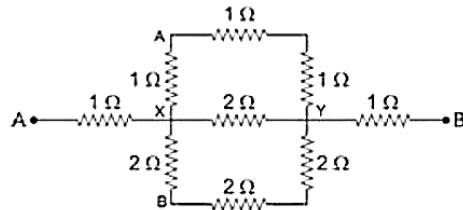


Board – CBSE

Class – 10th

Topic – Electricity

1. What are Ohmic and Non – Ohmic conductors? Draw a $V - I$ and $I - V$ graph for an Ohmic and Non – Ohmic conductor.
2. Calculate the equivalent resistance between points A and B



3. Two wires of the same material and same length have radii r_1 and r_2 . Compare their resistances and resistivity.
4. A wire of 3 ohms and 10 cm is stretched to 30 cm. Find its new resistance.
5. Define Electro-motive force. State the factors affecting emf. Write its mathematical expression and S.I unit.
6. Write a mathematical relation relating em f, terminal voltage and potential drop.
7. Define the internal resistance of a cell. State and explain the factors affecting the internal resistance of a cell.
8. For a combination of resistances in series, derive the following - $R_p = R_1 + R_2$
9. For a combination of resistances in parallel, derive the following - $1/R_p = 1/R_1 + 1/R_2$
10. A cell of emf 1.5 V and internal resistance 10 ohms is connected to a resistor of 5 ohms, with an ammeter in series. What is the reading in the ammeter?
11. Four cells, each of emf 1.5 V and internal resistance 2 ohms, are connected in parallel.

The battery of cells is connected to an external resistance of 2.5 ohms. Calculate:

- (i) the total resistance of the circuit
- (ii) The current flowing in the external circuit
- (iii) The potential drop across the terminals of the cells.

12. State any three factors affecting the resistance of a Conductor
13. Name two substances whose resistance
 - a. increases,
 - b. decreases,
 - c. remains the same; when they are heated.
14. A wire is stretched to four times its original length. Find its new resistance.
15. Write the conditions under which emf and the terminal voltage of a cell are the same.
16. Write two characteristics each of series and parallel connections.
17. Four resistance of 2 ohm each is joined end to end to form a square ABCD. Calculate The equivalent resistance of the combination between any two adjacent corners.