INDIAN SCHOOL MUSCAT
SENIOR SECTION
DEPARTMENT OF PHYSICS
CLASS X
ELECTRICITY

1) What happens to the resistance of a conductor when its area of cross section is increased ?

2) What is meant by electrical circuit? A 9 Ω resistance is cut in to three equal parts and connected in parallel. Find the equivalent resistance of the combination ?

3) Draw a circuit diagram consisting of a battery of two cells of 2 volts each, a 25 Ω resistor, a 4Ω resistor, a 6Ω resistor and a plug key, all connected in series.

4) What is likely to happen if the positions of ammeter and voltmeter are interchanged in a circuit?

5) 100J of work is done in transferring 20C of charge between two points in a conductor. Find the resistance offered by the conductor, if a current of 2A flows through it.

6) A wire of resistance 10Ω is bent in the form of a closed circle. What is the effective resistance between the two points at the ends of any diameter of the circle?

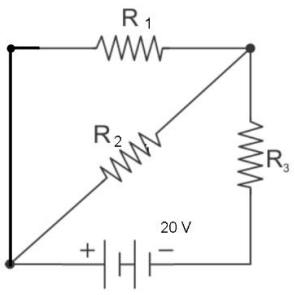
7) Why is series arrangement not used in domestic appliances in a circuit.

8) List two reasons why nichrome is used for making heating element of electrical appliances.

9) A torch bulb is rated 2.5 V and 750 mA .Calculate (i) power (ii) resistance (iii) energy consumed if the bulb is lighted for four hours.

10) State which has a higher resistance. A 50W or 25W lamp. Also find the ratio of their resistances.

11) Consider the following circuit diagram.If $R_1 = R_2 = R_3 = R_4 = 3\ \Omega$, find the equivalent resistance of the circuit and the current flowing through it.



12) Four resistance of 2ohm each are joined end to end to form a square ABCD. Calculate the equivalent resistance of the combination between any two adjacent corners.

13) List two safety measures commonly used in electric circuits. Explain the main function of each.

14) For a heater rated at 4.4 kW; 220 V . Calculate the -
(i) current drawn by the heater (ii) resistance of the heater element
(iii) energy consumed by the heater in 5 hours (iv) cost of running the heater if 1 kWh costs Rs. 6.50

15) A electric toaster of resistance 20 Ohm takes a current of 5A. Calculate the heat developed in 30 s.