

Edexcel GCSE Physics

Topic 10.0-10.11 - Series and Parallel Circuits

Flashcards

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What are the two ways that a component can be connected in a circuit?



What are the two ways that a component can be connected in a circuit?

1. Series (same loop)
2. Parallel (adjacent loop)



Voltage is also known as



Voltage is also known as

Potential difference



How does the potential difference across two components vary when connected in series and parallel?



How does the potential difference across two components vary when connected in series and parallel?

- In a series circuit the total P.D is shared between each component
- In a parallel circuit the P.D across each component is the same



If two resistors are connected in parallel,
what can be said about their combined
total resistance?



If two resistors are connected in parallel, what can be said about their combined total resistance?

Their total resistance is **less** than the smallest of the two individual resistances.



If two resistors are connected in series,
what can be said about their total
resistance?



If two resistors are connected in series, what can be said about their total resistance?

Their total combined resistance is equal to the **sum** of the two individual resistances.



Where must a voltmeter be placed in a circuit?



Where must a voltmeter be placed in a circuit?

In parallel with the component that is being measured.



Give an equation relating potential difference with energy transferred and charge.



Give an equation relating potential difference with energy transferred and charge.

Potential difference (V) = energy transferred (J) / charge (C)

$$V = E / Q$$



A volt can also be described as ...



A volt can also be described as a ...

Joule per coulomb



What is an electric current?



What is an electric current?

The rate of flow of charge.



State the equation linking charge, current and time. Give the units for the quantities involved.



State the equation linking charge, current and time.
Give the units for the quantities involved.

$$Q = I t$$

Charge (Coulombs), Current (Amperes),
Time (Seconds)



What can be said about the value of current at any point in a single closed loop?



What can be said about the value of current at any point in a single closed loop?

Current is the same at all points in a closed loop.



What two factors does the current in a circuit depend on?



What two factors does the current in a circuit depend on?

1. Potential Difference (V)
2. Resistance (R)



What equation should be used to calculate potential difference if current and resistance are known? State the units for all 3 quantities.



What equation should be used to calculate potential difference if current and resistance are known? State the units for all 3 quantities.

$$V = IR$$

Potential Difference (V), Current (A),
Resistance (Ω)



What is an ammeter and where must it be connected in a circuit?



What is an ammeter and where must it be connected in a circuit?

An ammeter measures current. It is placed in series with the component it is required to measured.



What happens when current reaches a junction in a circuit?



What happens when current reaches a junction in a circuit?

Current is conserved; the total current remains the same and is split between the two branches.

