

Current Electricity and Magnetism

Chapter 4: Current Electricity and Magnetism · Topic 1

Key Concept

Electric current is the flow of electric charge through a conductor, measured in amperes, driven by a potential difference (voltage).

A current-carrying conductor creates a magnetic field around it, a phenomenon called electromagnetism, discovered by Oersted.

This relationship is used in electromagnets, where current through a coiled wire creates a controllable magnetic field, often strengthened with an iron core.

The connection between electricity and magnetism is fundamental to many devices, including electric motors, generators, and speakers.

Quick Revision Notes

- Electric current: flow of charge, measured in amperes.
- Driven by potential difference (voltage).
- Current-carrying conductor creates magnetic field.
- This is electromagnetism, discovered by Oersted.
- Electromagnets: current through coiled wire.
- Iron core strengthens the magnetic field.
- This connection is used in motors, generators.
- Also used in speakers and other devices.

Practice Questions

- 1 Discuss what drives electric current flow.
- 2 Research Oersted's discovery of electromagnetism.
- 3 Discuss how an electromagnet works.
- 4 Research an application of electromagnets.
- 5 Discuss the connection between electricity and magnetism.
- 6 Explain electromagnetism in your own words.