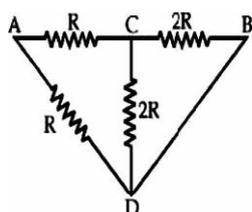
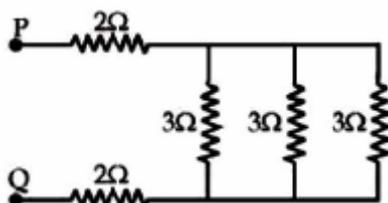


1. Define and explain temperature coefficient of resistance.
2. State and explain the limitations of Ohm's law.
3. Two heated wires of same dimensions are first connected in series and then it's parallel to a source of supply. What will be the ratio of heat produced in the two cases?
4. A wire has resistance of 8Ω , if its length is halved by folding, find its resistance after the free ends are connected to each other.
5. Explain the relation between the e.m.f. of a cell and the potential difference between its terminals.
6. A cell is connected across a resistance to form an electrical circuit. On adding 5Ω to the resistance, the current in the circuit is reduced to $5/6$ of its original value. Find the original resistance in the circuit.
7. A potential difference of 200 V is maintained across a conductor of resistance 100Ω . Calculate the number of electrons flowing through it in one second.
8. A set of n -identical resistors, each of resistance R ohm when connected in series have an effective resistance of X ohm and when the resistors are connected in parallel the effective resistance is Y ohm. Find the relation between R , X and Y ?
9. Evaluate the resistance for the following colour coded resistors. (3 marks)
 - (i) Yellow - Green - Red - Silver
 - (ii) Green - Red - Orange - Golden
 - (iii) Orange - White - Red - Golden
10. A wire of circular cross-section and 30Ω resistance is uniformly stretched until its new length is three times its original length. Find its new resistance.
11. A conductor has resistance of 15Ω at 10°C & 18Ω at 400°C . Find the temperature coefficient of resistance of the material.
12. What is drift velocity? Derive expression for drift velocity of electrons in a good conductor in terms of relaxation time of electrons?

13. What is the effective resistance between points A and B?



14. Potential difference V is applied across the ends of copper wire of length (l) and diameter D . What is the effect on drift velocity of electrons if (1) V is doubled (2) l is doubled (3) D is doubled
15. What will be the resistance between P and Q in the following circuit?



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