ASSIGNMENT TEST
CHAPTER – ELECTRICITY

TIME : 1 HOUR **MM : 30**

Q.1. Two resistors of 10 Ω and 15 Ω are connected in series to a battery of 6 V. How can the values of current passing through them be compared ?

Q.2. How can three resistors of resistance 2, 3 and 6 Ω be connected to give a total resistance of (a) 4 Ω, (b) 1 Ω ?

Q.3. (a) Define the term 'coulomb'.

(b) State the relationship between the electric current, the charge moving through a conductor and the time of flow.

Calculate the charge passing through an electric bulb in 20 minutes if the value of current is 200 mA.

Q.4. Explain the following :

(a) Why is the tungsten used almost exclusively for filament of electric lamps ?

(b) Why are the conductors of electric heating devices, such as bread toasters and electric irons, made of an alloy rather than a pure metal ?

(c) Why is the series arrangement not used for domestic circuits ?

Q.5. What is ohm's law?

Q.6. Name the property by virtue of which two conductors having identical structure offer different resistances to the flow of current when connected to the same source of electric current.

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Q.7. Two wires, one of mangainin and other of copper have equal lengths and resistances. Which one of these wires will be thicker?

Q.8. Define potential difference. Also find the work done to carry a charge 3.2 $\times$ 10^{-19} C from 0 V to + 20 V.

Q.9. A wire of length l, area of cross-section A and material of resistivity ρ is cut into two parts in the ratio 1 : 3 of length. Find the ratio of their (i) resistivity and (ii) resistance.

Q.10. Give reason for the following :

(i) Alloys are used in making standard resistances.

(ii) Fuse wire is connecting in series.

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