GIRLS' HIGH SCHOOL AND COLLEGE, PRAYAGRAJ

2020-2021

CLASS – 12 A & B

PHYSICS

ASSIGNMENT – 03

Chaptþ : ELECTRIC RESISTANCE AND OHM'S LAW

INSTRUCTIONS : Parents please ensure that your ward/child watches the video instructions for the assignment by clicking on the link related to two videos

Vid 1: https://youtu.be/Yg2gk1lESpo

Vid 2: https://youtu.be/z3kETFNXBLM

She is also expected to revise the chapter from the prescribed book – ISC Physics Class XII, Part-1

By - Raj Kumar, G. L. Mittal and Kapil Mittal

Published by – NAGEEN   PRAKASHAN Pvt. Ltd.

It is expected from the students that apart from watching the video repeatedly they should learn the subject matter from their book as well. It is advisable that they start their assignment only when they are thorough with their chapter.

The assignment is to be downloaded and completed and filed/pasted in the subject file or register and kept ready for submission. The day, date and procedure of submission shall be notified later.

The students should, apart from watching the topics discussed in the video, also refer to the following topics :

- Ohm's Law (page 196)
- Experimental verification of Ohm's Law (Page 197)
- Exceptions of Ohm's Law (Page 197)
- Effect of Temperature on Resistivity (or Resistance) (Page 201)
- Illumination of electric bulbs in parallel and in series (Page 208)

Now answer the following questions :

Q1) Do Q-2 found on Page 240 in your prescribed course book.

Q 2) Define current density and give its unit and dimensional formula.

Q 3) Define mobility and show how is it related to current.

Q 4) Show that for a conductor $j = nev_d$ where 'j' is current density , 'n' is free electron density and 'v_d' is drift velocity.

Q 5) Show that under constant physical conditions $v \propto i$.

Q 6) What do you mean by ohmic and non-ohmic resistances?

Q 7) Give the expression for resistance of a conductor of in terms of its material and dimensional constants and hence state the factors on which it depends and how including absolute temperature of the conductor.

Q 8) Do Q-13 found on Page 240 in your prescribed course book.

Q 9) Do Q-19 found on Page 241 in your prescribed course book.

Q 10) Give the colour coding of the resistor having resistance $(65 \times 10^3).\Omega \pm 20$ %.

Q 11) Do Q-30 found on Page 234 in your prescribed course book.

Q 12) Do Q-40 found on Page 241 in your prescribed course book.

Q 13) Do Q-48 found on Page 242 in your prescribed course book.

Q 14) Do Q-52 found on Page 242 in your prescribed course book.

END