SIR C.V RAMAN COACHING CENTRE ,IDAPPADI,SALEM-637101

SUB: PHYSICS STD : XII Time : 1.00 hrs Date : 11.06.2023

UNIT : 2 **Current Electricity** Total mark : 35m

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Section – A (5 x 1 = 5m)

I.Choose the best correct answer

1.A 110 W,220 V bulb draws a current

a) 2A b) 440 A c) 0.5 A d) 5.5A

2. 5 A of current flowing through resistor for 2 minute produce 3000 j of heat the value of the resistance is ……

a) 1 ohm b) 2 ohm c) 4 ohm d) 5 ohm

3.Choose the odd one out

a) Current density b) current c) drift velocity d) Electric field

4. The one of the resistors in a parallel circuit is removed the total resistance will be ……

a) Doubled b) decreases c) increases d)constant

5. The unit of conductivity is ……..

a) mho b) ohm c) ohm-m d) mho – m^{-1}

Section – B (5 X 3 = 15 m)

II.Answer any FIVE questions

6. The resistance of a wire is 20 ohm what will be new resistance if it is stretched uniformly Eight times its original length?

7. Relation between current and drift velocity

8. The resistance of a Nichrome wire at 20^0 C is 10 ohm if its temperature coefficient of resistivity of nichrome is $0.004/^0C$.find the resistance of the wire at boiling point of water comment on the result

9. (i) Define Electric cell (ii) find 1 Kwh

10. Derive the expression for power P = VI in electrical circuits

11. Explain potentiometer with neat circuit

12. Prove that $H = I^2Rt$

Section – C (3 x 5 = 15 m)

III.Answer any THREE questions

13. Obtain the macroscopic form of ohm's law from its microscopic form and discuss its limitation in graph analysis .

14. Determine the number of electrons flowing per second through a conductor when a current of 32 A flow's through it

15. Derive the expression for resultant cell when cell are connected in (i) Series and (ii) parallel connections with neat diagram

16.(i) How will you represent a resistor of 3700 ohm and 10 % by color code

(ii) Find the resistance series and parallel connection in 2 ohm, 4 ohm ,6 ohm ?

17 (i) Write the formula and unit a) Acceleration b) mobility c) drift velocity

(ii) Find the resistance value in 100 W – 220 V