

Name \_\_\_\_\_

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

- 1) Two technicians are discussing catalytic converters. Technician A says that the exhaust should have a 14.7:1 air-fuel ratio for the best efficiency. Technician B says that the air-fuel mixture must be leaner than 14.7:1 for best performance from a three-way catalytic converter. Which technician is correct? 1) \_\_\_\_\_
- A) Technician A only
  - B) Technician B only
  - C) Both technicians
  - D) Neither technician
- 2) Some vehicles have a "mini converter." Where is this component located? 2) \_\_\_\_\_
- A) Attached directly to the exhaust manifold
  - B) Downstream of the main catalytic converter
  - C) Just upstream of the muffler
  - D) None of these
- 3) The addition of cerium to catalytic converters provided what benefit? 3) \_\_\_\_\_
- A) Reduction of NO<sub>x</sub>
  - B) Stores oxygen to help with the oxidation process
  - C) Purification of NO<sub>x</sub>
  - D) None of these
- 4) What is applied to the ceramic substrate to make the surface porous? 4) \_\_\_\_\_
- A) Honeycomb filler
  - B) Washcoat
  - C) Aluminum
  - D) Cerium
- 5) What term describes a catalytic converter as it reaches its effective temperature? 5) \_\_\_\_\_
- A) Light off
  - B) Initiation
  - C) Consumption
  - D) None of these
- 6) To prevent catalytic converter damage, do not crank a flooded engine longer than \_\_\_\_\_ seconds. 6) \_\_\_\_\_
- A) 40
  - B) 15
  - C) 10
  - D) 60

- 7) A P0422 (catalytic converter efficiency failure) is set. What is a possible cause? 7) \_\_\_\_\_
- A) Engine mechanical fault
  - B) Exhaust leak
  - C) Fuel contamination
  - D) Any of these
- 8) Which exhaust gas reading indicates a good catalytic converter? 8) \_\_\_\_\_
- A) O<sub>2</sub> is zero
  - B) CO is zero
  - C) Both A and B
  - D) Neither A nor B
- 9) Technician A says that a converter that rattles when tapped with a mallet should be replaced. Technician B says that the root cause of the converter failure should be diagnosed and repaired before a replacement converter is installed. Which technician is correct? 9) \_\_\_\_\_
- A) Technician A only
  - B) Technician B only
  - C) Both technicians
  - D) Neither technician
- 10) When observing O<sub>2</sub>S waveforms on a DSO on an OBD-II vehicle, which O<sub>2</sub> sensor should have more oscillations in its O<sub>2</sub>S waveform? 10) \_\_\_\_\_
- A) Upstream
  - B) Downstream
  - C) They will be equal
  - D) None of these