

Name \_\_\_\_\_

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

- 1) When the exhaust is lean, the PCM applies a \_\_\_\_\_ current into the pump cell. 1) \_\_\_\_\_
  - A) Positive
  - B) Negative
  - C) Neutral
  - D) None of these
  
- 2) A wide band oxygen sensor can be made using what design? 2) \_\_\_\_\_
  - A) Cup and thimble
  - B) Cup and planar
  - C) Finger and thimble
  - D) Dual cell and single cell
  
- 3) 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 a conventional oxygen sensor cannot detect the exact air-fuel mixture. Which technician is correct? 3) \_\_\_\_\_
  - A) Technician A only
  - B) Technician B only
  - C) Both technicians
  - D) Neither technician
  
- 4) A conventional zirconia oxygen sensor can be made with what designs? 4) \_\_\_\_\_
  - A) Cup and thimble
  - B) Cup and planar
  - C) Finger and thimble
  - D) Dual cell and single cell
  
- 5) When the exhaust is rich, the PCM applies a \_\_\_\_\_ current into the pump cell. 5) \_\_\_\_\_
  - A) Positive
  - B) Negative
  - C) Neutral
  - D) None of these
  
- 6) A single cell wide band oxygen sensor may also be called a(an) \_\_\_\_\_. 6) \_\_\_\_\_
  - A) Air-fuel ratio sensor
  - B) Exhaust sensor
  - C) Nerst cell sensor
  - D) Pump sensor
  
- 7) When the air/fuel ratio is expressed as lambda, a lambda number of less than 1 indicates a \_\_\_\_\_ exhaust. 7) \_\_\_\_\_
  - A) Rich
  - B) Lean
  - C) Excessively cold
  - D) Excessively hot

8) A wide band oxygen sensor heater can draw how much current? 8) \_\_\_\_\_  
A) 0.8 to 2.0 A  
B) 2 to 4 A  
C) 6 to 8 A  
D) 8 to 10 A

9) A wide band oxygen sensor needs to be heated to what operating temperature? 9) \_\_\_\_\_  
A) 600 deg. F  
B) 800 deg. F  
C) 1400 deg. F  
D) 2000 deg. F

10) A conventional oxygen sensor heater keeps the sensor at about \_\_\_\_\_ degrees F. 10) \_\_\_\_\_  
A) 600  
B) 1400  
C) 212  
D) 194

## Answer Key

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