

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) Technician A says that electronic calculators have a memory function that can be used to calculate resistance, current, and voltage values for a parallel circuit. Technician B says to separate components of a series-parallel circuit to simplify calculations. Which technician is correct? 1) _____

- A) Technician A only
- B) Technician B only
- C) Both technicians
- D) Neither technician

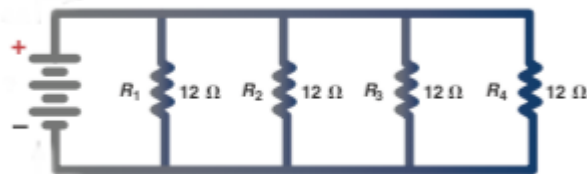
2) In a series circuit _____. 2) _____

- A) total circuit resistance is equal to the sum of all resistances in the circuit
- B) current flow is constant at any point in the circuit
- C) both A and B
- D) neither A nor B

3) Two light bulbs are wired in series and one bulb burns out (opens.) Technician A says that the other bulb will still work. Technician B says that the current will increase in the circuit because one electrical load (resistance) is no longer operating. Which technician is correct? 3) _____

- A) Technician A only
- B) Technician B only
- C) Both technicians
- D) Neither technician

4) What is the total resistance of this circuit? 4) _____



- A) 4 ohms
- B) 36 ohms
- C) 3 ohms
- D) Not enough information

5) The amperage in a series circuit _____. 5) _____

- A) is the same anywhere in the circuit
- B) varies in the circuit due to the different resistances
- C) is high at the beginning of the circuit and decreases as the current flows through the resistance
- D) is always less returning than leaving the battery

- 6) The current flowing into each junction of a parallel circuit _____ the current flow at the junction on the opposite end of that branch. 6) _____
- A) equals
 - B) is less than
 - C) is more than
 - D) none of these
- 7) A series circuit has three resistors of 4 ohms each. The voltage drop across each resistor is 4 volts. Technician A says that the source voltage is 12 volts. Technician B says that the total resistance is 18 ohms. Which technician is correct? 7) _____
- A) Technician A only
 - B) Technician B only
 - C) Both technicians
 - D) Neither technician
- 8) Two bulbs are connected in parallel to a 12-volt battery. One bulb has a resistance of 6 ohms and the other bulb has a resistance of 2 ohms. Technician A says that only the 2-ohm bulb will light because all of the current will flow through the path with the least resistance and no current will flow through the 6-ohm bulb. Technician B says that the 6-ohm bulb will be dimmer than the 2-ohm bulb. Which technician is correct? 8) _____
- A) Technician A only
 - B) Technician B only
 - C) Both technicians
 - D) Neither technician
- 9) If a 12-volt battery is connected to a series circuit with three resistors of 2 ohms, 4 ohms, and 6 ohms, how much current will flow through the circuit? 9) _____
- A) 1 amp
 - B) 2 amps
 - C) 3 amps
 - D) 4 amps
- 10) Technician A says that the sum of the voltage drops in a series circuit should equal the source voltage. Technician B says the current (amperes) varies depending on the value of the resistance in a series circuit. Which technician is correct? 10) _____
- A) Technician A only
 - B) Technician B only
 - C) Both technicians
 - D) Neither technician