

1 Complete this table.

Symbol	Component
	cell
	ammeter

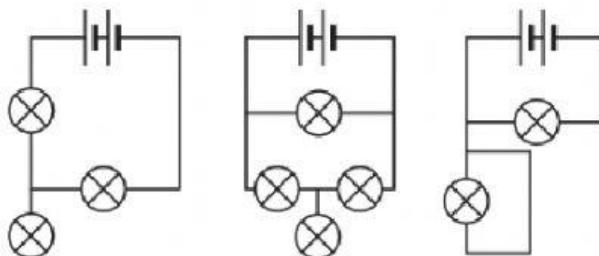
2 This table shows some symbols that are used to draw circuit diagrams. Some names and symbols are missing.

Write the missing names **a** and **b** and draw the missing symbols **c** and **d**.

4 marks

	a
	b
	resistor
	lamp (bulb)
	d

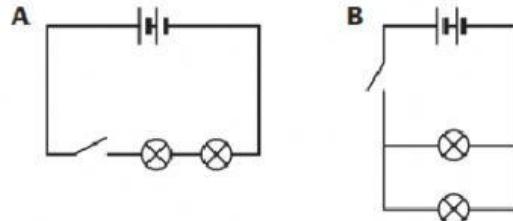
3 Tick the lamps that will light up.



4 a Here are two ways of wiring up a circuit with two lamps. Circuit **A** is called a series circuit.

What is the name given to circuit **B**?

1 mark



b One of the bulbs in this lamp has blown and needs replacing.

i Which circuit, **A** or **B**, shows how the bulbs are wired up?

1 mark

ii Explain how you decided this.

1 mark



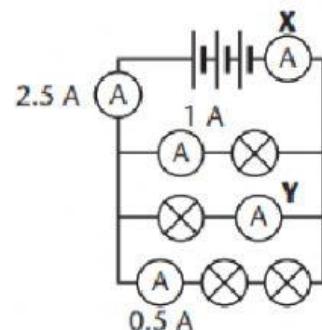
5 Write in the missing reading for each ammeter opposite.

X

Y

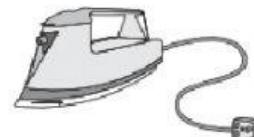
6 Bob has a battery-operated electric toothbrush which has stopped working. List three things for him to check to see what is wrong.

.....
.....
.....



7 a What will happen to the fuse if the current through this iron is too high?

1 mark



b What happens to the flow of electricity in the circuit then?

1 mark

8 When a battery goes flat, what is used up? Circle the correct letter.

A energy B current C voltage D mass

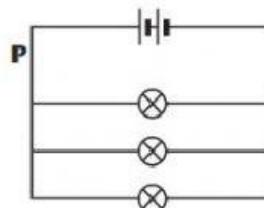
9 a Look at the batteries in the diagram. Which battery stores the most energy?

1 mark



b The lamps in this circuit work on 1.5 V each. Write the letter of the battery that will light the lamps in this circuit.

1 mark



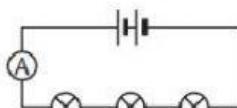
c Pippa has made the parallel circuit shown in b above. As she added each lamp to the circuit, she measured the current at point P using an ammeter. The table shows her results.

What was the ammeter reading when she added the third lamp?

1 mark

Number of lamps	Ammeter reading in A
1	0.48
2	0.96
3	

d Pippa then built this series circuit. The table shows her results as she added each lamp.



i Why does the ammeter reading fall as each lamp is added?

1 mark

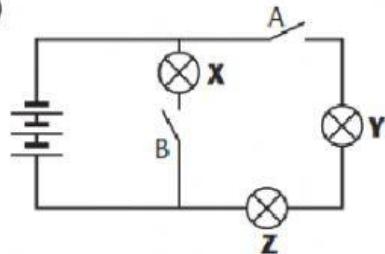
ii What is the effect on the lamps as each one is added?

1 mark

Number of lamps	Ammeter reading in A
1	0.48
2	0.33
3	0.26

10 Look at the circuit opposite. Circle the correct letter(s) each time. Which lamp or lamps will light when:

a only switch A is closed? **X** **Y** **Z**
b only switch B is closed? **X** **Y** **Z**
c switches A and B are closed? **X** **Y** **Z**



11 Complete these sentences to explain how a fuse protects an electrical appliance. Choose from the words below to fill the gaps.

mends
wire
high
low
stops
current
melt
resistance
breaks

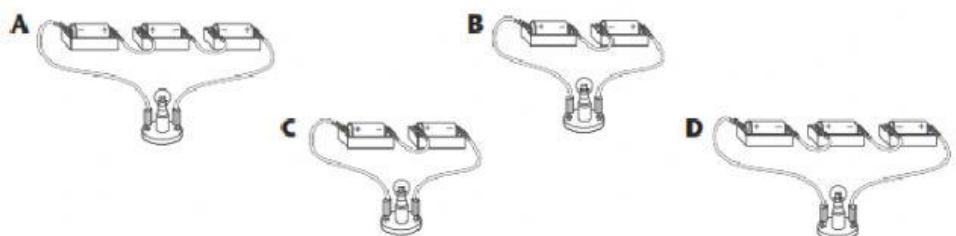
A fuse contains a piece of which has a higher than the rest of the circuit. If the current gets too, the fuse will This the circuit so that the current , protecting you from harm.

12 For a summer party, some friends are putting up a string of lights in the garden. What will happen if a bulb blows:

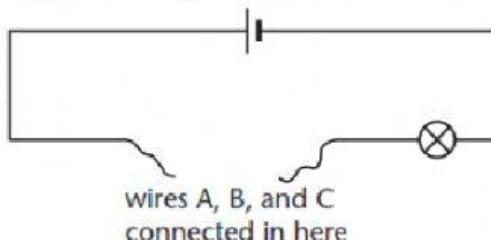
a if the lights are wired in series?
b if the lights are wired in parallel?

13 Which of these arrangements will give the brightest light from the lamp? Circle the correct letter.

A **B** **C** **D**

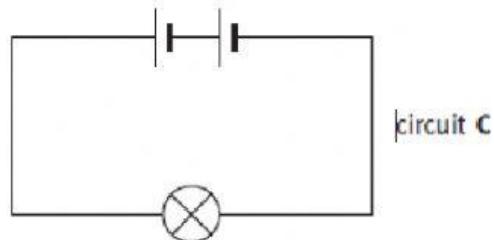
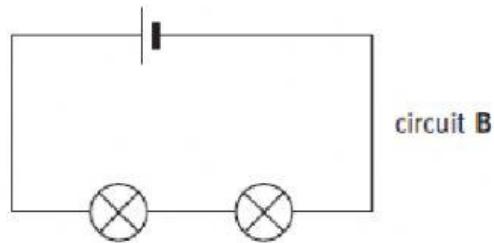
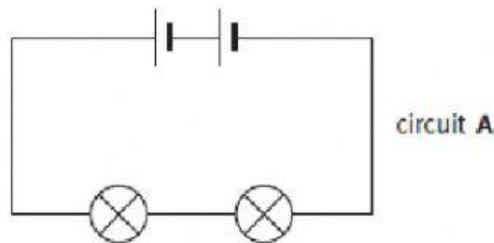


14 Some children are given three different pieces of wire, **A**, **B** and **C**. They connect up a circuit like this. The table shows their results.



Wire	Lamp
A	dim
B	no light
C	bright

a Which piece of wire allows the current to pass through it easily?
b Which piece of wire has the highest resistance?



15 Which circuit will have the smallest current in it? Give the letter.

Explain why this circuit will have the smallest current.

16 Which circuit will have the biggest current in it? Give the letter.

Explain why this circuit will have the biggest current.