

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 O₂S 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 O₂S 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 (HO₂S) measure? 10) _____
- A) Amount of H₂O behind the catalytic converter
 - B) Amount of oxygen behind the catalytic converter
 - C) Amount of H₂O in front of the catalytic converter
 - D) Amount of oxygen in front of the catalytic converter