

Sub: Physics Assignment-2

1. Define the term “electric current”.
2. Define the term ‘resistivity’ of a material.
3. How is a Voltmeter connected in the circuit to measure the potential difference between two points?
4. You have two metallic wires of resistances 6 ohm and 3 ohm. How will you connect these wires to get the effective resistance of 2 ohm?
5. If the distance between two electric charges is doubled, how much will the force exerting between them change to?
6. State Ohm’s law. “The resistance of a conductor is 1Ω .” What is meant by this statement?
7. Why are coils of electric toaster made of an alloy rather than a pure metal?
8. Why is the series arrangement not used for domestic circuits?
9. A wire of resistivity ‘ r ’ is stretched to double its length. How does it affect the (a) resistance (b) resistivity?
10. Write two points of difference between direct and alternate current
11. An electric geyser has the rating 2000W-220 V marked on it. What should be the minimum current rating (in whole number) of the fuse – wire to be used?
12. An electric lamp is marked 100 W, 220 V. It is used for 5 hour daily. Calculate (i) its resistance while glowing (ii) energy consumed in kWh per day.
13. A bulb is rated at 5.0 volt, 100 mA. Calculate its (i) power (ii) resistance.
14. A wire of resistance ‘ R ’ is stretched by 50%. What will be percentage change in its resistance?
15. The resistance of 100 W bulb is less than resistance of 40 W bulb. Explain the reason. 3 marks questions
16. Derive the equation for resultant resistance of Resistors in series
17. How much work is done in moving a charge of 3 coulomb from a point at the volts 115 to a point at 125 volts? [30j]
18. A heater wire whose power is 4KW is connected to 220 V source calculate:-
(i) Electric current in the circuit (ii) Resistance of heater (iii) Energy consumed in 2 hours.
20. (a) Which has more resistance: 100W bulb or 60W bulb?

(b) A wire of resistance 5Ω is bent in the form of a closed circle. What is the effective resistance between the two points at the end of any diameter of the circle?

21. Two wires A and B are of equal lengths, different cross-sectional areas and made of the same metal.

(i) Name the property which is same for both the wires.

(ii) Name the property which is different for both the wires.

(iii) If the resistance of wire A is four times the resistance of wire B, calculate

(a) the ratio of the cross-sectional areas of the wires.

(b) the ratio of the radii of the wires.

22. Drift speed is the term used to describe the flow of current through a conductor. Does it represent the speed of the current or its strength?

23.. A resistor of 8Ω is connected in parallel with another resistor X. The resultant resistance of the combination is 4.8Ω . What is the value of X?

24. How will you connect three resistors of 2Ω , 3Ω , 5Ω respectively so as to obtain a resultant resistance of 2.5Ω ? Draw the diagram to show arrangement.

25. A wire of resistance 5Ω is bent in form of closed circle. What is the effective resistance between the two points at ends of any diameter of circle?