Light Vehicle Diesel Engines, 1st Edition
Chapter 14

Name_____

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

1) How does two-shot or triple-shot injection reduce oxides of nitrogen (NOx) emissions?

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2) Why might an antifoam additive need to be added to the engine oil after an engine repair, such as resealing an oil pan?

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3) What is the purpose of the injector driver module?

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4) What is the main advantage that a HEUI injector has compared to an earlier mechanical injector?

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5) How does oil quality affect the operation of a HEUI injection system?

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1) The multiple injections during a single cycle allow for lower cylinder pressures and temperature, which results in a lower level of NOx emissions.
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2) The lack of the antifoam additive causes low pressure in the high-pressure oil system which results in rough running.
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3) The injector driver module (IDM) is responsible for increasing the system voltage up to the needed voltage to operate the injectors.
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4) By using hydraulic force to pressurize fuel for injection, instead of the camshaft, the fuel system is no longer tied to the engine speed for fuel pressurization. This means the timing of the fuel injection event and fuel pressure at the nozzle can be varied separately from engine speed.
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5) Because HEUI injectors use high-pressure oil for actuation, the correct grade and viscosity of oil is critical for proper operation. Proper HEUI operation requires engine oil that has a minimum level of antifoaming additive.
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