

AQA Physics GCSE

4.7.3 - Induced Potential, Transformers and the National Grid

(Physics Only)

(Higher)

Flashcards

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What happens when an electrical conductor moves relative to a magnetic field? (Higher)



What happens when an electrical conductor moves relative to a magnetic field? (**Higher**)

A potential difference is induced across the ends of the conductor.



What happens to an electrical conductor when there is a change to the magnetic field that it is placed in? **(Higher)**



What happens to an electrical conductor when there is a change to the magnetic field that it is placed in?

(Higher)

A potential difference is induced across the ends of the conductor.



What is the requirement for an induced potential difference to cause a current flow? (Higher)



What is the requirement for an induced potential difference to cause a current flow? (**Higher**)

The conductor must form a closed loop or be part of a complete circuit.



What can be said about the direction of the magnetic field produced by an induced current? (Higher)



What can be said about the direction of the magnetic field produced by an induced current? (Higher)

- The direction of the field is such that it opposes the change that induced the current
- This change is either the movement of the conductor or a change to the field



What are two ways that the generator effect is used to generate different types of current? (Higher)



What are two ways that the generator effect is used to generate different types of current? (Higher)

- In an alternator to produce alternating-current
- In a dynamo to produce direct-current



What electromagnetic effect does a
microphone take advantage of and how?
(Higher)



What electromagnetic effect does a microphone take advantage of and how? (Higher)

- The generator effect
- It converts the pressure variations in sound waves into alternating current in a circuit



Describe the makeup of a basic transformer. (Higher)



Describe the makeup of a basic transformer.
(Higher)

A primary coil and a secondary coil of wire wrapped around an iron core.



Why is iron used as the core for a transformer? (Higher)



Why is iron used as the core for a transformer?
(Higher)

It is easily magnetised.



Explain how a transformer works.
(Higher)



Explain how a transformer works. (Higher)

- An alternating current flows through the primary coil
- This induces a changing magnetic field in the core
- This changing magnetic induces a current to flow in the secondary coil



Why must the current flowing through the primary coil of a transformer be alternating? (Higher)



Why must the current flowing through the primary coil of a transformer be alternating? (Higher)

- For current to be induced in the secondary coil, the magnetic field in the core must be continuously changing
- For the magnetic field to be changing, the current in the primary coil must be alternating



What can be said about the electrical power input and output of a 100% efficient transformer? **(Higher)**



What can be said about the electrical power input and output of a 100% efficient transformer? (**Higher**)

The electrical power input is equal to the electrical power output.

