

Automotive Electrical and Engine Performance 9th Edition
Chapter 24 – Fuel-Injection System Diagnosis and Service
Quiz A

1. What is the primary function of a noid light in fuel injection system diagnostics?
 - a. Measure fuel pressure in the fuel rail
 - b. Replace the injector and test for circuit function
 - c. Detect carbon deposits on injectors
 - d. Regulate the injector pulse width

2. Which step is crucial when testing fuel injector resistance?
 - a. Disconnecting the battery before testing
 - b. Measuring resistance at engine operating temperature only
 - c. Using the lowest ohmmeter setting for accurate readings
 - d. Applying direct current to the injector for real-time measurements

3. What does a rapid drop in fuel pressure after turning off the engine indicate?
 - a. A clogged air filter
 - b. A defective fuel-pressure regulator
 - c. Insufficient battery voltage to the fuel pump
 - d. A leaking injector or faulty fuel pump check valve

4. How does a peak-and-hold injector differ from a saturated switch injector?
 - a. Peak-and-hold injectors operate on low voltage throughout
 - b. Saturated switch injectors use high current initially
 - c. Peak-and-hold injectors use a high initial current, then a lower hold current
 - d. Saturated switch injectors operate without current modulation

5. What is the purpose of the injector pressure-drop balance test?
- To measure injector voltage-drop accuracy
 - To determine the fuel delivery uniformity across injectors
 - To clean the injectors during operation
 - To assess the injector resistance against manufacturer specifications
6. What does an uneven pressure drop during the pressure-drop balance test signify?
- An over-pressurized fuel rail
 - A restricted or leaking injector
 - Faulty PCM settings
 - Low fuel volume from the pump
7. What type of waveform is typically observed in a saturated switch injector during testing?
- Initial high current followed by steady low current
 - Continuous low voltage throughout
 - High voltage spikes during injector closure
 - Fluctuating voltage spikes with no set pattern
8. Why is it essential to replace high-pressure fuel lines in GDI systems after removal?
- The seals deform and cannot ensure a proper seal again
 - The lines become brittle under high pressure
 - The fuel lines are part of the return system
 - They cannot withstand cleaning chemicals
9. What is the recommended variance in injector resistance to ensure proper operation?
- Less than 0.1 ohm between injectors
 - 0.3 to 0.4 ohms between injectors
 - 0.5 to 1 ohm between injectors
 - No variance is acceptable

10. In fuel injection system servicing, which method is used to clean carbon deposits from the throttle plate?

- a. Using an injector pulser with a test fluid
- b. Applying cleaning chemicals through the air intake system
- c. Decarboning with a pressurized induction tool
- d. Both b and c

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Correct Answers:

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