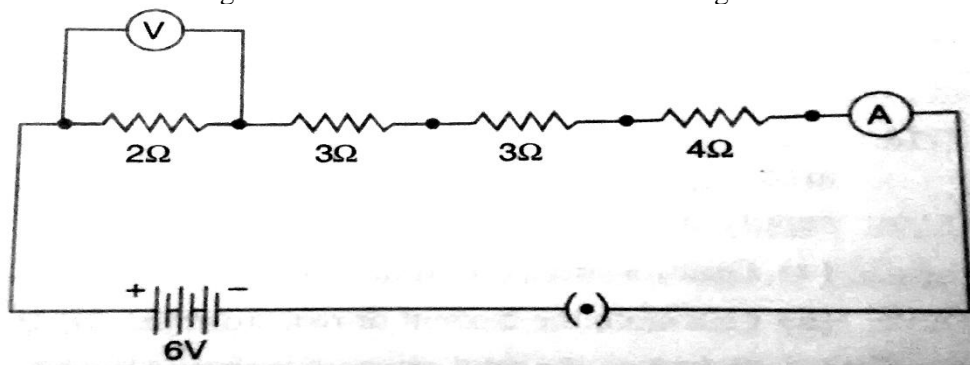
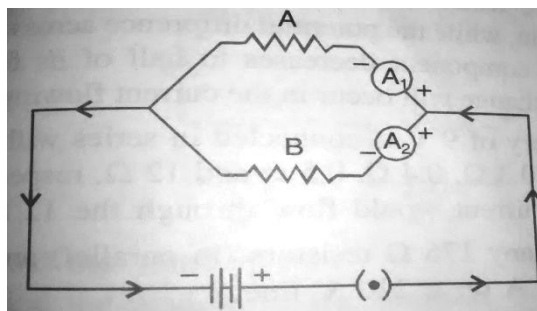


**Std. : X**  
**Unit : Current Electricity**  
**Level - III**

- Q.1. (a) Define S.I. unit of resistance. (b) Write any three differences between the series and parallel combination of resistance.
- Q.2. Draw any electric circuit to describe Ohm's law. Label the circuit components used to measure electric current and potential difference.
- Q.3. Define the unit of current. Name the instrument used to measure electric current. How is it connected in a circuit ?
- Q.4. A piece of wire of resistance  $20\ \Omega$  is drawn out so that its length is increased to twice its original length. Calculate the resistance of the wire in the new situation.
- Q.5. State Ohm's law. How is it represented graphically ? Apply this law to obtain the relation for the combined resistance when three resistors  $R_1$ ,  $R_2$  and  $R_3$  are connected in series. List two disadvantages of connecting the household appliances in series.
- Q.6. Name an instrument that measures electric current in a circuit. Define the unit of an electric current.
- Q.7. The filament of an electric lamp, which draws a current of  $0.25\ \text{A}$  is used for four hrs. Calculate the amount of charge flowing through the circuit.
- Q.8. Find out the reading of ammeter and voltmeter in this circuit given below



- Q.9. What are the advantages of connecting electrical devices in parallel with the battery instead of connecting them in series ?
- Q.10. Will current flow more easily through a thick wire or through a thin wire of the same material when connected to the same source ? Why ?
- Q.11. A piece of wire of resistance  $R$  is cut into five equal parts. These parts are then connected in parallel. If the equivalent resistance of this combination is  $R'$ , then find the ratio  $R/R'$ .
- Q.12. What is meant by saying that the potential difference between two points is 1 volt ?
- Q.13. A torch bulb is rated  $2.5\ \text{V}$  and  $750\ \text{mA}$ . Calculate its power.
- Q.14. In the given circuit, resistors A and B are made up of same metal and are of the same length but, A is thicker than B.



- Q.15. An electric lamp is marked  $25\ \text{W}$ ,  $220\ \text{V}$ . it is used for 10 hrs daily. Calculate :-  
 i. Its resistance while glowing.  
 ii. Energy consumed in kWh per day.
- Q.16. The charged possessed by an electron is  $1.6 \times 10^{-19}$  coulombs. Find the number of electrons that will flow per second to constitute a current of 1 ampere.
- Q.17. The potential difference between the terminals of an electric heater is  $60\ \text{V}$  when it draws a current of  $4\ \text{A}$  from the source. Find the resistance of heater when in use.
- Q.18. An electric fan/motor becomes warm when continuously used for a long time. Why ?
- Q.19. State one difference between kilowatt and kilowatt hour.
- Q.20. Relate 1 kWh and S.I Unit of energy.