**ANSWER KEY**

**Distance Learning Exercise #47: Engine Performance Case Study #1**

Supervisor/Instructor Note: This activity can be used as the basis for a discussion, a forum, or as a stand-alone activity.

1. B

Supervisor/Instructor Note: Since the cranking speed sounds normal, the battery and charging system are most likely not the problem. Engine mechanical issues, such as incorrect valve timing or a head gasket that is blown between two cylinders, could cause a no-start condition, but would most likely cause the cranking speed and sound to be abnormal.

1. D

Instructor/Supervisor Note: Power to the injectors should be present when the ignition is in the run and crank positions. The PCM grounds the injector circuit to fire the injectors. A flashing Noid light verifies there is power present to the injectors and the PCM is grounding the injector circuit.

1. C

Supervisor/Instructor Note: The fuel pressure is in the normal range, which eliminates the fuel pump, fuel filter, and fuel pressure regulator as possible problems.

1. A

Supervisor/Instructor Note: This vehicle, like most modern vehicles, uses more than one ignition coil. It is unlikely that multiple coils, spark plug wires, or spark plugs would fail at the same time. Most likely there is one fault preventing a spark on all the cylinders. PCM ground is the only option all the coils have in common.