

Definitions and Concepts for Edexcel Physics GCSE

Topic 13: Electromagnetic Induction

*Definitions in **bold** are for higher tier only*

Definitions marked by '' are for separate sciences only*

***Alternator:** A device that makes use of the generator effect to generate alternating current.

***Dynamo:** A device that makes use of the generator effect to generate direct current.

***Generator Effect:** When there is relative motion between an electrical conductor and a magnetic field, a potential difference will be induced across the ends of the conductor. A current will flow if this conductor is part of a complete circuit.

Loudspeaker: A device that converts variations in current into vibrations of a diaphragm to produce corresponding sound waves.

Microphone: A device that converts the pressure variations in sound into corresponding current variations.

Power Cables: Metal wires that are part of the National Grid. Electricity is transported along them at very high voltages to reduce the energy loss and make the transportation more efficient.

Step-Down Transformer: A transformer that has a smaller potential difference in the secondary coil than in the primary coil. This is a result of the secondary coil having fewer turns.

Step-Up Transformer: A transformer that has a larger potential difference in the secondary coil than in the primary coil. This is a result of the secondary coil having more turns.

Transformer: An iron core with a primary and secondary coil of wire wound around opposite ends. Transformers can change the magnitude of an alternating voltage.

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***Turns Ratio:** The number of turns in the primary coil of a transformer over the number of turns in the secondary coil. This is equal to the voltage ratio for a 100% efficient transformer.

Voltage Ratio: The potential difference across the primary coil of a transformer over the potential difference across the secondary coil.

