

Name _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

1) What are three ways oxygen sensors can be tested?

2) How does an oxygen sensor detect oxygen levels in the exhaust?

3) What is the difference between open-loop and closed-loop engine operation?

4) How can the oxygen sensor be fooled and provide the wrong information to the PCM?

5) What is the purpose of a wide band oxygen sensor?

Answer Key

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- 1) Oxygen sensors can be tested using a DMM set to read DC volts, a DSO to observe the waveform, or using a scan tool to check for voltage ranges and fuel trim numbers.
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- 2) An oxygen sensor detects oxygen in the exhaust by comparing the oxygen levels between the exhaust and the outside air.
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- 3) In open loop, the fuel delivery is provided by the PCM based on a program, whereas in closed loop, changes in the injector pulse width can be made by the PCM based on the signal from the oxygen sensors.
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- 4) An oxygen sensor can be fooled if there is an exhaust leak upstream from the O2S or if the sensor itself is contaminated.
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- 5) Wide-band oxygen sensors are used to allow the engine to cover a broader range of air-fuel ratios and allow the vehicle to meet more stringent exhaust emission standards.
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