

Automotive Electrical and Engine Performance 8th Edition
Chapter 16 – Temperature and Throttle Position Sensors
Quiz A

1. What is the primary role of the engine coolant temperature (ECT) sensor?
 - a. To regulate air-fuel mixture and spark timing based on engine speed
 - b. To measure exhaust gas temperature for emission control
 - c. To monitor coolant temperature for adjusting fuel mixture and ignition timing
 - d. To calculate vehicle speed and throttle position

2. How does a negative temperature coefficient (NTC) thermistor behave as temperature increases?
 - a. Resistance decreases, and voltage output decreases
 - b. Resistance increases, and voltage output rises
 - c. Resistance decreases, and voltage output rises
 - d. Resistance increases, and voltage output decreases

3. Where is the throttle position (TP) sensor typically mounted?
 - a. Inside the intake manifold
 - b. On the throttle body
 - c. On the engine block
 - d. On the exhaust manifold

4. Which parameter is primarily controlled by the intake air temperature (IAT) sensor?
 - a. Idle air control valve operation
 - b. Air-fuel mixture adjustments based on air density
 - c. Spark timing based on vehicle speed
 - d. Oxygen sensor closed-loop operation

5. What voltage is commonly observed at the throttle position sensor when the throttle is fully open?
- a. 0.5 volts
 - b. 1.2 volts
 - c. 4.5 volts
 - d. 5.0 volts
6. How does the PCM respond to a wide-open throttle input from the TP sensor?
- a. Engages the torque converter clutch
 - b. Disables overdrive to prevent excessive load
 - c. Adjusts the fuel mixture to prevent a lean condition
 - d. Reduces injector pulse width
7. What is the primary input for rationality testing of the manifold absolute pressure (MAP) sensor?
- a. Exhaust gas recirculation (EGR) valve position
 - b. Cylinder head temperature (CHT) sensor readings
 - c. Intake air temperature sensor resistance
 - d. Throttle position sensor voltage
8. Which condition would trigger the PCM to engage clear flood mode?
- a. Wide-open throttle during engine cranking
 - b. High coolant temperature during idle
 - c. Low intake air temperature during startup
 - d. Excessive oxygen sensor voltage fluctuations
9. How is the diagnostic trouble code P0122 associated with the throttle position sensor interpreted?
- a. High voltage detected on the TP sensor circuit
 - b. Low voltage detected on the TP sensor circuit
 - c. Signal disagreement with the MAP sensor
 - d. Sensor response delay

10. What is the expected voltage at the TP sensor at idle under normal conditions?

- a. 0.3 to 0.5 volts
- b. 1.0 to 2.0 volts
- c. 2.0 to 3.0 volts
- d. 4.0 to 5.0 volts

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Correct Answers:

1. c
2. b
3. a
4. b
5. c
6. d
7. c
8. a
9. b
10. a