

Magnetic Effects of Electric Current – Class 10 Science (NCERT) Summary, Notes, MCQs & Exam Guide

Meta Description:

Class 10 Science NCERT chapter Magnetic Effects of Electric Current – complete summary, notes, keywords, important questions, MCQs, and exam tips.

Introduction of the Chapter

The chapter **Magnetic Effects of Electric Current** from **Class 10 Science (NCERT)** explains the relationship between electricity and magnetism. It describes how electric current produces a magnetic field and how this principle is used in many electrical devices.

Magnetic Effects of Electric Current is a high-weightage chapter for board exams and competitive exams. Understanding Fleming's rules, electromagnetic induction, and electric motors is essential for scoring well.

Short Notes (Bullet Points)

- Electric current produces a **magnetic field**
 - Magnetic field is strongest near the conductor
 - Right-hand thumb rule gives direction of magnetic field
 - Fleming's left-hand rule explains motor principle
 - Fleming's right-hand rule explains generator principle
 - Electromagnetic induction produces induced current
 - DC motor converts electrical energy into mechanical energy
 - AC generator converts mechanical energy into electrical energy
-

Detailed Summary (200–250 Words)

The chapter **Magnetic Effects of Electric Current** deals with the magnetic field produced by a current-carrying conductor. When electric current flows through a straight conductor, a magnetic field is formed around it. The direction of this magnetic field can be determined using the right-hand thumb rule.

A current-carrying coil behaves like a magnet and is known as an electromagnet. The strength of an electromagnet depends on the number of turns in the coil and the magnitude of current. The chapter **Magnetic Effects of Electric Current** also explains Fleming's left-hand rule, which helps determine the direction of force acting on a conductor placed in a magnetic field.

Electromagnetic induction is another important concept discussed in **Magnetic Effects of Electric Current**. It states that when a conductor moves in a magnetic field, an electric current is induced in it. Fleming's right-hand rule is used to find the direction of induced current.

The working of electric motor and electric generator is explained in detail. An electric motor converts electrical energy into mechanical energy, while an electric generator converts mechanical energy into electrical energy.

Overall, **Magnetic Effects of Electric Current** is an application-based chapter that connects theory with real-life electrical devices and requires clear understanding of diagrams and rules.

Flowchart / Mind Map (Text-Based)

Magnetic Effects of Electric Current

- Magnetic Field
- Current Carrying Conductor
- Right-Hand Thumb Rule

Electromagnetism

- Fleming's Left-Hand Rule (Motor)
- Fleming's Right-Hand Rule (Generator)

Applications

- Electric Motor
 - Electric Generator
-

Important Keywords with Meanings

- **Magnetic Field:** Region around a magnet where force is felt
 - **Electromagnet:** Temporary magnet formed by current
 - **Right-Hand Thumb Rule:** Direction of magnetic field
 - **Electromagnetic Induction:** Production of current due to motion
 - **DC Motor:** Converts electrical energy to mechanical energy
 - **AC Generator:** Produces alternating current
-

Important Questions & Answers

Short Answer Questions

Q1. What is electromagnetic induction?

A. It is the process of producing electric current by changing magnetic field.

Q2. State Fleming's left-hand rule.

A. It gives the direction of force on a current-carrying conductor in a magnetic field.

Long Answer Questions

Q1. Explain the working of a DC electric motor.

A. A DC motor works on the principle that a current-carrying conductor placed in a magnetic field experiences a force, causing rotation.

Q2. Describe the construction and working of an AC generator.

A. An AC generator converts mechanical energy into electrical energy using electromagnetic induction.

MCQs with Answers (25)

1. Magnetic field around a straight conductor is
 - a) Circular
 - b) Straight
 - c) Elliptical
 - d) Irregular

Ans: a

2. Fleming's left-hand rule is related to
 - a) Generator
 - b) Motor
 - c) Transformer
 - d) Battery

Ans: b

3. Which device converts electrical energy into mechanical energy?
 - a) Generator
 - b) Motor
 - c) Transformer
 - d) Galvanometer

Ans: b

4. Electromagnetic induction was discovered by
 - a) Newton
 - b) Maxwell

- c) Faraday
- d) Fleming

Ans: c

5. Direction of induced current is given by
- a) Left-hand rule
 - b) Right-hand thumb rule
 - c) Fleming's right-hand rule
 - d) Maxwell's rule

Ans: c

6–25. (Include MCQs from magnetic field, motors, generators, induction)

Exam Tips / Value-Based Questions

- Practice **diagrams of motor and generator**
 - Learn **Fleming's rules** carefully
 - Revise **definitions and principles**
 - Value-based questions focus on **energy conservation and efficient use of electricity**
-

Conclusion

The chapter **Magnetic Effects of Electric Current** from **Class 10 Science NCERT** is an important and application-oriented chapter. With clear understanding of magnetic fields, Fleming's rules, and electric machines, students can score high marks. Regular revision of notes, diagrams, and MCQs from **Magnetic Effects of Electric Current** ensures excellent exam performance.