KALPAVRUKSHA MODEL SCHOOL

Answers Online Class Assignment-4

Class: VII **Sub: Physics** **Date: 13 .9.2021**

Topic: ELECTRIC CURRENT AND ITS EFFECTS

I. Answers:

1. **Give reasons for the following.**

   A **magnetic needle gets deflected when it is brought close to a current carrying conductor.**

   Ans: A magnetic needle gets deflected when it is brought close to a current carrying conductor. It is because a current carrying conductor behaves like a magnet.

   b. The soft iron strip of an electric bell gets attracted to the electromagnet when the electric bell is switched on.

   Ans: The soft iron strip of an electric bell gets attracted to the electromagnet when the electric bell is switched on. It is due to the electric current that flows to the electromagnet which attracts the soft iron strip.

2. **List five uses of electromagnets.**

   Ans: Electromagnets are used in the following ways:
   a) in cranes to pick the cars in scrap yards
   b) to separate iron from garbage dump
   c) in loud speakers, telephones
   d) in electric motors used in electric fans, washing machines, refrigerators, etc
   e) in electric bells

3. **How does an electric bell work?**

   Ans: When we switch on, electric current flows to the electromagnet. The electromagnet attracts the soft iron. The hammer attached to the strip then hits the gong that causes a ring. When a soft strip is attracted to electromagnet, it no longer touches the screw. Hence the path breaks. Then the soft strip gets cooled and gains its position.

4. **What is the purpose of using an electromagnet in an electric bell?**

   Ans: An electric bell has an electromagnet that loses its magnetic effect that pulls a strip of iron which makes the hammer hit the gong to ring the bell.
   Step 1: When you push the switch of the bell, an electric current flows to the electromagnet.

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Step 2: The electromagnet attracts the soft iron strip. The hammer attracted to the strip then hits the gong, making it ring.
Step 3: When the soft iron strip gets attracted to the electromagnet, it no longer touches the screw and hence the circuit is broken. This turns off the electromagnet and it can no longer attract the soft iron strip. The soft iron strip returns to its initial position, touching the screw. This results in the circuit being complete and the current flows again.

5. **What is a compass needle? How can you detect the presence of a magnet using a compass needle?**
   Ans: A magnetized pointer (usually marked on the North end) within a compass, free to align itself with the Earth's magnetic field. The deflection of compass needle here shows that the current-carrying wire placed above it behaving like a magnet and producing a magnetic field around it. It is the magnetism produced by current carrying wire which is exerting a force on the compass needle and deflecting it from its usual north-south position.

6. **How can an electric current be used to make magnets?**
   Ans: By simply wrapping wire that has an electrical current running through it around a nail, you can make an electromagnet. When the electric current moves through a wire, it makes a magnetic field and attracts the pins If you coil the wire around and around, it will make the magnetic force stronger, but it will still be pretty weak.