

**Automotive Electrical and Engine Performance 9th Edition**  
**Chapter 38 – Fuel-Injection System Diagnosis and Service**  
**Multiple Choice Questions Quiz A**

1. In a port fuel-injection system, what is the purpose of performing a fuel pressure drop balance test?
  - a) To verify even fuel delivery across all injectors
  - b) To confirm the voltage integrity of the injector coil
  - c) To assess fuel pump operation
  - d) To ensure even air-fuel mixture across cylinders
  
2. Technician A states that a peak-and-hold injector requires a high initial current to open, followed by a lower hold current. Technician B says saturated injectors use a constant low current to remain open. Who is correct?
  - a) Technician A only
  - b) Technician B only
  - c) Both Technician A and Technician B
  - d) Neither Technician A nor B
  
3. Which reading during an injector voltage-drop test could indicate higher-than-normal resistance in the injector winding?
  - a) 0.1 volts lower than the specified drop
  - b) 0.5 volts above the average drop
  - c) 0.3 volts within the standard range
  - d) 1.2 volts above normal
  
4. What would a flashing noid light indicate when testing for an injector pulse?
  - a) The injector is shorted to ground
  - b) Proper pulsing by the PCM
  - c) An open in the power side of the injector circuit
  - d) Excessive resistance in the injector circuit

5. During a scope test, a saturated switch-type injector would display:
- a) A steady waveform with minimal voltage fluctuations
  - b) An initial high current spike followed by a holding current
  - c) A single peak at ignition followed by a sustained plateau
  - d) A voltage spike when the PCM stops grounding the injector
6. What type of injector has a typical resistance between 12 and 16 ohms?
- a) Peak-and-hold injector
  - b) Low-resistance injector
  - c) Pulse-width modulated injector
  - d) Saturated injector
7. Technician A claims that a fuel injector with excessive resistance will produce a dim noid light. Technician B states that a dim light may indicate a problem with the ground side. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both Technician A and Technician B
  - d) Neither Technician A nor B
8. The purpose of a pulse-width modulated injector control is to:
- a) Maintain constant voltage across the injector
  - b) Provide a continuous fuel flow
  - c) Allow precise fuel control by varying the ground duration
  - d) Limit the current to reduce wear on the injector coil

9. Which tool is ideal for identifying fuel injector faults by displaying real-time waveforms of injector performance?

- a) Multimeter
- b) Fuel pressure gauge
- c) Noid light
- d) Oscilloscope

10. During an injector resistance test, what would be the expected reading for a peak-and-hold injector?

- a) 10 to 12 ohms
- b) 1.5 to 4 ohms
- c) 8 to 10 ohms
- d) 12 to 16 ohms

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**Answer Key Quiz A**

**Correct Answers:**

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