Week 20 - Circuits

Read Page 234 (Electric Current)

TQ1. What is electric current?

TQ2. What is the symbol for electric current?

TQ3. What are the units of electric current?

TQ4. What is the equation for calculating electric current?

QQ5. A charge of 45 C passes through a 12-ohm resistor in 5 seconds. What is the current?

QQ6. There are 7.50×10^{21} electrons passing through a circuit in 60 seconds. What is the current running through this circuit?

QQ7. The current in a lightbulb is 4.0 A. How much charge in Coulombs passes through this lightbulb in two minutes?

QQ8. How many electrons pass through the lightbulb in QQ7?

Read Page 236 (Resistance)

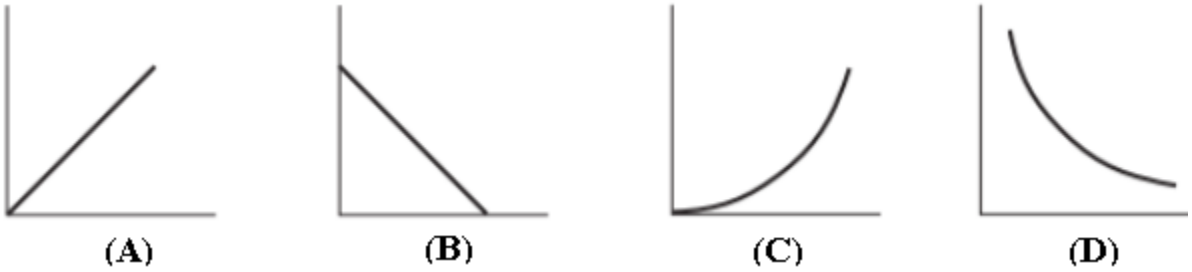
TQ9. What two things will change the conductivity of a substance?

TQ10. What is resistance?

TQ11. What it the equation to calculate the resistance of an object?

TQ12. What are the units of resistance (not resitivity!)?

CQ13. Which graph best represents the relationship between the resistance of an object and its length?



CQ14. Which graph above best represents the relationship between the resistance of an object and its area?

Day 2

Read Page 238 (Ohm's Law)

TQ19. Finish the equation for Ohm's Law. V =

(For CQ20 – CQ22 refer to the graphs on CQ13)

Week 20 - Circuits

CQ20. Which graph best represents the relationship between voltage (potential difference) and current?

CQ21. Which graph best represents the relationship between voltage (potential difference) and resistance?

CQ22. Which graph best represents the relationship between current and resistance?

QQ23. A small flashlight bulb draws 0.30 A from its 1.5 V battery. What is the resistance of the bulb?

QQ24. If another flashlight bulb uses 1.2 V of battery and has a resistance of 8.0 Ω, what is the current?

QQ25. If a speaker that draws 4.0 A has a wire with a resistance of 0.10 Ω, what is the voltage across the wire?

Read Page 242 (Power)

TQ22. What is the equation for electrical power with voltage (potential difference) and current?

QQ23. If a 120 V hairdryer draws 15 A, what is the power rating of the hairdryer?

QQ24. If an appliance operating at 120 V draws 12 A of current, how much heat is delivered in one minute?