

Name \_\_\_\_\_

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

- 1) Voltage drop is a better measurement of resistance than testing static resistance because \_\_\_\_\_ 1) \_\_\_\_\_  
A) current flow creates heat which adds to circuit resistance  
B) the resistance specification for the component is not required for diagnosis  
C) Both A and B  
D) Neither A nor B
- 2) If resistance is reduced in a series circuit, \_\_\_\_\_ current will flow. 2) \_\_\_\_\_  
A) more  
B) less  
C) the same  
D) None of these
- 3) Parallel circuits \_\_\_\_\_. 3) \_\_\_\_\_  
A) have more than one path for current flow  
B) current flow through each branch of the circuit depends on the resistance present in that branch  
C) Both A and B  
D) Neither A nor B
- 4) The current flowing into each junction of a parallel circuit \_\_\_\_\_ the current flow at the junction on the opposite end of that branch. 4) \_\_\_\_\_  
A) equals  
B) is less than  
C) is more than  
D) None of these
- 5) In a series circuit with two resistors, the resistor with the highest resistance will drop \_\_\_\_\_ volts than the lowest resistance. 5) \_\_\_\_\_  
A) more  
B) less  
C) the same  
D) None of these
- 6) 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? 6) \_\_\_\_\_  
A) Technician A only  
B) Technician B only  
C) Both technicians A and B  
D) Neither technician A nor B

- 7) Calculate the total resistance and current in a 12 volt parallel circuit with three resistors of 4 ohms, 8 ohms, and 16 ohms, using any one of the five methods (calculator suggested). What is the total resistance and current? 7) \_\_\_\_\_
- A) 22 ohms (0.4 amperes)
  - B) 140 ohms (18 amperes)
  - C) 4 ohms (3.0 amperes)
  - D) 2.3 ohms (5.3 amperes)
- 8) Knowledge of parallel circuit fundamentals is necessary to diagnose \_\_\_\_\_. 8) \_\_\_\_\_
- A) port fuel injection circuits
  - B) diesel glow plug circuits
  - C) add-on lighting circuits
  - D) All of these
- 9) 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? 9) \_\_\_\_\_
- A) Technician A only
  - B) Technician B only
  - C) Both technicians A and B
  - D) Neither technician A nor B
- 10) The total circuit resistance of a parallel circuit is always \_\_\_\_\_ the lowest resistance present in any branch of the circuit. 10) \_\_\_\_\_
- A) less than
  - B) more than
  - C) equal to
  - D) None of these

## Answer Key

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- 1) C  
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- 2) A  
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- 3) C  
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- 4) A  
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- 5) A  
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- 6) A  
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- 7) D  
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- 8) D  
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- 9) B  
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- 10) A  
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