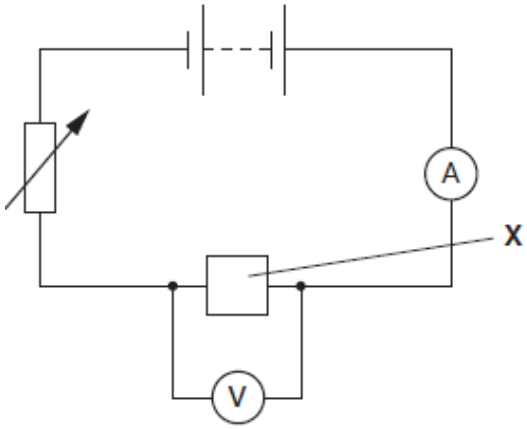
OCR
Oxford Cambridge and RSA

GCSE Physics A (Gateway)

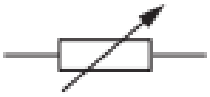
J249/01 Physics A P1-P4 and P9 (Foundation Tier)

Question Set 7

1 **(a)** A student builds a circuit to investigate the resistance of component **X**.



(i) What is the name of this component?

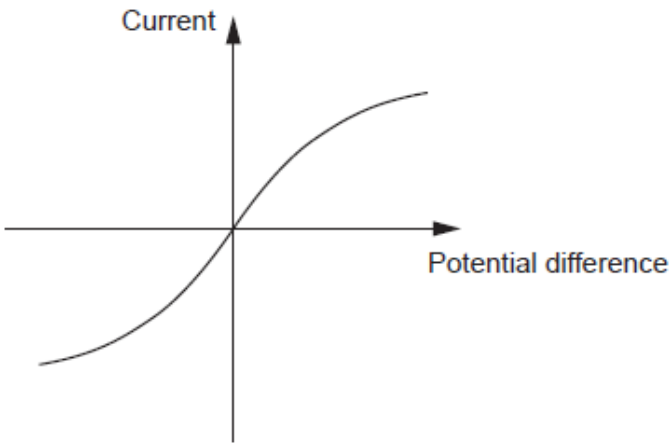


[1]

(ii) Why is this component needed in this circuit? **[1]**

(b) The student uses the circuit to take current and potential difference readings.

The student plots a graph of her results.



(i) Look at the graph.

What is component **X** in the circuit?

[1]

(ii) The resistance of component **X** varies as the potential difference changes.

Describe **how** the graph shows this and explain **why** this happens.

[3]

(c) Component **X** has a resistance of 16 Ω when a current of 0.25A flows.

(i) Calculate the potential difference across component **X**.

Use the equation: Potential difference = Current × Resistance

Answer = ... V **[2]**

(ii) Calculate the power of component **X** when a current of 0.25A flows.

Answer = ... W **[3]**

Total Marks for Question Set 7: 11

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