

WJEC England GCSE Physics

7.4 - Domestic Uses and Safety

Flashcards

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Is mains electricity an a.c supply or a d.c supply? What do each of these stand for?



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What do each of these stand for?

It is an a.c supply

a.c : Alternating Current

d.c : Direct Current



Define alternating current and direct current.



Define alternating current and direct current.

- Alternating current: Current that continuously changes direction at a specific frequency.
- Direct current: One directional current flow.



What is the frequency and voltage of the UK mains electricity supply?



What is the frequency and voltage of the UK mains electricity supply?

- Frequency: 50 Hz
- Voltage: 230V



Explain when the Earth wire of an appliance does and does not carry a current.



Explain when the Earth wire does and doesn't carry a current.

- Under normal circumstances, no current flows through the Earth wire.
- If a fault occurs in the appliance (such as a surge or the casing becoming live), current will flow.



What potential is the neutral wire at?



What potential is the neutral wire at?

0 Volts



State the potential difference between the live and earth wires.



State the potential difference between the live and earth wires.

230 Volts



What is the purpose of the neutral wire?



What is the purpose of the neutral wire?

To complete the circuit by connecting the appliance back to the mains supply.



For metal appliances, where is the Earth wire connected to? Why?



For metal appliances, where is the Earth wire connected to? Why?

- Earth wire is connected to the metal casing of the appliance.
- If live wire becomes loose and touches the casing, the current will flow through the Earth wire, preventing electrocution.



How does a fuse wire stop the device from getting damaged?



How does a fuse wire stop the device from getting damaged?

When the current becomes too high the fuse wire will melt and break, therefore stopping current from flowing to the appliance and preventing damage.



Why is it important to connect a fuse or switch to the live wire?



Why is it important to connect a fuse or switch to the live wire?

When the switch is turned off, or when the fuse breaks, it will break the circuit and stop current running through the wire. This provides a method to stop current flowing into the appliance.



Why is it dangerous to have a connection between the earth wire and the live wire?



Why is it dangerous to have a connection between the earth wires and the live wire?

It can cause an electric shock and result in a current surge.

