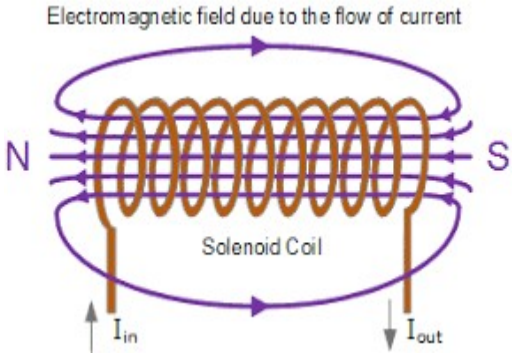
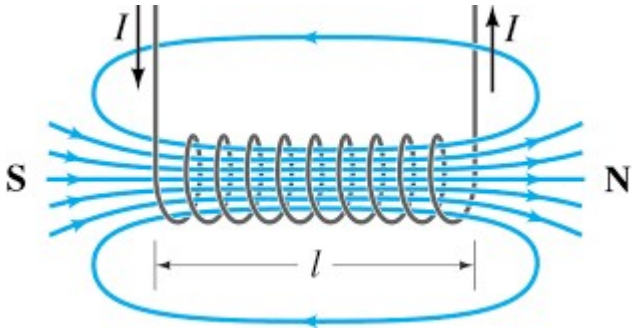
Physics Class Notes

Solenoid

A solenoid is an insulated wire wound in the shape of a helix. Such coiled conductors are used to make use of the magnetic effect of electricity.

When current passes through the solenoid it will act as a magnet. The end of the solenoid at which current flows in the clockwise direction will be the South Pole and the end at which current flows in the anticlockwise direction will be the North Pole.



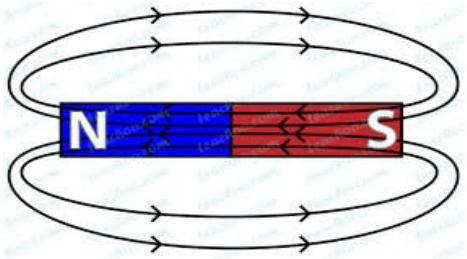


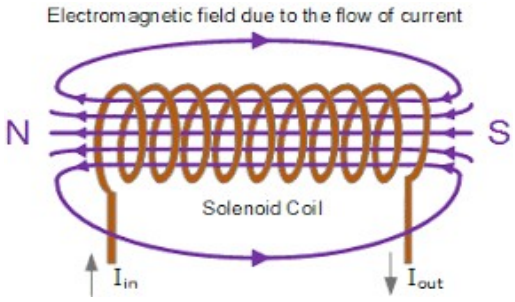
The strength of magnetic field of a current carrying solenoid depends on

i. Intensity of Electric Current.
ii. Nature of the core of the solenoid.
iii. Number of turns per unit length.

Solenoid is a temporary magnet. Its polarity and strength can be altered.

Depicted below are the lines of force formed around a solenoid carrying current and a bar magnet.





Both are identical.

Bar Magnet	Solenoid
The magnetism is permanent	The magnetism is temporary
Polarity is permanent	Polarity changed when the direction of flow of current changed.

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