Automotive Technology 6th Edition
Chapter 26 - Engine Condition Diagnosis
Chapter 26

Name_____

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

1) Describe the visual checks that should be performed on an engine if a mechanical malfunction is suspected.

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2) Describe how to perform a compression test and how to determine what is wrong with an engine based on compression test result.

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3) Describe the test procedure for determining if the exhaust system is restricted (clogged) using a vacuum gauge.

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4) Describe the cylinder leakage test.

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5) Describe how a vacuum gauge would indicate if the valves were sticking in their guides.

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1) The visual inspection items that should be performed as a part of a diagnosis include oil level and condition, coolant level and condition, checking for oil leaks, and listening carefully for abnormal engine noise.
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2) A compression test is performed by connecting a pressure gauge into the spark plug hole and cranking the engine. A low first puff measurement indicates worn or broken piston rings. All cylinders should be within 20% of each other.
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3) A clogged (restricted) exhaust would be indicated on a vacuum gauge as a drop in engine vacuum if the engine speed is held at 2,000 to 2,500 RPM.
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4) A cylinder leakage test uses compressed air in the cylinders and faults are detected by listening for where the air is escaping from the engine.
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5) A vacuum gauge can be used to detect engine faults and a sticking valve would be indicated by a vacuum gauge needle movement that drops 1 or 2 in. Hg from the normal reading.
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