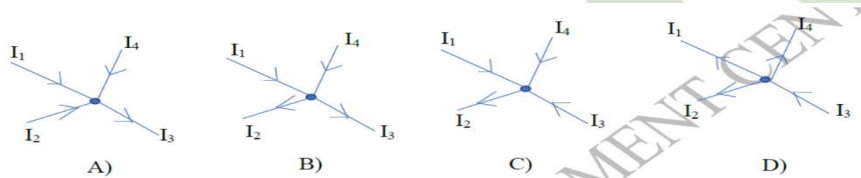## Electrical Circuits:

MCQs,

1. The Kirchhoff's first law ($\sum I = 0$, at a junction), where the symbols have their usual meanings, is based on
   (a) conservation of momentum
   (b) conservation of charge
   (c) conservation of potential
   (d) conservation of energy

2. n Which one of the following diagrams the currents are related by the equation, $I_1 - I_2 = I_3 - I_4$

3. The Kirchhoff's second law ($\sum iR = \sum E$), where the symbols have their usual meanings, is based on
   (a) conservation of momentum
   (b) conservation of charge
   (c) conservation of potential
   (d) conservation of energy

4. In meter bridge experiment, the ratio of the left gap resistance to right gap resistance is 2:3, the balance point from the left is
   (a) 60cm   (b) 50cm   (c) 40cm
        (d) 30cm

5. In a Wheatstone bridge, all the four arms have equal resistance R. If the resistance of the galvanometer arm is also R, the equivalent resistance of the combination as seen by battery is,
   (a) R   (b) 2R   (c) R/2   (c) R/4

6. Why is the Wheatstone bridge better than the other methods of measuring resistances?
   (a) It does not involve Ohm's law

   (b) It is based on Kirchhoff's law
   (c) It has four resistor arms
   (d) It is a null method

7. In a Wheatstone bridge in the battery and galvanometer are interchanged then the deflection in galvanometer will
   (a) change in previous direction
   (b) not change
   (c) change in opposite direction
   (d) none of these.

8. In a meter bridge setup, which of the following should be the properties of the one-meter long wire?
   (a) High resistivity and low temperature coefficient
   (b) low resistivity and low temperature coefficient
   (c) Low resistivity and High temperature coefficient
   (d) High resistivity and high temperature coefficient

9. When a metal conductor connected to left gap of a meter bridge is heated, the balancing point
   (a) shifts towards right
   (b) shifts towards left
   (c) remains unchanged
   (d) remains at zero

10. A resistance of 5 ohms is connected in the left gap of a meter bridge and 15 ohms is the other gap. The position of balancing point is:
    (a) 25 cm
    (b) 15 cm
    (c) 60 cm
    (d) 75 cm

11. In the experiment of potentiometer, at balance point, there is no current in the
    (a) main circuit
    (b) potentiometer circuit
    (c) galvanometer circuit
    (d) both main and galvanometer circuits