

71 electrical circuits...mark scheme

Assessment for learning...year 7 (level 3-6)

Question 1:

- (a) the circuit is broken **or** the break in B stops current from flowing through A 1
- accept 'they are in series'*
accept 'the connection is broken'
do not accept 'faulty circuit'
- (b) (i) yes 1
- (ii) yes 1

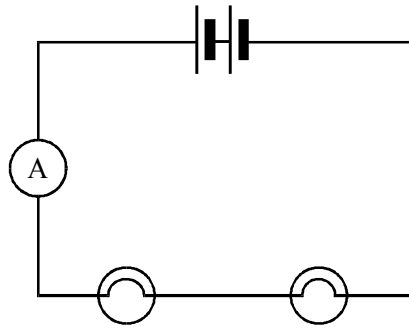
[3]

Question 2:

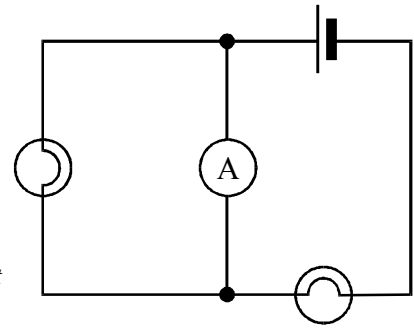
- (a) circuit A 1
- if more than one letter is given award no mark*
- (b) smaller **or** lower 1
- accept 'half'*
- any **one** from 1
- because the resistance is larger
accept 'the resistance is smaller in E'
 - because the current has to flow through more bulbs
accept 'because there are more bulbs'
do not accept 'because two bulbs use up more energy' or 'because the current is less'

- (c) If the two bulbs are in series, then two cells are needed.
The ammeter may be anywhere in the series circuit e.g.

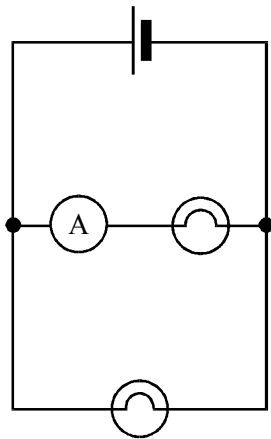
1



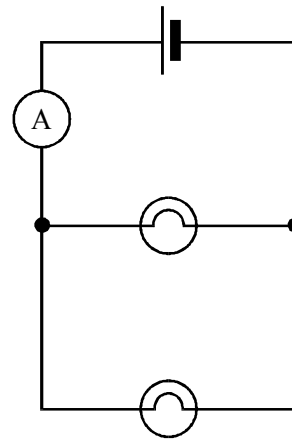
do **not** accept



If the two bulbs are in parallel, then the ammeter must be in one of the branches of the circuit e.g.



do **not** accept



[4]

Question 3:

- (a) any **one** from

1

- the circuit is not complete

accept 'there is no circuit'

- a wire is missing
- two of the bulbs are not connected

accept 'the bulbs are not connected'

*do **not** accept 'the switch might be broken' or*

'there is a loose connection'

- (b) another cell or battery

1

accept 'put the bulbs in parallel' or 'make a parallel circuit'

or 'use new batteries'

*do **not** accept 'use stronger batteries'*

- (c) Each bulb is the same brightness. ✓

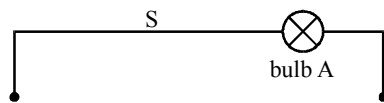
1

if more than one box is ticked, award no mark

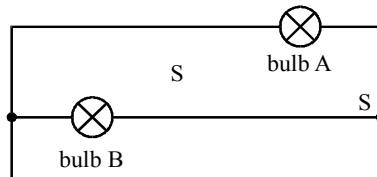
(d) (i) they go out 1
*accept 'they stop working' do **not** accept 'they get dimmer'*

(ii) any **one** from 1
 • they stay on **or** stay the same
accept 'they get brighter'
 • they do not go out
accept 'only the broken bulb goes out'
 • nothing

(e) a letter **S** drawn onto **or** close to the wire in the top part of the circuit anywhere between the two junctions 1



accept an open switch symbol drawn onto the diagram
*do **not** accept a letter **S** drawn mid-way between the top two wires **or** at a junction between the top two wires as shown below*



[6]

Question 4:

(a) there is a wire missing between the battery and the bulb 1
*accept 'there is a wire missing' **or** 'the bulb is not connected to the battery'*
*accept 'it is not a complete circuit' **or** 'the circuit is broken'*

(b) two wires are connected to one end of the battery 1
accept 'the battery is wrongly connected'
accept 'the battery is not in the circuit'
accept 'the circuit is wrongly connected'
*do **not** accept 'there is an incomplete circuit'*

(c) the bulb is broken **or** blown 1

do not accept 'the circuit is not complete'

do not accept 'because the light is not on'

(d) the circuit is connected correctly 1

accept 'it is set up right'

accept 'there is a current'

*accept 'there is a complete circuit **or** path'*

[4]

Question 5:

(a) switches 1 and 2 1

if more than one box is ticked, award no mark

(b) no because switch 1 must be on **or** closed 1

both the answer and the reason are required for the mark

accept 'there is no switch in the motor section of the parallel circuit, so it cannot be isolated'

(c) it would go up 1

*accept 'it would get hotter **or** very hot'*

do not accept 'it would be hot'

(d) any **one** φρομ 1

- no effect
slightly'
- it would stay on

accept 'the motor speeds up

[4]