



Class 12 Physics | Current Electricity

MCQ WORKSHEET • 15 questions • Choose one correct option • Suggested time: 25 minutes

1. A wire carries 12 C in 4 s. Current is:

A. 0.33 A B. 8 A C. 3 A D. 48 A

2. A 6 Ω resistor carries 2 A. Potential difference is:

A. 24 V B. 3 V C. 12 V D. 8 V

3. Ohm's law applies when physical conditions such as temperature are:

A. Always increasing B. Irrelevant
C. Always decreasing D. Constant

4. For a uniform wire, resistance is:

A. ρLA B. $\rho L/A$ C. LA/ρ D. $\rho A/L$

5. A wire is stretched to twice its length with unchanged volume and resistivity. Resistance becomes:

A. Twice B. Half C. Four times D. Unchanged

6. The SI unit of resistivity is:

A. $\Omega \text{ m}^2$ B. S/m C. Ω/m D. $\Omega \text{ m}$

7. Two resistors 3 Ω and 6 Ω in parallel have equivalent resistance:

A. 4.5 Ω B. 9 Ω C. 2 Ω D. 3 Ω

8. Resistors 2 Ω and 4 Ω in series across 12 V carry:

A. 6 A B. 2 A C. 3 A D. 0.5 A

9. A 5 Ω resistor carries 2 A. Heat produced in 3 s is:

A. 120 J B. 60 J C. 30 J D. 15 J

10. A cell has emf 2 V and internal resistance 0.5 Ω . Supplying 1 A, terminal voltage is:

A. 0.5 V B. 2.5 V C. 2 V D. 1.5 V

11. A 3 V cell with internal resistance 1 Ω connects to 2 Ω load. Current is:

A. 1.5 A B. 0.5 A C. 1 A D. 3 A

12. Kirchhoff's junction rule expresses conservation of:

A. Energy B. Mass of wire
C. Charge D. Magnetic flux

13. Kirchhoff's loop rule expresses conservation of:

A. Momentum
B. Energy
C. Charge only
D. Current magnitude in every branch

14. A balanced Wheatstone bridge has $P=2 \Omega$, $Q=4 \Omega$ and $R=3 \Omega$. S is:

A. 6 Ω B. 3 Ω C. 1.5 Ω D. 8 Ω

15. At fixed current and carrier density, doubling wire area makes drift-speed magnitude:

A. Half B. Twice C. Four times D. Unchanged

ANSWER KEY — check after completing all 15 questions

1.C 2.C 3.D 4.B 5.C 6.D 7.C 8.B 9.B 10.D 11.C 12.C 13.B 14.A 15.A

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper