Provincial Educational Department – Sabaragamuwa – Weekly School

Subject - Science

Week –September 27- October 10

Grade - 11

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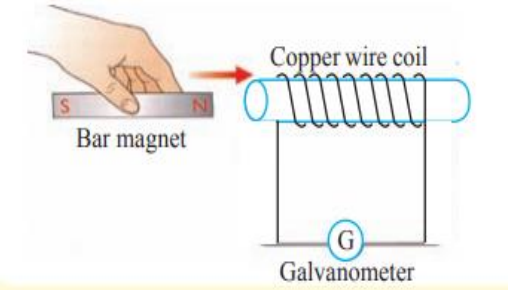
Electromagnetic Induction

The emergence of electromotive force when a conductor moving in a magnetic field and when a conductor staying still in a changing magnetic field is known as electromagnetic induction.

1. Who first introduced this process? ……
2. What was the rule he put forward? ……

Demonstrating the electromagnetic induction



- The figure shows a coil of copper wire wrapped around a thread tube and attached to a middle zero galvanometer in the both ends.
- Indicate that the deflection of the galvanometer occurs or not at the following points.
  1. When the magnet is inserted into the coil. ……
  2. When the magnet is removed from the coil. ……
  3. When the magnet is stationary in the coil. ……
- Write the deflection of the galvanometer when the magnet is stationary again and the coil is moving.
  1. When the coil is brought on to the magnet. ……
  2. When the coil is removed from the magnet. ……
  3. Summarize the conclusion that can be drawn from the above activity.

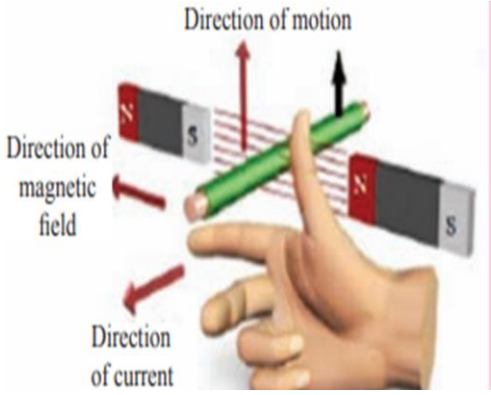
     ……..
  4. What can you say about the deflection of the galvanometer, if the speed of motion of the coil or magnet is increased?

     ……

According to the above facts, the movement of a magnet or coil causes the galvanometer to deflect. This is a result of the emergence of an electromotive force. We introduce it as the induced electromotive force.

1. ……
2. ……
3. ……

Fleming's right hand law

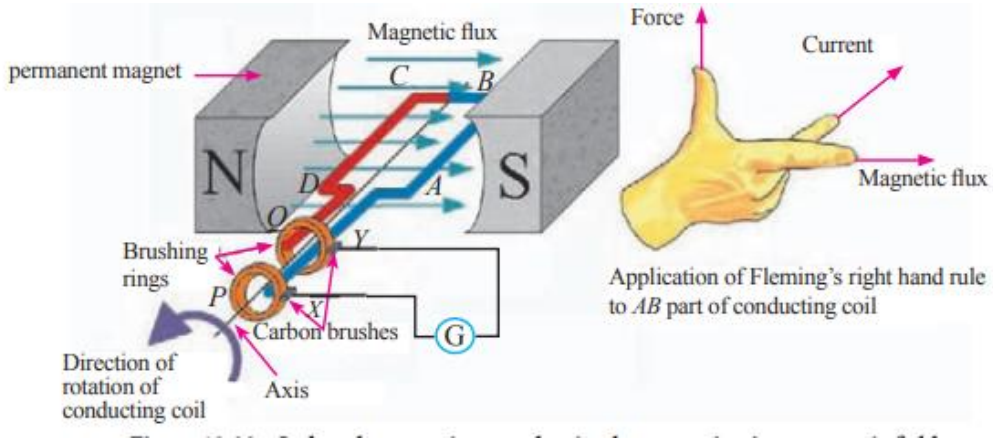


According to the diagram, write down the Fleming's right hand law.

……
……
……
……
……
……

Occasions where electromagnetic induction is being involved

1. Alternating current dynamo



2. Moving coil magnetic microphone

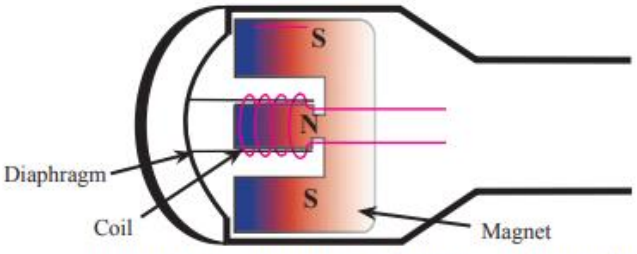
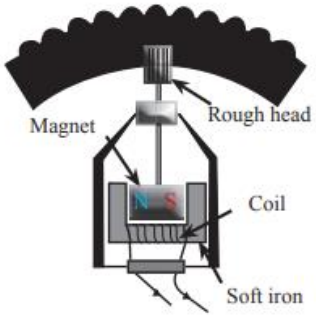


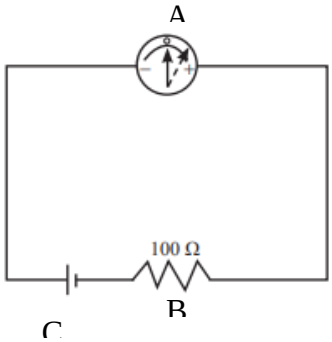
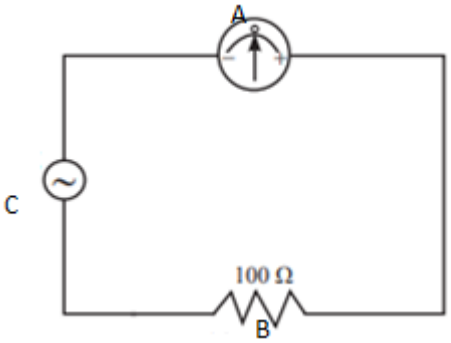
Figure 13.30 – Cross section of a moving coil microphone

3. Bicycle dynamo



Observe the above situations carefully and fill in the blanks below.

…….. moves in the magnetic field of alternating current dynamo and moving coil magnetic microphone. But bicycle dynamo moves in the …… In each case, the force emerged is the …… That induced electromotive force increases and produce a ……. current.

Direct current	Alternating current
	
1. Name A, B, C in this circuit A - …… B - …… C - ……..	1. Name A, B, C in this circuit A - …… B - …… C - ……
2. What current is supplied by C? ……	2.What is the difference between circuit 1 and circuit 2
3. What is the purpose of attaching device B to this circuit?	3. Draw a rough sketch of the graph between the current flowing through the circuit and mark the axis.
4. Draw a rough sketch of a graph between the current flowing through the circuit and time and mark the axis.	4. Write the difference between the two graphs.