

Name \_\_\_\_\_

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

- 1) The voltage output of a zirconia oxygen sensor when the exhaust stream is lean (excess oxygen) is \_\_\_\_\_. 1) \_\_\_\_\_  
A) relatively high (close to 1 volt)  
B) about in the middle of the voltage range  
C) relatively low (close to 0 volt)  
D) either A or B, depending on atmospheric pressure
  
- 2) A wide band oxygen sensor heater can draw how much current (amperes)? 2) \_\_\_\_\_  
A) 0.8 to 2.0 A  
B) 2 to 4 A  
C) 6 to 8 A  
D) 8 to 10 A
  
- 3) Technician A says that an oxygen sensor can have one, two, three, four, or more wires, depending on the style and design. Technician B says that if the exhaust has little oxygen, the voltage of the oxygen sensor will be close to 1 volt (1000 mV) and close to zero if there is high oxygen content in the exhaust. Who is right? 3) \_\_\_\_\_  
A) Technician A only  
B) Technician B only  
C) Both technicians  
D) Neither technician
  
- 4) A low O<sub>2</sub>S voltage could be due to a \_\_\_\_\_. 4) \_\_\_\_\_  
A) rich exhaust  
B) lean exhaust  
C) defective spark plug wire  
D) both B and C
  
- 5) The oxygen sensor signal is used by the PCM to \_\_\_\_\_ the air-fuel mixture. 5) \_\_\_\_\_  
A) dampen  
B) fine-tune  
C) add air to  
D) add fuel to
  
- 6) Technician A says that a wide-band oxygen sensor, also called a lean air-fuel (LAF) sensor, can detect air-fuel ratios from as rich as 10:1 to as lean as 23:1. Technician B says that the oxygen sensor signal determines fuel trim which is used to tailor the air-fuel mixture for the catalytic converter. Which technician is correct? 6) \_\_\_\_\_  
A) Technician A only  
B) Technician B only  
C) Both technicians  
D) Neither technician

- 7) A P0133 DTC is being discussed. Technician A says that a defective heater circuit could be the cause. Technician B says that a contaminated sensor could be the cause. Which technician is correct? 7) \_\_\_\_\_
- A) Technician A only
  - B) Technician B only
  - C) Both technicians
  - D) Neither technician
- 8) A high O<sub>2</sub>S voltage could be due to a \_\_\_\_\_. 8) \_\_\_\_\_
- A) rich exhaust
  - B) lean exhaust
  - C) defective spark plug wire
  - D) both A and C
- 9) Technician A says that an oxygen sensor produces a voltage output signal based on the oxygen content of the exhaust stream. Technician B says that if the exhaust has little oxygen the voltage of the oxygen sensor will be close to 0 volts. Who is right? 9) \_\_\_\_\_
- A) Technician A only
  - B) Technician B only
  - C) Both technicians
  - D) Neither technician
- 10) What does the post, or downstream, oxygen sensor (HO<sub>2</sub>S) measure? 10) \_\_\_\_\_
- A) Amount of H<sub>2</sub>O behind the catalytic converter
  - B) Amount of oxygen behind the catalytic converter
  - C) Amount of H<sub>2</sub>O in front of the catalytic converter
  - D) Amount of oxygen in front of the catalytic converter

## Answer Key

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1) C

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2) D

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3) C

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4) D

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5) B

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6) C

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7) C

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8) A

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9) A

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10) B

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