Name	Class	Date
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Chapter 35 Test Electric Circuits

True or False Questions

Circle the correct answer.

- **F** 1. Light bulbs connected in series all carry the same current, regardless of their resistances.
- **F 2.** In a series circuit, the total voltage drop across a series of resistors is the sum of voltage drops across each individual resistor.
- **F** 3. In a parallel circuit, current in each branch is the same.
- **F** 4. When resistors are arranged in parallel, their overall resistance is less than that of the smallest resistor.
- **F 5.** A fuse or circuit breaker used in a circuit is usually inserted in parallel.

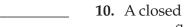
Multiple Choice Questions

Choose the best answer to each question and write the appropriate letter in the space provided.

- 6. When two light bulbs are connected in series, the
 - **a.** same amount of current always flows through each light bulb.
 - **b.** current through each light bulb is proportional to its resistance.
 - c. neither of these



- 7. When one light bulb in a series circuit containing several light bulbs burns out,
 - a. the other light bulbs burn brighter.
 - **b.** nothing changes in the rest of the circuit.
 - c. none of the other bulbs will light up.
- **8.** When one light bulb in a parallel circuit containing several light bulbs burns out,
 - a. the other light bulbs burn brighter.
 - b. nothing changes in the rest of the circuit.
 - c. none of the other bulbs will light up.
 - **9.** A 60-W light bulb is connected to a 12-V car battery. When another 60-W bulb is connected in parallel with the first bulb, the battery's output energy
 - a. halves.
 - **b.** remains the same.
 - c. doubles.



- 10. A closed circuit is a circuit in which current
 - a. can flow.
 - **b.** is prevented from flowing.
- **11.** When resistors are put in series next to each other, their overall resistance is
 - a. larger than that of any individual resistor.
 - **b.** the same as the resistance of one of the resistors.
 - **c.** smaller than the resistance of any of the resistors.

- **b.** 9 ohms.
- **c.** 6 ohms.
- d. 3 ohms.

Math Problems

Solve the following problems in the space provided. Show all work.

- **14.** What is the equivalent resistance of a 10-ohm and a 30-ohm resistor connected in parallel?
- **15.** A 50-V battery is connected across a 10-ohm resistor and produces a current of 4.5 A. What is the internal resistance of the battery?

Essay Question

On a separate sheet of paper, answer the following question.

16. What is a parallel circuit? How do voltages, currents, and resistances add in a parallel circuit? Give an example.