

**Automotive Electrical and Engine Performance 9th 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