St. Mary's School, Dwarka
Holiday Homework
Class XII
Subject: Physics
Week 2
Worksheet 2

Objective:

- Revision of concepts
- Skills to carry out research and develop scientific aptitude
- Encouraging learning through experiences

Instructions:

- Neatly write all the answers in your Physics note book.
- Attempt the questions keeping in mind the weightage of each question.
- Assignment 'Summer Holiday Homework' will be created on TEAMS. PDF of handwritten work should be uploaded on it.

M.M : 25

Q1 (i).Three charges, each equal to +5μC are placed at the corners of an equilateral triangle. If the force between any two charges be F, then what will be the net force on either Charge?

(ii) State two important properties of electric charge. (2)

Q2.A 10Ω thick wire is stretched so that its length becomes three times. Assuming that there is no change in its density on stretching, calculate the resistance of the new wire. (2)

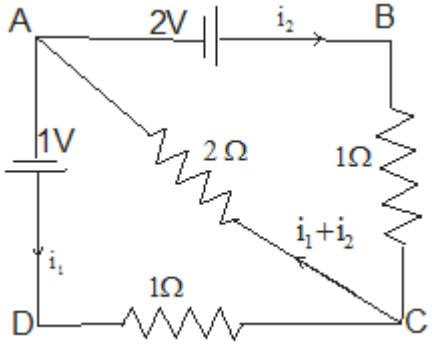
Q3.A sliver wire has a resistance of 2.1 Ω at 27.5 ^{o} C, and a resistance of 2.7 Ω at 100^{o}C. Determine the temperature co-efficient of resistance of silver. (2)

Q4. Draw a graph showing variation of resistivity with temperature for copper & nichrome. (2)

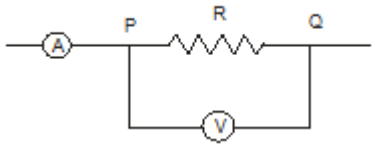
Q5. Define conductivity of a substance. Give its S.I unit. How does it vary with temperature for insulators & conductors? (2)

Q6. (i)Two insulated charged copper spheres A and B have their centres separated by a distance of 50 cm. what is the mutual force of electrostatic repulsion if the charge on each is 6.5 x 10^{-7} C? The radii of A and B are negligible compared to the distance of separation. (ii) What is the force of repulsion if each sphere is charged double the above amount, and the distance between them is halved? (3)

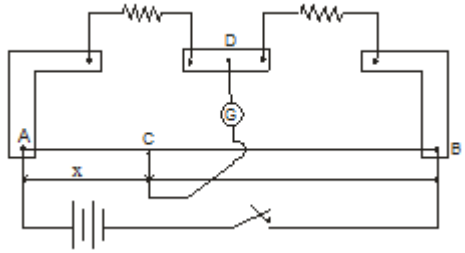
Q7. Find current in each resistor of the electrical circuit shown below . The internal resistance of the cells is negligible. (3)



Q8.(i) Resistance of a wire is 34 kΩ+_5 %.Write the order of colored rings representing the given resistance.
(ii) If ammeter shows a reading of 10A and voltmeter having internal resistance 3000 Ω measures a voltage of 200V, find resistance R . (3)



Q9. (i) If a copper wire is stretched to make it .2% longer. Find the percentage change in the resistance (ii) The arrangement shown below is of the meter bridge experiment. Here AC=x corresponds to the null deflection in the galvanometer. What will be the value of AC if the radius of the wire AB is doubled?



Q10 (i) .The potential difference across a cell is 1.8 V when a current of .5 A is drawn from it. The PD falls to 1.6 V volt when a current of 1.0 A is drawn .Find the EMF and internal resistance of the cell.

(ii) What is the resistance of a 1000W 120 V toaster? (3)