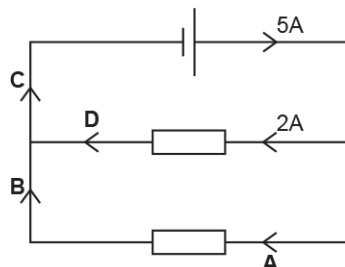


Static and Charge

1. This is a circuit.



Which letter **A**, **B**, **C** or **D** shows the part of the circuit that carries a current of 2 A?

Your answer

[1]

2. Static electricity can be produced when two materials are rubbed together.

Which two types of material could cause static electricity to be produced?

- A** Two insulators
- B** Two conductors
- C** One insulator and one conductor
- D** A metal and a non-metal

Your answer

[1]

3. Calculate the charge flow when a current of 20 mA flows for 2000 s.

Use the equation: charge flow = current \times time

- A** 40 C
- B** 100 C
- C** 40 000 C
- D** 100 000 C

Your answer

[1]

4. What conditions are needed for charge to flow?

- A A source of potential difference and two lamps.
- B A complete circuit and two lamps.
- C A complete circuit and a source of potential difference.
- D A complete circuit and a source of resistance.

Your answer

[1]

5.

i. A student has completed her homework on static electricity.

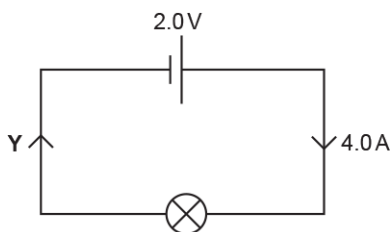
Look at her homework.

- 1 Static charge only builds up on insulators.
- 2 Opposite charges attract.
- 3 Like charges repel.
- 4 Only positive charges can move.

Identify the student's mistake and correct it.

[2]

ii. When charges move, a current flows.



Write down the current flowing at point Y in the circuit.

Answer = A [1]

6. Calculate the **charge** that flows when a current of 2.5 A flows for 30 seconds.

Charge = C [3]

7(a). A student investigates static electricity using a plastic ruler.

i. Explain in terms of electrons why the plastic ruler is not normally charged.

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.....

..... [2]

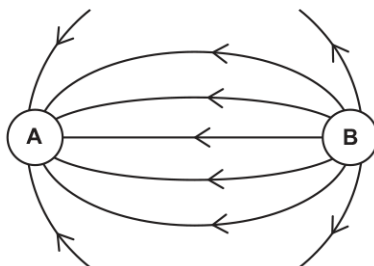
ii. Explain in terms of electrons why the ruler becomes charged when the student rubs it with a cloth.

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.....

..... [2]

(b). The diagram shows the electric field between two charges, **A** and **B**.



i. State the charges of **A** and **B**.

Use the diagram to explain your answer.

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..... [3]

- ii. Describe **one** similarity between the electric field line diagram and a magnetic field line diagram.

----- [2]

END OF QUESTION PAPER