

OCR (B) Physics GCSE

Topic 3.3 - How do series and parallel circuits work?

Flashcards

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Define potential difference



Define potential difference

The work done per unit charge.

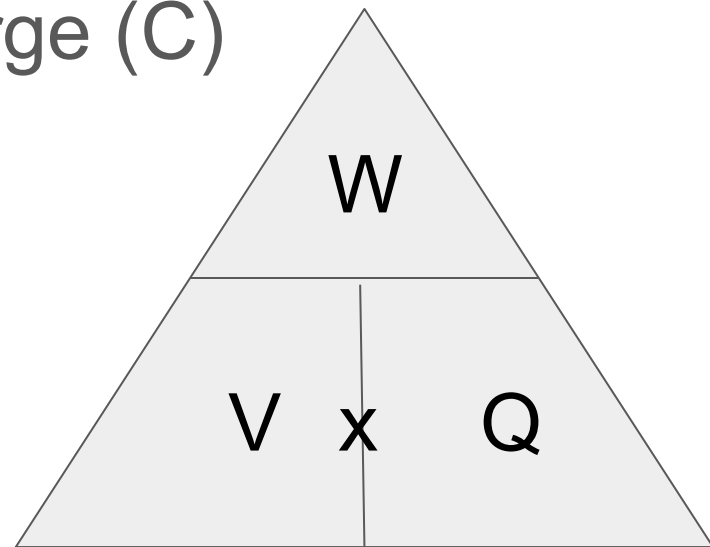


Give the equation linking potential difference and work done, with all SI units



Give the equation linking potential difference and work done

$$\text{p.d. (V)} = \text{work done (J)} \div \text{charge (C)}$$



What is a series circuit?



What is a series circuit?

A series circuit is one in which the same charge passes through all components, so the current through each component is the same.



What is a parallel circuit?



What is a parallel circuit?

A circuit in which the charge is split between branches.



Describe the current across a series circuit



Describe the current across a series circuit

Current is the same at all points in a series circuit.



Describe potential difference in a series circuit



Describe potential difference in a series circuit

Potential difference is split between components, according to the ratio of their resistances.



Describe current across a parallel circuit



Describe current across a parallel circuit

Current is split between the branches of the circuit.



Describe potential difference across a parallel circuit



Describe the potential difference across a parallel circuit

Each branch has a potential difference equal to the potential difference of the supply.



What is total resistance in a series circuit?



What is total resistance in a series circuit?

The sum of the resistances of each component.



What is the total resistance in a parallel circuit?



What is the total resistance in a parallel circuit?

The total resistance will be lower than that of the branch with the lowest resistance. This is because the charge is split; decreasing the charge to each component decreases its resistance.



What is a sensing circuit?



What is a sensing circuit?

A circuit in which resistance is dependent on an environmental factor such as light or temperature, so therefore can be used to monitor environmental changes.



How can sensing circuits be constructed?



How can sensing circuits be constructed?

Using thermistors or LDRs.

