OPTIMUM
INTERNATIONAL SCHOOL

Class-X

Physics **Date:-23/04/2020**

Chapter-12 (Electricity)

- Watch the video of science chapter-12 (Electricity), Part-6 from **Optimum Online E-Learning Platform**
- Answer the following questions
  1. What do you mean by potential difference?
  2. Define 1 volt.
  3. What is voltmeter?

- Answers of the previous day homework
  1. How much charge is there on one electron?

     Answer-

     There is 1.6×10^{-19} C charge on an electron, and the charge is negative.

  2. Why metals are good conductors of electricity?

     Answer-

     Metals are good conductors because the outer electrons are very loosely bound to the nucleus, therefore, at room temperature outer electrons can move freely.

3. If 1 A current is flowing through a conductor, then calculate the number of electrons crossing per second through the cross-section of the conductor.

Answer-

Let n electrons are crossing per second.

Then, the total charge crossing per second is

$$= n \times e$$

Therefore current is

$$I = n \times e$$

This implies,

$$1 = n \times 1.6 \times 10^{-19}$$

This gives,

$$n = \frac{\quad}{\quad}$$

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$$n = \frac{\quad}{\quad}$$

$$n = 6.25 \times 10^{18}$$

Hence 6.25×10^{18} electrons are crossing per second through the cross-section of the conductor.