

Name \_\_\_\_\_

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

1) What is likely to occur if the driver fails to refill the diesel exhaust fluid reservoir?

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2) What type of information can be obtained by the service technician during the maintenance pre-check?

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3) What is the purpose of the restriction gauge on the air intake system?

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4) Why is it important to check the coolant nitrate level when checking the freeze protection and the acidity of the mixture?

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5) Why must a "CJ-4" rated oil be used on a 2007 or newer vehicle equipped with a diesel engine?

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## Answer Key

Testname: LVDE1\_SHORT16

1) On most vehicles when the fluid gets low, a reminder light is illuminated on the instrument cluster reminding the driver to refill the system. If the driver fails to refill the system, a service engine soon light may illuminate and a fault code will be stored in the engine controller. If the condition is ignored, the vehicle will enter a "reduced power mode" and "will not run at all mode." Once the system has been refilled, it may take a few moments of engine run time before the low fluid reminder light goes off due to programming within the DEF system.

Page Ref: 180

2) Prior to beginning any maintenance process on any light-duty diesel vehicle, it is important to complete several tasks called pre-maintenance. First, the technician should check the level and the condition of the engine oil. This will provide insight to the service technician as to how the vehicle has been operated, and how regularly the vehicle is being serviced. The second task the service technician should perform is to connect a scan tool to the data link connector (DLC) and check for any active or stored diagnostic trouble codes (DTC).

Page Ref: 176

3) The intake airflow restriction gauge is designed to measure a pressure that is less than atmospheric so that it will sense a restriction when the air filter needs to be replaced.

Page Ref: 177

4) Nitrates protect iron and steel components within the cooling system. Low levels of nitrates are associated with cylinder wall failure due to cavitation. Air bubbles will form in the cooling system along the cylinder wall. When the air bubbles implode due to the normal vibrations caused by diesel combustion pressures, they will erode the sides of the cylinder walls. In some cases, this erosion will lead to holes in the cylinder walls, leading to an engine failure.

Page Ref: 179

5) The CJ-4 service rating meets the requirements for low ash oil. Since 2018, a new API service rating of CK-4 is used for vehicles manufactured after that point.

Page Ref: 178