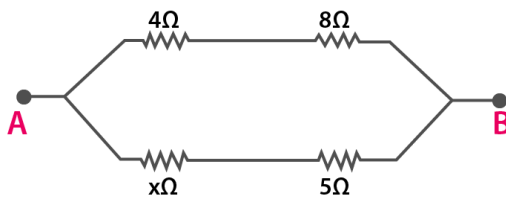


PRACTICE SET 4

3X5

- Water in an electric kettle connected to a 220 V supply took 5 minutes to reach its boiling point. How long will it take if the supply had been of 200 V?
- Two lamps, one rated 220 V, 50 W and the other rated 220 V, 100 W, are connected in series with mains of voltage 440 V. which bulb gets fused?
- A circuit consists of a 1 ohm resistor in series with a parallel arrangement of 6 ohm and 3 ohm resistors. Calculate current through each resistor when a 9V battery is connected across it? Draw a diagram of the arrangement.
- In the circuit shown below in figure, calculate the value of x if the equivalent resistance between the points A and B is 4 ohm.

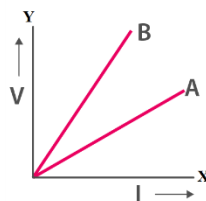


Solution:

- The diagram in figure shows a cell of e.m.f. $\epsilon = 6$ volt and internal resistance $r = 1$ ohm connected to an external resistance $R = 11$ ohm. The ammeter A measures the current in the circuit and the voltmeter V measures the terminal voltage across the cell. What will be the readings of the ammeter and voltmeter when (i) the key K is open, and (ii) the key K is closed

2X3

- The V-I graph for a series combination and for a parallel combination of two resistors is shown in fig. Which of the two, A or B, represents the parallel combination? What will be the corresponding graph for individual resistors?



- Two wires of the same material and same length have radii 1 mm and 2 mm respectively. Compare (i) their resistances (ii) their specific resistance.
- Two bulbs are rated 60 W, 220 V and 60 W, 110 V, respectively. Calculate the ratio of their resistances.

9.

A fuse wire is always connected to the :

- (A) neutral wire (B) earth wire (C) live wire (D) none of these

10.

A switch is always connected to the

- (A) earth wire (B) neutral wire (C) live wire (D) none of these

11.

Coming of live wire and neutral wire in direct contact cause :

- (A) short-circuiting (B) over loading
(C) no damage (D) unknown effect

12.

In three pin socket (shoe) the bigger hole is connected to :

- (A) any wire (B) live wire (C) neutral wire (D) earth wire