Automotive Electrical and Engine Performance 8th Edition
Chapter 18 – Electronic Throttle Control System
Quiz B

1. What are the four basic functions of a vehicle's electronic throttle control system?

a. Input, processing, storage, and output

b. Monitoring, regulation, resetting, and feedback

c. Voltage control, air regulation, diagnostics, and stability

d. Signal acquisition, motor actuation, calibration, and idle control

2. Which position does the throttle plate default to during a fail-safe or limp-home mode?

a. Fully closed

b. Fully open

c. Partially open (16% to 20%)

d. Half open

3. What is the primary advantage of the Hall-effect throttle position sensor over potentiometer-based sensors?

a. Greater precision

b. Resistance to wear due to lack of contact

c. Compatibility with higher voltages

d. Improved signal clarity

4. How does the throttle actuator motor control the position of the throttle plate?

a. By varying its rotational speed

b. By reversing polarity through an H-bridge circuit

c. By using a stepper motor with precise pulses

d. By a series-parallel circuit with adjustable current

5. What does the diagnostic trouble code P2101 typically indicate?

a. Sensor signal mismatch between TP1 and TP2

b. Low circuit voltage for the throttle actuator motor

c. Overvoltage detected in the throttle control circuit

d. Sticking throttle plate due to corrosion

6. What happens during the throttle "Spring Test" performed by the PCM?

a. The throttle plate is driven fully closed and reopened

b. The actuator motor is pulsed to calibrate the TP sensors

c. The spring returns the throttle plate to its default position

d. The PCM compares APP and TP signals for accuracy

7. Why is a DC motor preferred over a stepper motor for electronic throttle control systems?

a. A stepper motor cannot handle the required torque

b. A stepper motor reacts too slowly for throttle applications

c. A DC motor provides more precise position control

d. A DC motor has higher energy efficiency

8. What should a technician expect when attempting to move the throttle plate manually with the ignition off?

a. The plate will remain stationary and resist movement

b. The plate will move and stay in place until manually returned

c. The plate will return to its default position when released

d. The plate will move to the closed position automatically

9. Which condition does not require throttle body cleaning?

a. Engine stalls during coast-down

b. Lower-than-normal idle speed

c. Intermittent throttle actuator motor operation

d. Rough idle

10. What tool is required to perform a throttle body relearn procedure?

a. Multimeter to measure TP sensor voltage

b. Factory-level scan tool or equivalent

c. Digital storage oscilloscope (DSO)

d. Vacuum gauge for intake manifold pressure

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Correct Answers:

1. a

2. c

3. b

4. b

5. d

6. c

7. b

8. c

9. c

10. a