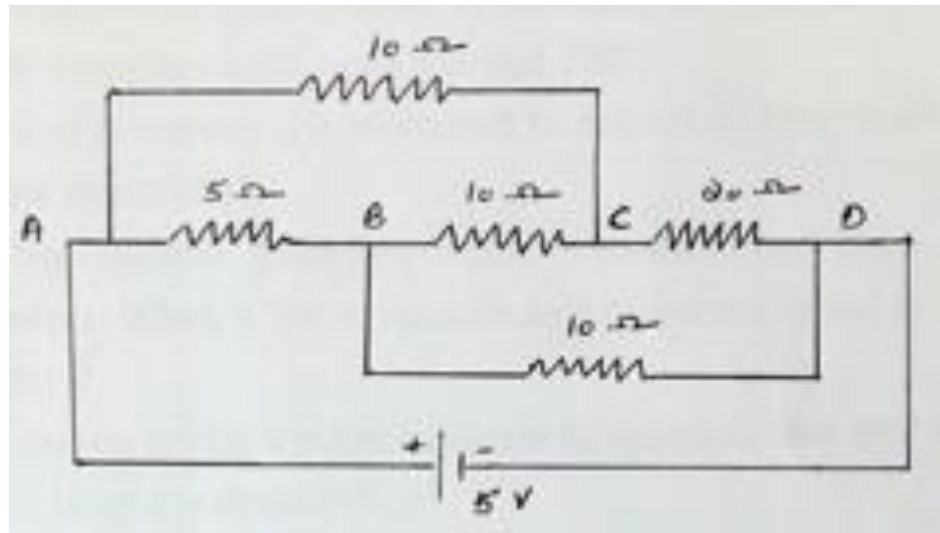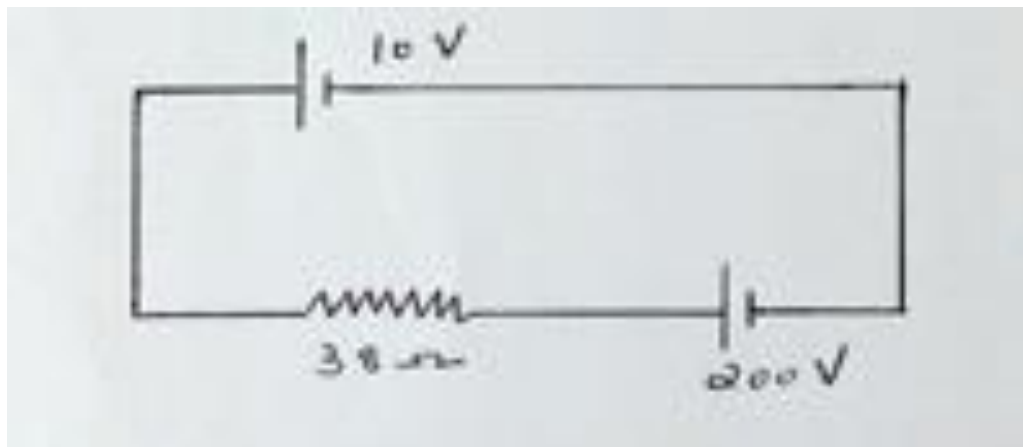# CURRENT ELECTRICITY

1. Calculate the value of the current drawn from a 5V battery in the circuit as shown.

2. A 10 v battery of negligible internal resistance is connected across a 200 V battery and a resistance of 38Ω as shown the figure. Find the value of the current in the circuit.

3. The number density of conduction electrons in a copper conductor is 8.5×10^{28} m^{-3}. How long an electron take to drift from one end of a wire 3m long, to its other end ? A = $2 \times 10^{-6} m^2$ and it is carrying a current of 3 A.

4. A silver wire has a resistance of 2.1 Ω at 27.5^{0}C and a resistance of 2.7 Ω at 100 ^{0}C. Determine the temperature coefficient of resistivity of silver.

5. A steady current flows in a metallic conductor of non uniformcrossection. Which of the following quantities is constant along the conductor: current, current density, drift velocity.?

6. Which of the two has greater resistance : 1kW electric heater or a 100 W tungsten bulb, both marked 230 V.

7. A wire of resistivity ρ is stretched to double its length what will be its new resistivity?

8. A carbon resistor is marked in colour bands of red, black, orange and silver. What is the resistance and tolerance value of the resistor ?

9. Why do we prefer a potentiometer to measure the emf of a cell rather than a voltmeter?

10.   Define current sensitivity of a galvanometer. Write its S.I unit