OPTIMUM
INTERNATIONAL SCHOOL

Class-X

Physics **Date:-20/04/2020**

Chapter-12 (Electricity)

- Watch the video of science Chapter-12 (Electricity), Part-5 from **Optimum Online E-Learning Platform**
- Answer the following question
  1. How much charge is there on one electron?
  2. Why metals are good conductors of electricity?
  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

- Answers of the previous day homework questions

1. Define 1 Ampere current.

   Answer-

   $$1 \text{ Ampere} = \frac{1 \text{ Coulomb}}{1 \text{ second}}$$

   $1A = 1C/s$

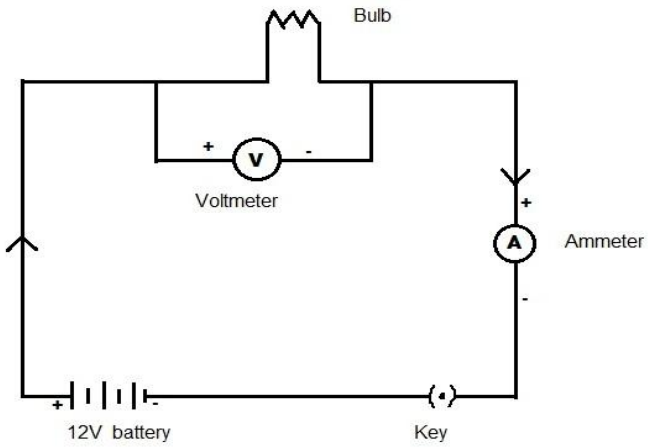
   Therefore, if 1C charge is flowing per second through a conductor, then the current is 1A

2. What is S.I unit of Current?

   Answer- Ampere

3. Draw a neat circuit diagram consisting a 12V battery, an electric bulb, key, and ammeter. Also connect a voltmeter across the electric bulb

Answer-



4. A current of 2 ampere is flowing through a circuit. Calculate the total charge that flows through the circuit in 10 minutes

Answer-

It is given that,

current, I = 2A

time, t = 10×60s

t = 600s

We know that,

$$I = \frac{Q}{t}$$

$$Q = I \times t$$

$$Q = 2 \times 600 \text{ C}$$

$$Q = 1200 \text{ C}$$

Therefore, total charge that flows through the circuit is 1200 C.

5. If 5 coulomb charge flows through a circuit in 10 minutes, then what is the magnitude of current flowing through the circuit

Answer-

It is given that,

Q = 5 C

t = 10×60 s

We know that,

Current, $I = \frac{Q}{t}$

$$I = \frac{5\ C}{600\ s}$$

I = 0.00833 A

I = 8.33 mA

Hence, the current flowing through the circuit is approximately 8.33 milli-ampere.