Automotive Electrical and Engine Performance, 8th Edition
Chapter 35

Name_____

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

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

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

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

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

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

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1) A wide-band oxygen sensor is capable of supplying air–fuel ratio information to the PCM over a much broader range.
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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) 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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4) When the PCM alone is determining the amount of fuel needed, it is called open-loop operation. As soon as the oxygen sensor (O2S) is capable of supplying rich and lean signals, PCM adjustments can be made to fine-tune the correct air–fuel mixture. This checking and adjusting of the PCM is called closed-loop operation.
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5) 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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