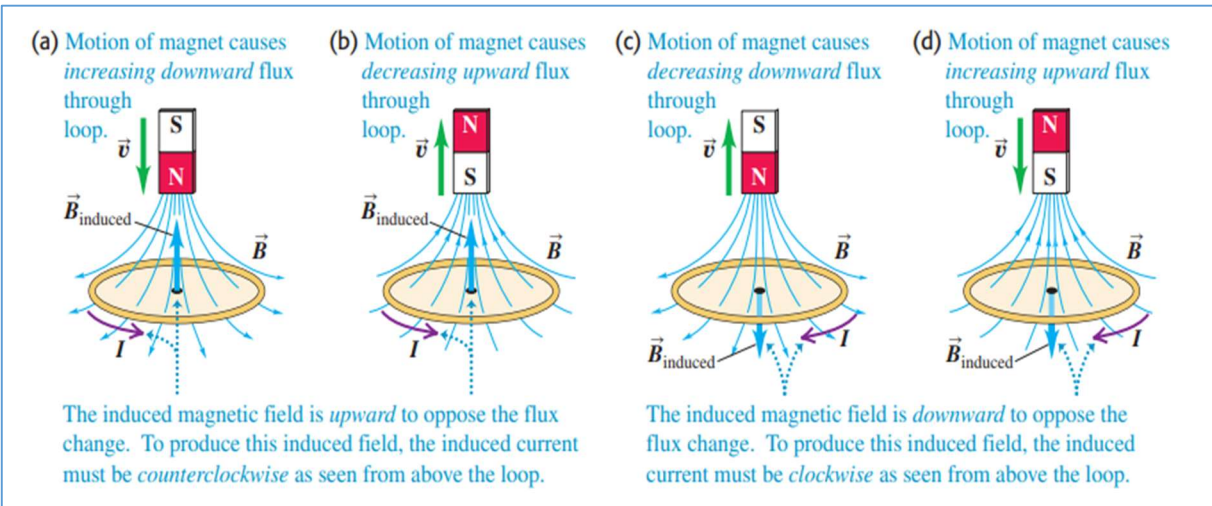


Lenz Law and Direction of Induced current:

- Lenz's law states that, "the direction of induced current is such that it always opposes the cause which produced it."
- The induced emf (current) has a direction such that the magnetic field due to this current opposes the cause (change in magnetic flux) that induces the current.
- The cause can be changing the flux through a stationary circuit due to varying field, changing flux due to motion of conductors, or both.

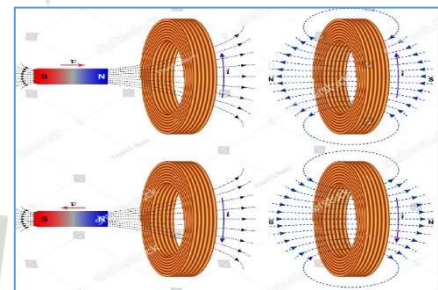
Figure is for understanding: no need to draw on your copy



Lenz's law is consistent with the principle of conservation of energy:

- Lenz's law obeys law of conservation of energy.
- Mechanical energy is converted into electrical energy.

From the definition of Lenz's law, we know that the induced current is always opposed by the cause that produces it. Therefore, there is extra work done against the opposing force. The work done against the opposing force results in the change in the magnetic flux and hence the current is induced. The extra work done is known as electrical energy, and hence the law of conservation of energy is satisfied.



Fleming Right Hand Rule:

This rule is used to determine the direction of induced emf/current especially in a generator.

If the thumb, the fore finger and the middle finger of right hand are extended mutually perpendicular to each other such that, the thumb points in the direction of Motion and the First finger points in the direction of Field then, the Second finger points in the direction of induced Current.

