Resistance and Ohm's Law Questions for GCSE Physics

1. What are the units for resistance?

2. What is Ohm's law in equation form?

3. What is Ohm's law in words?

4. A resistor has a potential difference of 12 V across it and a current of 3 A flowing through it. Calculate the resistance.

5. A resistor has a resistance of 5 Ω and a current of 2 A flowing through it. Calculate the voltage across it.

6. A lamp has a resistance of 20 Ω and a potential difference of 10 V across it. Calculate the current flowing through it.

7. A component has a resistance of 8 Ω and a voltage of 24 V across it. Calculate the current.

8. A current of 0.5 A flows through a resistor when the voltage across it is 6 V. Calculate the resistance.

9. Three resistors of 10 Ω, 15 Ω and 5 Ω are connected in series. Calculate the total resistance.

10. Two resistors of 40 Ω and 60 Ω are connected in series to a 10 V battery.
a) Calculate the total resistance. **b)** Calculate the current in the circuit**.**

11. A circuit contains resistors of 25 Ω, 35 Ω and 40 Ω connected in series to a 20 V battery.
a) Calculate the total resistance. **b)** Calculate the current in the circuit.

12. A resistor has a resistance of 12 Ω and carries a current of 0.5 A. Calculate the voltage across it.

13. What happens to the resistance of a wire if its length is doubled? Explain your answer.

14. Two resistors of 30Ω and 50Ω are connected in series with a battery. The current flowing in the circuit is 0.25A. What is the voltage across the battery?

15. What happens to the resistance of a wire if it is made thicker?