



CBSE NCERT Based Chapter wise Questions (2025-2026)

Class-XII

Subject: PHYSICS

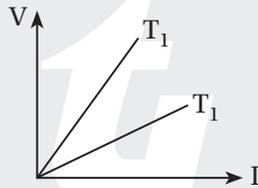
Chapter Name : Current Electricity (Chap : 4)

Total : 14 Marks (expected) [MCQ(1)-2 Mark, VSA-(2)-4 Marks, SA-(1)-3 Marks, LA(1)-5 Marks]

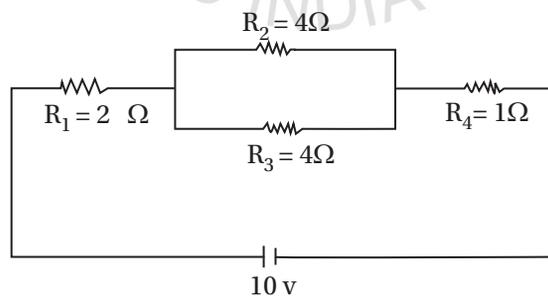
Level - 1

MCQ Type :

1. A current through a wire depends on time as $I = \alpha_0 t + \beta_0 t^2$ where $\alpha_0 = 20 \text{ A s}^{-1}$ and $\beta_0 = 8 \text{ A s}^{-2}$. Find the charge crossed through a section of the wire in 15s.
(A) 2100 c (B) 11250 c (C) 2250 c (D) 260 c
2. If a copper wire is stretched to make its radius decrease by 0.1% then the percentage change in its resistance is approximately.
(A) -0.4% (B) +0.8% (C) +0.4% (D) +0.2%
3. The mobility of charge carriers increases with
(A) increase in the average collision time (B) increase in the electric field
(C) increase in the mass of the charge carrier (D) decrease in the charge of the mobile carriers.
4. The voltage versus current graph for conductor at two different temperatures are shown in the figure. The relation between T_1 and T_2 is



- (A) $T_1 > T_2$ (B) $T_1 < T_2$ (C) $T_1 = T_2$ (D) $T_1 > 2 T_2$
5. In the given circuit, the current in resistance R_3 is



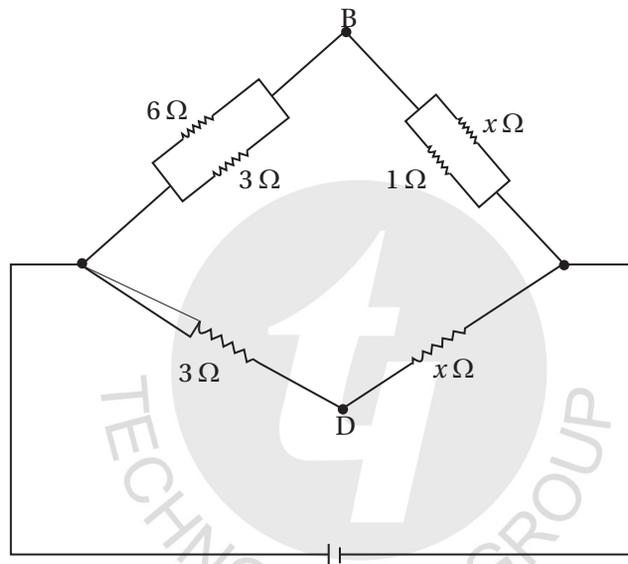
- (A) 1A (B) 2A (C) 1.5A (D) 2.5A
6. A current of 10A exists in a wire of cross sectional area of 5 mm^2 with a drift velocity of $2 \times 10^{-3} \text{ ms}^{-1}$. The number of free electrons in each cubic metre of the wire is
(A) 2×10^{25} (B) 1×10^{23} (C) 625×10^{23} (D) a

Very Short Answer (VSA) :

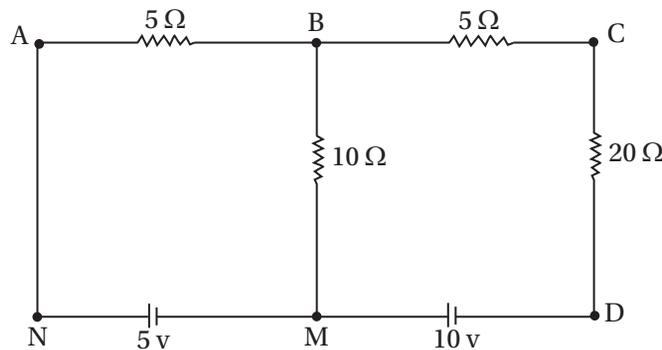
1. How does the drift velocity of electrons in a metallic conductor vary with the increase in temperature ?
2. Why alloys like constantan and manganise are used for making standard resistor ?
3. Why is the terminal voltage of a cell less than its emf ?
4. When a motor car is started, the car lights becomes slightly dim, why ?
5. Is internal resistance a defect of a cell ?
6. If the temperature of a good conductor increase, how does the relaxation time of electron in the conductor change?
7. Why is a slide wire bridge or meter bridge named so ?
8. Write the balancing condition of the wheatstone bridge.

Short Answer (SA) :

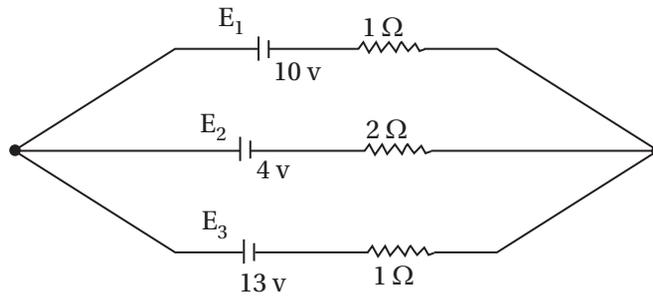
1. If the potential difference between B and D is zero. Find the value of x ?



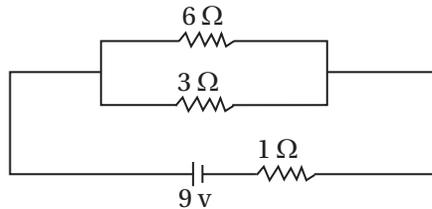
2. Find the currents flowing through the branches AB and BC in following circuit.



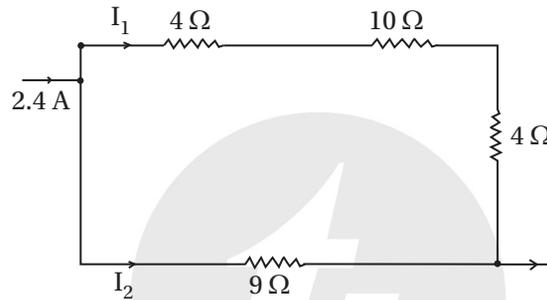
3. Find the current flowing through each cell in the circuit shown in figure. also calculate the potential difference across the terminals of each cell.



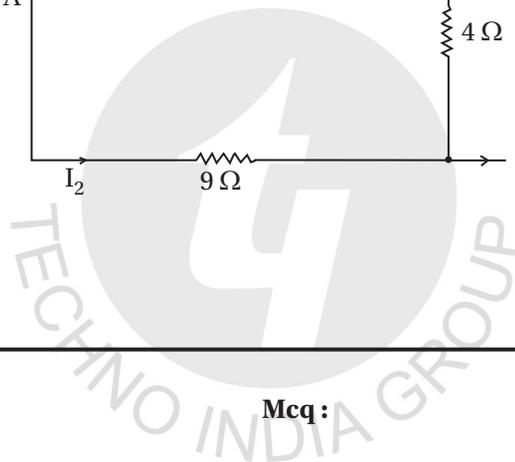
4. Find the heat produced per minute in each of the resistors shown in figure.



5. A combination of four resistances is shown in figure. Calculate the potential difference between the points P and Q and the values of currents flowing in the different resistances.



ANSWER



Mcq :

1. Ⓑ
2. Ⓒ
3. Ⓐ
4. Ⓐ
5. Ⓐ
6. Ⓒ

SA Type :

1. $\frac{1}{2} \Omega$
2. $\left[I_{AB} = \frac{3}{17} \text{A}; I_{BC} = \frac{4}{17} \text{A} \right]$
3. 0, -3A, 3A, 3V
4. 369 J ; 720 J ; 540 J
5. 14.4 v, $I_1 = 0.8\text{A}$; $I_2 = 1.6\text{A}$