

Name \_\_\_\_\_

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

1) What are the differences between a continuous and a non-continuous monitor?

---

---

---

---

---

---

2) Why does a traditional PCV valve and monitor not work on a diesel engine?

---

---

---

---

---

---

---

---

3) How does the particulate filter monitor know a restriction exists in the particulate filter?

---

---

---

---

---

---

---

---

4) What is the purpose of the cooling system monitor?

---

---

---

5) How is the misfire monitor on a vehicle equipped with a diesel engine different from the misfire monitor on a vehicle equipped with a gasoline engine?

---

---

---

---

---

## Answer Key

Testname: LVDE1\_SHORT20

1) The continuous monitors run the entire drive cycle once enabling conditions are met. The only time the continuous monitors stop during a drive cycle is when a failure is detected or a condition exists that might lead to a false failure. The non-continuous monitors run once per drive cycle after the enabling criteria has been satisfied. Pass or fail, the monitor will not run again until the next drive cycle. Depending on how the vehicle is emission certified, a combination of these monitors is required to satisfy the OBD-II readiness requirement.

Page Ref: 230

2) Beginning with the 2007 model year, diesel-equipped vehicles are no longer allowed to vent unfiltered crankcase gases to the atmosphere. Because a diesel engine makes very little intake manifold vacuum, a PCV system separates any oil out of the crankcase gasses and then allows the gasses to flow through to the air inlet side of the system. The purpose of the crankcase ventilation monitor is to ensure the system flows and is not leaking to the ambient air. Typically, a low-pressure sensor similar in design to a map sensor was used to detect the normal operation of the system. Under specific operating conditions, the sensor monitors for crankcase pressures within a very small range. Pressures outside of this range would indicate either a restriction or a leak.

Page Ref: 235-236

3) The particulate matter (PM) filter monitor, depending on the model year and GVWR, is responsible for determining filter restrictions, filter leaks, filter substrate removal, and tracking incomplete regeneration events. A combination of exhaust gas temperature sensors and filter pressure differential sensors are used to calculate the operation of the particulate filter during specific operating conditions. This information is compared to programmed normal to determine if a defect has occurred. If a restriction is detected, the PCM will request the "wrench" icon be illuminated on the dash, in addition to setting a hard code and illuminating the MIL.

Page Ref: 234

4) The cooling system monitor checks the operating temperature of the engine during the warm-up cycle. A formula that uses engine run time, load, vehicle speed, intake air temperature, and ambient temperature is used to determine what the engine temperature should be.

Page Ref: 235

5) Unlike a gasoline-engine equipped vehicle, the current diesel engines do not use a Type A and Type B misfire strategy. The strategy used on current model diesel vehicles is very similar to the Type B misfire used on gasoline-engine equipped vehicles. The PCM will store a one trip failure if a sufficient percentage of misfire over 1,000 engine revolutions occur, which would exceed the EPA Federal test procedure (FTP) standard. On the second consecutive drive cycle, when the enabling conditions are met and a failure is detected, the MIL will illuminate and a DTC will be stored.

Page Ref: 232