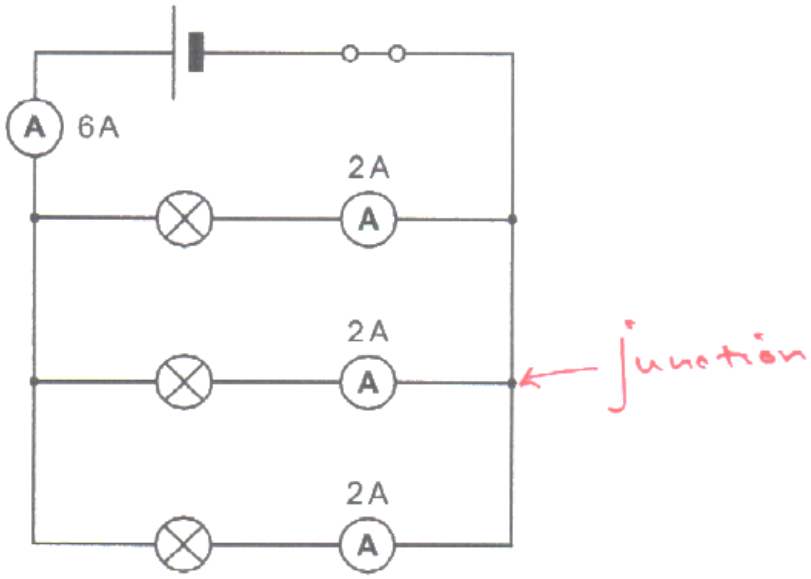
Electricity – Checkpoint Sec 1 Physics

1. No.10

Jamila connects an electrical circuit.



She uses **four** ammeters in the electrical circuit.

There is an ammeter reading next to each ammeter symbol.

(a) (i) What type of electrical circuit is shown in the diagram?

This is a parallel circuit [1]

(ii) Explain what is happening in the electrical circuit.

Use the readings on the ammeters in your answer.

- Current will split at the junctions equally through each 3 lamps.
- Ammeter next to each lamp reads 2A
- So 2A x 3 = 6A [2]

(b) Write down the name of the equipment that measures **voltage**.

Voltmeter [1]

2. No.6

Oliver investigates how the number of lamps in a circuit affects the current.

He connects the lamps in series.

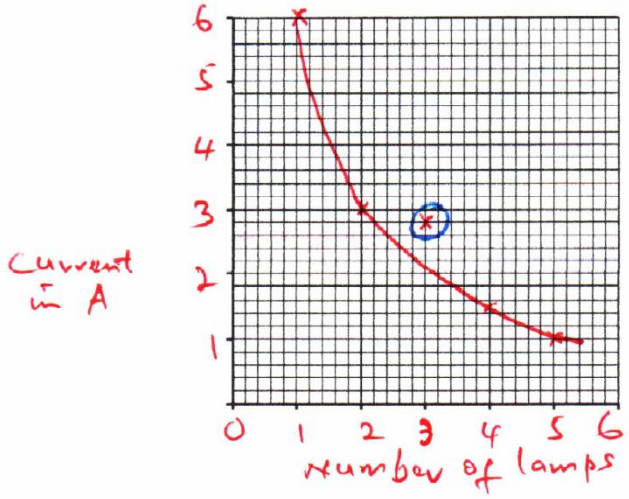
He uses identical lamps.

Oliver writes his results in a table.

number of lamps	current in A
1	6.0
2	3.0
3	2.8
4	1.5
5	1.0

(a) Draw a graph of the results by:

- labelling the number of lamps on the x-axis
- labelling the current on the y-axis
- plotting all the points.



[3]

(b) Complete the graph by:

- putting a circle around the anomalous result
- joining the other points with a smooth curve. [2]

(c) Describe **two** patterns in his results.

1 As the lamps increase the current decreases

2 Relationship is none linear.

[2]

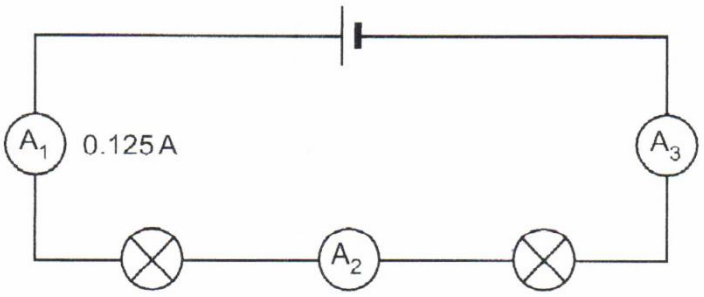
3. No.6

Mia measures the current in different electrical circuits.

(a) Write down the name of the piece of equipment used to measure current.

Ammeter [1]

(b) Mia connects an electrical circuit with one cell and two lamps.



The reading on A_1 is 0.125 A.

Write down the **two** missing readings.

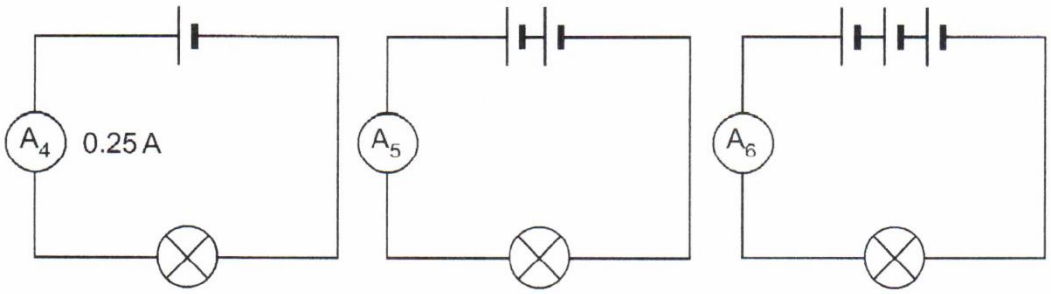
current in series circuit is equal at all points

The reading on A_2 is 0.125 A.

The reading on A_3 is 0.125 A.

[1]

(c) Mia connects **three** more circuits using the same size cells and lamps.



The reading on A_4 is 0.25 A.

Write down the **two** missing readings.

Doubling cells doubles current in circuit.

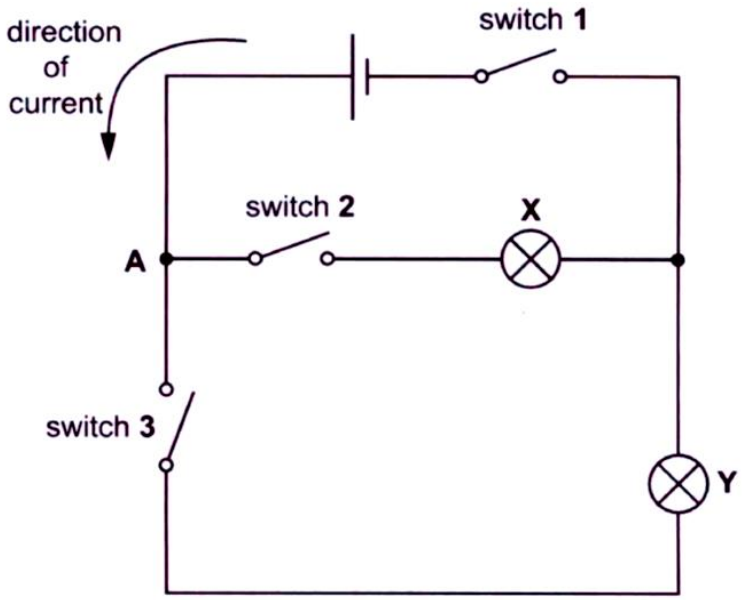
The reading on A_5 is 0.50 A.

The reading on A_6 is 0.75 A.

[2]

4. No.11

Jamila builds this electrical circuit.



(a) What type of electrical circuit is this?

Circle the correct answer.

electrostatic **magnetic** **parallel** **series**

[1]

(b) Jamila wants to turn lamp **X** on but leave lamp **Y** off.

What must she do?

Close switches 1 and 2, while switch 3 is left open. [1]

(c) Jamila wants to turn lamp **Y** on but leave lamp **X** off.

What must she do?

close switches 1 and 3 and open switch 2 [1]

(d) Jamila closes all the switches.

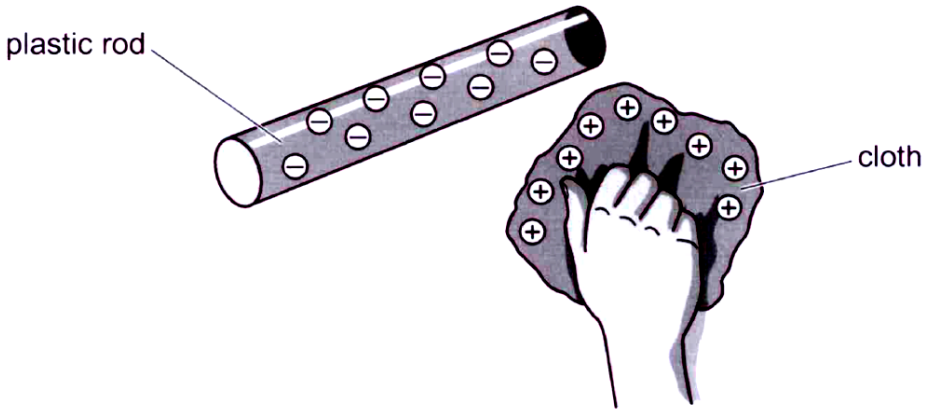
What happens to the current at point **A**?

the current is divided to flow through lamp X and lamp Y [1]

5. No.12

Some objects become electrically charged.

(a) Oliver draws a diagram of two charged objects.



Explain how the objects become charged.

- He rubbed the rod with the cloth.
- Electrons moved from the cloth to the rod.
- So the rod is negatively charged, cloth is positively charged. [2]

(b) Complete the sentences.

Opposite charges attract.

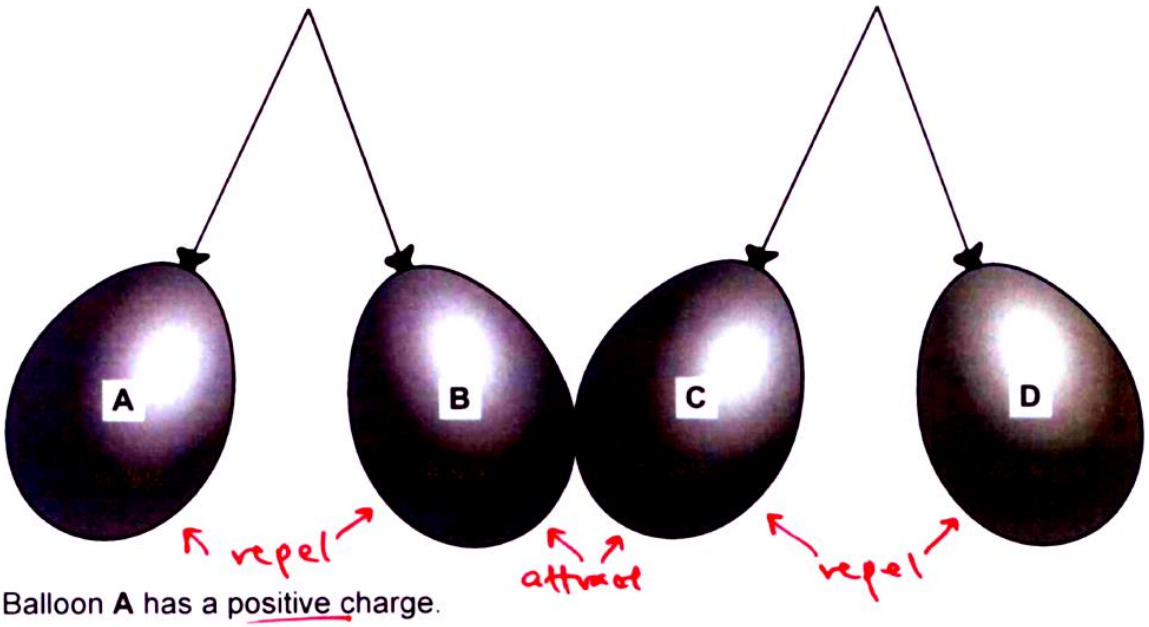
Like charges repel. [1]

tve & -ve → attract.

tve & tve → repel

-ve & -ve → repel.

(c) Oliver puts charged balloons next to each other.



Balloon **A** has a positive charge.

What are the charges on the other balloons?

A is positive.

B is positive.

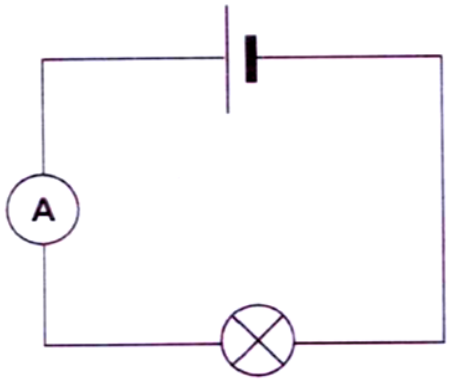
C is negative.

D is negative. [1]

6. /No.15

Aiko wants to measure different quantities in electrical circuits.

(a) She connects this electrical circuit.



Complete the sentences.

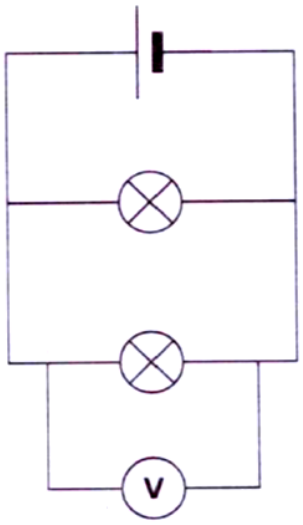
The circuit diagram shows a Series circuit.

The component shown by (A) is an Ammeter.

This component measures Current.

[2]

(b) She connects this electrical circuit.



Complete the sentences.

The circuit diagram shows a parallel circuit.

The component shown by (V) is a voltmeter.

This component measures the voltage across the lamp.

[2]

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