

**Automotive Electrical and Engine Performance 9th Edition**  
**Chapter 28 – Module Reprogramming**  
**Quiz B**

1. What are the four basic functions of a vehicle computer?
  - a. Input, processing, storage, and output
  - b. Reading, printing, timing, and output
  - c. Memory allocation, processing, resetting, and storage
  - d. Voltage conversion, memory, input, and calibration
  
2. What is the SAE J2534 standard primarily used for?
  - a. Supporting off-board diagnostics
  - b. Standardizing pass-through device communication
  - c. Regulating internet-based diagnostics
  - d. Creating uniformity in on-board diagnostic connectors
  
3. How does EEPROM improve over PROM in engine module programming?
  - a. It is faster and requires less memory.
  - b. It can be reprogrammed without module replacement.
  - c. It eliminates the need for a pass-through device.
  - d. It integrates with battery maintainers automatically.
  
4. What is the primary function of a battery maintainer during reprogramming?
  - a. Ensures stable voltage throughout the programming event
  - b. Protects the EEPROM from memory loss
  - c. Resets module calibration after programming
  - d. Keeps on-board sensors powered

5. Why might off-board programming be preferred in some cases?
  - a. It minimizes the risk of voltage fluctuations.
  - b. It allows module programming outside of the vehicle.
  - c. It eliminates dependency on pass-through devices.
  - d. It is faster and more reliable for all vehicle types.
  
6. What is one advantage of using NASTF resources for reprogramming?
  - a. Provides universal access to manufacturer-specific tools
  - b. Offers comprehensive training and guidance
  - c. Ensures compatibility with aftermarket tuners
  - d. Reduces the need for battery maintainers
  
7. What was a major drawback of PROM-based programming?
  - a. Requiring replacement of the entire vehicle module
  - b. Inability to update software without PROM replacement
  - c. Lack of compatibility with modern vehicle APIs
  - d. Excessive cost due to software licensing
  
8. What type of programming allows for updates without physical connection?
  - a. Over-the-air (OTA) updates
  - b. Off-board programming with pass-through devices
  - c. Remote programming via internet control
  - d. Manufacturer-direct software calibration
  
9. Why are aftermarket programmers often noncompliant with EPA regulations?
  - a. They bypass emission control measures.
  - b. They increase horsepower and torque beyond legal limits.
  - c. They fail to meet standard OBD-II specifications.
  - d. They require proprietary equipment to operate.

10. What is the role of a pass-through device in module programming?

- a. Allows direct communication between the vehicle and computer
- b. Serves as an intermediary for J2534-based operations
- c. Replaces the need for on-board diagnostic tools
- d. All of the above

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**Correct Answers:**

1. d

2. b

3. c

4. a

5. b

6. c

7. a

8. d

9. c

10. d