

The size of the current in a circuit

1. In which of the two circuits will the current be larger (a) or (b)
(Assume that the cells, meters and bulbs are the same in both circuits)

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2. What is meant by the resistance of a circuit?

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3. Write down the names of three simple electrical components that would have resistance.

(a)

(b)

(c)

4. Which is likely to be larger the resistance of a one of these components in a circuit or the resistance of the connecting wires in that circuit?

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5. What happens to the temperature of a resistor when an electric current passes through it?

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6. What causes this change of temperature?

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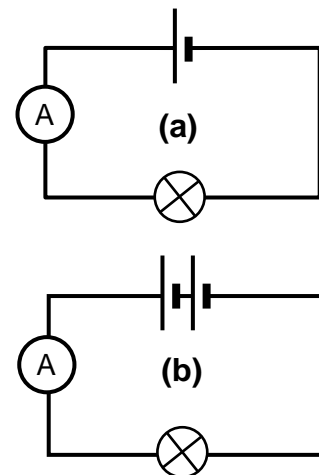
7. Is the temperature of a light bulb filament low or high?

8. What happens to the resistance of a light dependent resistor (LDR) when you shine a light on it?

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9. What happens to the resistance of a thermistor (ntc) when you heat it?

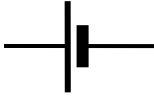
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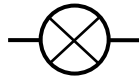
10. Write down one use of a ntc thermistor

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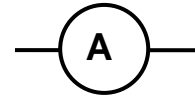
11. Label the symbols with the components that they represent:



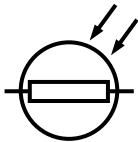
(a)



(b)



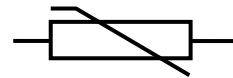
(c)



(d)

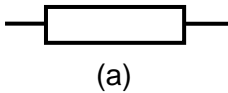


(e)



(f)

12. Which has more resistance, (a) or (b)? All the resistors have the same resistance



(a)



(b)

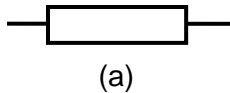
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13. Explain your answer to question 12.

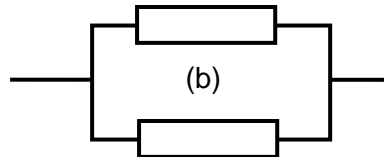
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14. Which has more resistance, (a) or (b)? All the resistors have the same resistance



(a)



(b)

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15. Explain your answer to question 14.

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16. A current of 2A flows through a resistor when there is voltage difference of 12V between its ends. What is the resistance of the resistor. (Use: resistance = voltage/current)

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17. A current of 3 mA flows through a resistor when there is voltage difference of 6V between its ends. What is the resistance of the resistor? (Use: resistance = voltage/current)

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18. Calculate the voltage between the ends of a 200 Ω resistor when a current of 1.5 A flows through it. (Use: resistance = voltage/current)

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19. Calculate the current flowing through a 100 Ω resistor when a voltage of 10 V is placed across its two ends. (Use: resistance = voltage/current)

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20. Draw a graph on the following axes to show how the current varies with the voltage for a resistor whose resistance stays constant

