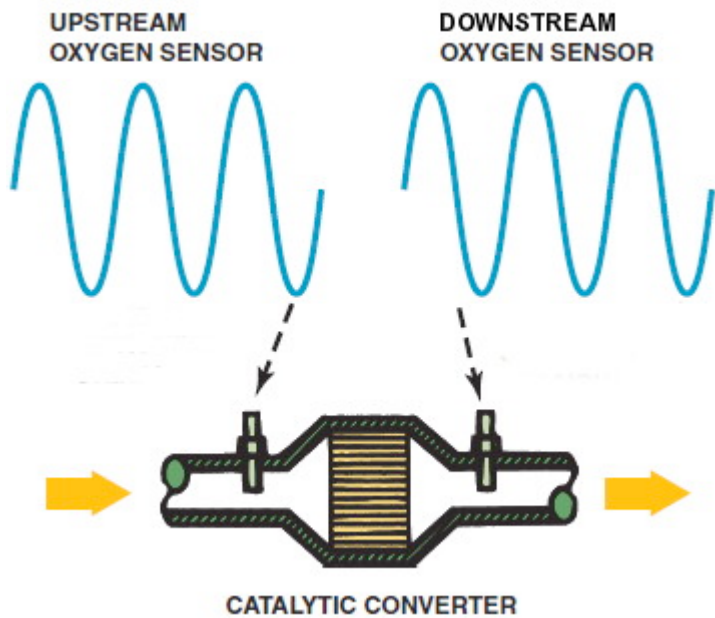


Name \_\_\_\_\_

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

- 1) Two technicians are discussing testing a catalytic converter. Technician A says that a vacuum gauge can be used and observed to see if the vacuum drops with the engine at 2500 RPM for 60 seconds. Technician B says that a pressure gauge can be used to check for backpressure. Which technician is correct? 1) \_\_\_\_\_
- A) Technician A
  - B) Technician B
  - C) Both technicians
  - D) Neither technician

- 2) The O<sub>2</sub> sensors in this OBD II system are sending a voltage signal as shown. What conclusion can be made about the catalytic converter? 2) \_\_\_\_\_



- A) The CAT is working correctly
  - B) The CAT is not working correctly
  - C) The engine is not running, so the CAT is not functioning
  - D) Not enough information
- 3) Technician A says that EGR (Exhaust Gas Recirculation) is usually not needed at idle, and not wanted at wide-open throttle for maximum engine performance, or when the engine is cold. Technician B says that oxides of nitrogen (NO<sub>x</sub>) are formed inside the combustion chamber due to heat exceeding 4500°F. Which technician is correct? 3) \_\_\_\_\_
- A) Technician A
  - B) Technician B
  - C) Both technicians
  - D) Neither technician

- 4) Before an evaporative emission monitor will run, the fuel level must be where? 4) \_\_\_\_\_  
A) At least 75% full  
B) Over 25%  
C) Between 15 and 85%  
D) The level of the fuel in the tank is not needed to run the monitor test
- 5) The purpose of the EVAP system is to trap gasoline vapors, also called \_\_\_\_\_. 5) \_\_\_\_\_  
A) NO<sub>x</sub>  
B) VOC  
C) CO<sub>2</sub>  
D) CO
- 6) What causes the nitrogen and the oxygen in the air to combine and form oxides of nitrogen NO<sub>x</sub>? 6) \_\_\_\_\_  
A) Sunlight  
B) Any spark  
C) Heat above 2500°F (1370°C)  
D) Chemical reaction in the catalytic converter
- 7) Technician A says that a carbon (charcoal) canister is used to trap and hold gasoline vapors until they can be purged and run into the engine to be burned. Technician B says that the purpose of the evaporative emission (EVAP) control system is to reduce the release of volatile organic compounds (VOC) into the atmosphere. Which technician is correct? 7) \_\_\_\_\_  
A) Technician A  
B) Technician B  
C) Both technicians  
D) Neither technician
- 8) Exhaust Gas Recirculation (EGR) is used to control \_\_\_\_\_. 8) \_\_\_\_\_  
A) NO<sub>x</sub>  
B) CO<sub>2</sub>  
C) HC  
D) CO
- 9) Two technicians are discussing a catalytic converter. Technician A says the exhaust mixture must fluctuate between rich and lean for the best efficiency. Technician B says the air-fuel mixture must be leaner than 14.7:1 for best performance from a three-way catalytic converter. Which technician is correct? 9) \_\_\_\_\_  
A) Technician A  
B) Technician B  
C) Both technicians  
D) Neither technician

10) Technician A says that recirculating 6 to 10% inert exhaust gases back into the intake system increases peak temperature inside the combustion chamber and reduces NO<sub>x</sub> exhaust emissions.

10) \_\_\_\_\_

Technician B says that vacuum-operated EGR (Exhaust Gas Recirculation) valves are usually exhaust back pressure controlled to help match EGR flow into the intake with the load on the engine. Which technician is correct?

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

## Answer Key

Testname: ENGINES9\_19A

1) C

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2) B

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3) A

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4) C

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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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