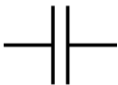


ASSESSMENT ON ELECTRICAL CIRCUITS

- This questionnaire is about your understandings of electricity.
- For each question, circle the answer that is closest to your understanding.
- Be sure to read all the choices before selecting one.

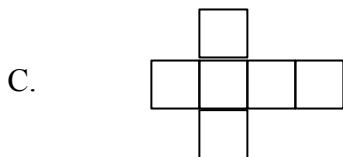
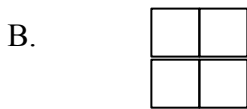
1. Why do you think the symbol for a capacitor looks like this? 

- A. It's a signal like the Morse code, but with a series of dashes and spikes of electricity
- B. It's a symbol for a cup with no bottom, which holds an infinite capacity
- C. A capacitor contains markings, lines which run around the circumference
- D. A capacitor contains two parallel metal plates separated by something

2. What makes a capacitor able to store more energy?

- A. More surface area on each part of the capacitor
- B. More distance between each part of the capacitor
- C. A longer series of dashes and electrical spikes
- D. A better conductor separating the critical parts

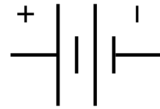
3. The net of a cube would look like which figure?



4. If all the houses in a town were wired in series and your neighbor turned off all his lights, what would happen to your lights?

- A. They would glow brighter
- B. They would go dimmer
- C. They would turn off
- D. Nothing would happen to my lights

5. Why do you think the symbol for a battery looks like this?



- A. It produces a signal with alternating spikes of high voltage and low voltage
- B. It's the universal symbol for a weapon, which can result in the crime of "battery"
- C. A battery is basically a sandwich of different types of metal
- D. A battery contains four parallel metal plates separated by something

6. What is an easy material to build resistors from?

- A. Pencil lead (graphite)
- B. Pennies
- C. Thick wire
- D. Plastic

7. What do capacitors store?

- A. Protons
- B. Electrons
- C. Neutrons
- D. Neutrinos

8. What is the primary difference between capacitors and batteries?

- A. Capacitors store energy but batteries transform energy
- B. Capacitors generate energy but batteries transform energy
- C. Capacitors hold more energy than batteries do
- D. Capacitors hold less energy than batteries do

9. How does a battery store an electrical charge?

- A. Because it has been charged up at the battery factory
- B. Because it produces electrons which move
- C. Because it produces protons which move
- D. Because a chemical reaction can push electrons in a circuit

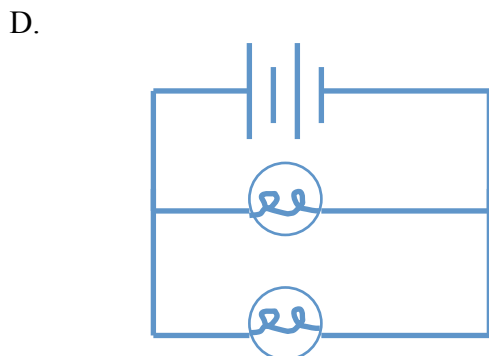
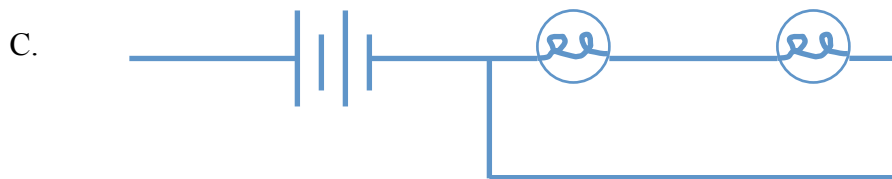
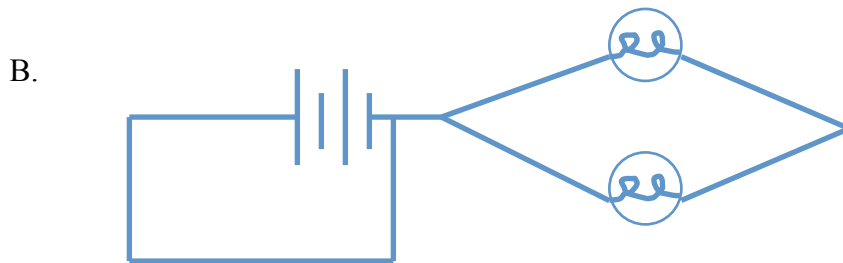
10. When batteries and capacitors stop working, they are out of _____.

- A. energy.
- B. electrons.
- C. juice.
- D. electricity.

11. Electricity happens when electrons _____.

- A. disappear.
- B. are attracted to each other.
- C. change form.
- D. move.

12. Which circuit will light both of the bulbs?



13. If you have a circuit with a 9 volt battery and four identical light bulbs in series, what will the light bulbs do when the circuit is closed?

- A. None of them will light
- B. Some of them will light
- C. All of them will light, but the one closest to the battery will be brightest
- D. All of them will light with the same brightness

14. If you have a circuit with a 9 volt battery and a switch and four identical light bulbs in parallel, what will the light bulbs do when the circuit is closed?

- A. The one closest to the battery will light up first, and the one farthest away will light up last.
- B. The light bulbs will all turn on at the same time, but a second or so after you flip the switch.
- C. When the circuit is closed, all the lights will come on immediately.
- D. All of them will turn on immediately, but the one closest to the battery will be brightest.