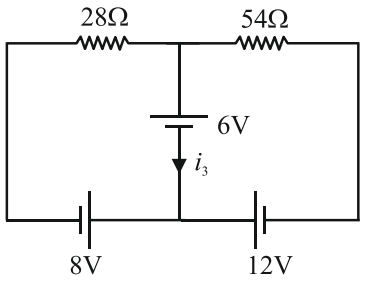
(1) Charge (2) Energy
(3) Momentum (4) Angular momentum

2. The figure below shows currents in a part of electric circuit. The current i is _____.



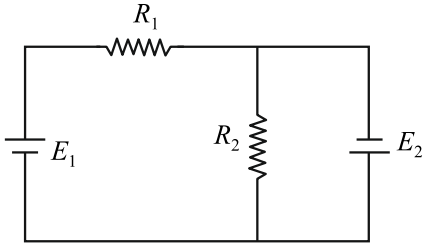
(1) 1.7 amp (2) 3.7 amp
(3) 1.3 amp (4) 1 amp

3. Consider the circuit shown in the figure. The current I_3 is equal to _____.



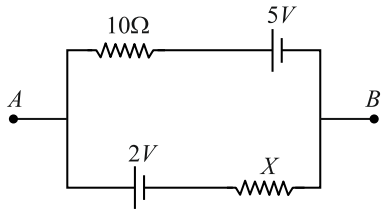
(1) 5 amp (2) 3 amp
(3) – 3 amp (4) – 5/6 amp

4. Two resistances R_1 and R_2 are joined as shown in the figure to two batteries of e.m.f. E_1 and E_2. If E_2 is short-circuited, the current through R_1 is _____.



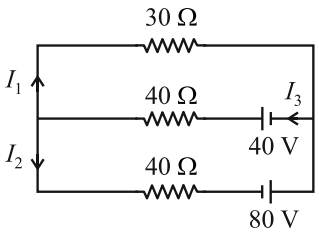
(1) E_1 / R_1
(2) E_2 / R_1
(3) E_2 / R
(4) $E_1 / (E_2 + R_1)$

5. If $V_{AB} = 4V$ in gives figure, then resistance X will be _____.



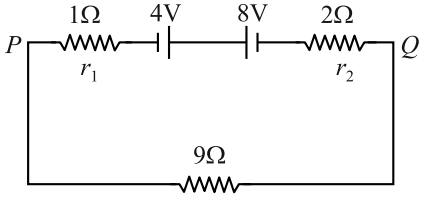
(1) 5 Ω (2) 10 Ω
(3) 15 Ω (4) 20 Ω

6. In the given circuit the current $I_{1\text{ is}}$ _____.



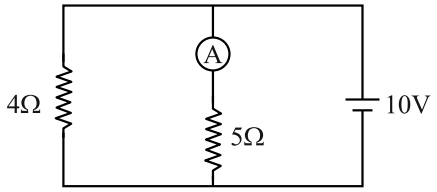
(1) 0.4 A
(2) – 0.4 A
(3) 0.8 A
(4) – 0.8 A

7. Two batteries of e.m.f. 4 V and 8 V with internal resistances 1 Ω and 2 Ω are connected in a circuit with a resistance of 9 Ω as shown in figure. The current and potential difference between the points P and Q are _____.



(1) $\frac{1}{3}$ A and 3 V
(2) $\frac{1}{6}$ A and 4 V
(3) $\frac{1}{9}$ A and 9 V
(4) $\frac{1}{2}$ A and 12 V

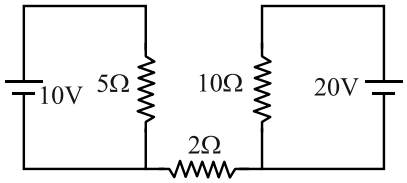
8. In the circuit, the reading of the ammeter is (assume internal resistance of the battery be zero)



(1) $\frac{40}{29}A$ (2) $\frac{10}{9}A$

(3) $\frac{5}{3}A$ (4) $2\,A$

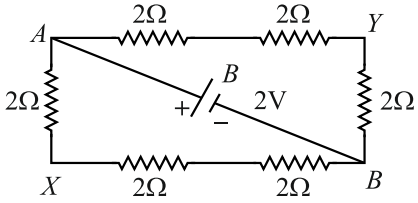
9. Find out the value of current through 2Ω resistance for the given circuit



(1) $5\,A$ (2) $2\,A$

(3) Zero (4) $4\,A$

10. For the following circuits, the potential difference between x and y is volt is _____.



(1) $\frac{2}{3}$ (2) $\frac{4}{3}$

(3) $\frac{8}{9}$ (4) $\frac{5}{3}$

Answer Key

1. **(1)**
2. **(1)**
3. **(4)**
4. **(1)**
5. **(4)**
6. **(2)**
7. **(1)**
8. **(4)**
9. **(3)**
10. **(1)**