7Ja

1 Which of these items is *not* needed to make a working circuit?

A connecting wires

B a switch

C a component such as a bulb

D a cell

2 Which instrument would you use to measure current?

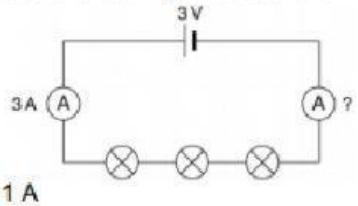
A an ammeter

B a cell

C a motor

D a voltmeter

3 One ammeter in this circuit is reading 3 A. What is the reading on the other ammeter?



A 1 A

B 2 A

C 3 A

D 4 A

4 A light bulb comes on when a switch is pressed. Which statement is the best explanation for why this happens?

A When you press the switch you make a gap in the circuit.

B When you press the switch you close a gap in the circuit.

C The switch is made of metal.

D The switch turns all the bulbs on or off at once.

7Jb

1 An electric current is:

A a source of energy

B a kind of liquid inside the wires

C tiny particles called charges flowing through the wires

D tiny particles called volts flowing through the wires.

2 We need to use models to help us to think about electricity because:

A it makes electricity more fun

B charges are too small to see

C charges are imaginary

D electricity is not real.

3 A central heating system can be used as a model for a circuit. Which of these statements is not true?

A The boiler and pump represent the cell.

B The pipes represent the wires.

C The radiators represent the bulbs.

D The pump represents an ammeter.

4 Which statement describes a way in which the central heating model is *not* like an electric circuit?

A The radiator transfers energy to the surroundings.

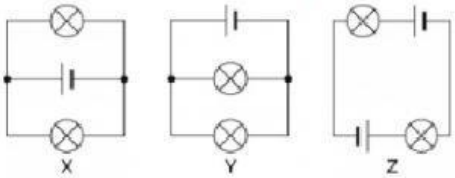
B Water leaks out of the pipes if you make a gap in the pipes.

C The pump pushes the water through the pipes.

D You can put more radiators into a central heating circuit.

7Jc

1 Which of these circuits are parallel circuits?



A X and Y only

B X and Z only

C Y and Z only

D all of them

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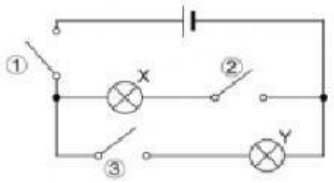
2 Which switches must be pressed to make bulb X come on?



A 1 and 2 only

B 1 and 3 only

C 2 and 3 only

D all three of them

3 Parallel circuits are used for house lights:

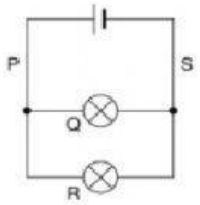
A so they can all be switched on and off together.

B so you know when one breaks, because all the others go off.

C so they use a bigger current.

D so they can all be switched on and off separately.

4 Which of these statements is not true?



A The currents at Q and R add up to give the current at S.

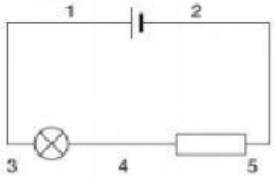
B The current is the same at P and S.

C The current is the same at Q and R.

D The current is the same at P and Q.

7Jd

1 How can you measure the voltage across the bulb in this circuit?



A Connect a voltmeter between points 1 and 2.

B Connect an ammeter between points 1 and 3.

C Connect a voltmeter between points 3 and 4.

D Connect a voltmeter between points 4 and 5.

2 What does the voltage across a component measure?

A The number of charges that pass through the component.

B The size of the cell in the circuit.

C How hard it is for the current to flow through the component.

D The energy transferred by the current.

3 Which of these combinations will give the largest current in a circuit?

A high voltage, high resistance

B low voltage, high resistance

C high voltage, low resistance

D low voltage, low resistance

4 An obstacle in a race represents:

A a high resistance, because it is hard for runners to get over it

B a low resistance, because it is hard for runners to get over it

C a high resistance, because it is easy for runners to get over it

D a wire, because people move along the race track.

7Je

1 What happens if a large electric current flows through your body?

A Your heart could stop working.

B Your eyeballs could explode.

C Nothing at all.

D It will improve your circulation.

2 Which of these is not a good rule for using electricity safely?

A Never use electrical appliances with wet hands.

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B Turn off the power pack before you make any changes to your circuit.

C Plug as many things as you can into each socket.

D Do not poke things into sockets.

3 A fuse is:

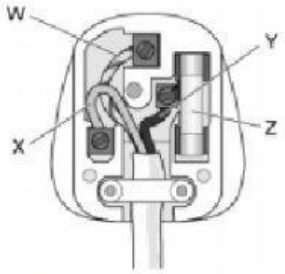
A a metal strip that bends when it is hot

B a piece of wire that melts when it gets too hot

C a piece of plastic that does not let electricity through

D the part of a plug that sticks into a socket.

4 The diagram shows the inside of a plug. Which statement is **not** correct?



A Z is the fuse.

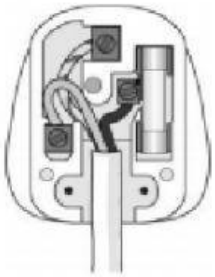
B Wire W is brown.

C Wire X is blue.

D Wire Y is the live wire.

a The diagrams below show two plugs. Describe what is wrong with each plug.

i



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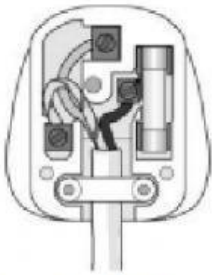
ii



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b Explain what the fuse does.

_____

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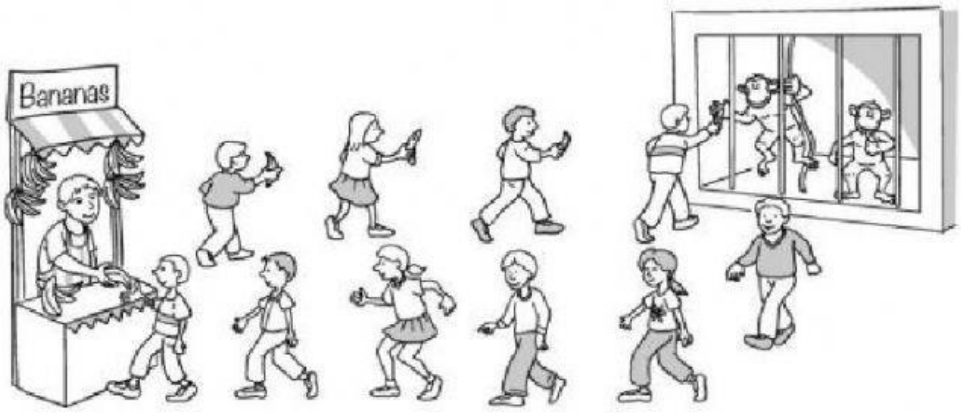
The drawing shows a model used to represent an electrical circuit.



a Match the boxes to show which part of the drawing represents each part of the circuit. One part has been done for you.

Part of drawing	Part of circuit
banana stall	charges
children	cell
bananas	bulb
monkeys	energy

b Explain why the children represent charges.

_____

_____

c Give *one* reason why this is not a very good model for an electrical circuit.

_____

_____

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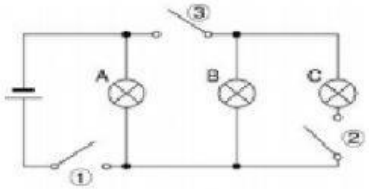
Look at this circuit diagram:



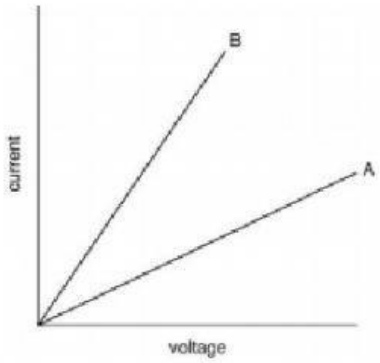
a What happens if you close switch 1? Tick *one* box.

- [ ] A bulb A lights
- [ ] B bulbs A and B light
- [ ] C bulbs A and C light
- [ ] D bulbs A, B and C light

b Which switches must you close to make **only** bulb B light up? Tick *one* box.

- [ ] A 1 and 2
- [ ] B 1 and 3
- [ ] C 2 and 3
- [ ] D 1, 2 and 3

Tom measures the current in a thin wire and then measures the current in a thick wire. This graph shows his results.



Give the letter showing the thick wire and explain how you worked out your answer.

_____

_____

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