**Meets ASE Task:** (A8-B-5) P-1 Inspect and test computerized engine control system sensors, powertrain/engine control module (PCM/ECM), actuators, and circuits using a graphing multimeter (GMM), digital storage oscilloscope (DSO), and/or scan tool; determine needed action.

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_

Time on Task:\_\_\_\_\_\_\_\_\_\_\_\_\_

Make/Model/Year:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

VIN:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Evaluation (Enter number from 4, 3, 2, 1) :\_\_\_\_\_\_\_\_\_

**Scan Tool Diagnosis**

Page 252

(Not all this data will be available on all vehicles or scan tools - if not available, put NA.)

**[ ]  1.** DTCs: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pending DTC:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**[ ]  2.** Engine coolant temperature (ECT): cold \_\_\_\_\_ warm \_\_\_\_\_\_\_

**[ ]  3.** Intake air temperature (IAT): cold \_\_\_\_\_ warm \_\_\_\_\_\_\_\_

**[ ]  4.** Upstream O2S1: lowest voltage observed \_\_\_\_\_ highest voltage observed \_\_\_\_\_

**[ ]  5.** Upstream O2S2: lowest voltage observed \_\_\_\_\_ highest voltage observed \_\_\_\_\_

**[ ]  6.** Downstream O2S: lowest voltage observed \_\_\_\_\_ highest voltage observed \_\_\_\_\_

**[ ]  7.** O2 cross counts: @ idle\_\_\_\_ @ 2,000 RPM\_\_\_\_

**[ ]  8.** Injector pulse width: @ idle (park)\_\_\_\_\_ @ idle (drive)\_\_\_\_\_

 @ 2,000 RPM (park)\_\_\_\_\_ @ 3,000 RPM (park)\_\_\_\_\_

**[ ]  9.** Spark advance: @ idle (park)\_\_\_\_\_ @ idle (drive)\_\_\_\_\_

 @ 2,000 RPM (park)\_\_\_\_\_ @ 3,000 RPM (park)\_\_\_\_\_

**[ ]  10.** Short term fuel trim (integrator): @ idle (park)\_\_\_\_\_

 @ idle (drive)\_\_\_\_\_ @ 2,000 RPM (park)\_\_\_\_\_

**[ ]  11.** Long term fuel trim (block learn): @ idle (park)\_\_\_\_\_ @ idle (drive)\_\_\_\_\_

**[ ]  12.** MAP: @ idle (park)\_\_\_\_\_ @ idle (drive)\_\_\_\_\_

**[ ]  13.** MAF (grams/sec): @ idle (park)\_\_\_\_\_ @ idle (drive)\_\_\_\_\_

 @ 2,000 RPM (park)\_\_\_\_\_ @ key on (engine off)\_\_\_\_\_

**[ ]  14.** IAC counts (if equipped): @ idle (park)\_\_\_\_\_ @ idle (drive)\_\_\_\_\_

**[ ]  15.** Electronic throttle (if equipped), percent: @ idle (park)\_\_\_\_\_% @ idle (drive)\_\_\_\_\_%

**[ ]  16.** Throttle position (TP) sensor: @ idle\_\_\_\_ @ W.O.T. engine off, ignition "on"\_\_\_\_\_

**[ ]  17.** Battery voltage:\_\_\_\_\_\_\_\_\_\_

**[ ]  18**. All monitors run and passed? OK[ ]  NOT OK[ ]

**[ ]  19.** Troubles with the vehicle? (if any)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_