

**Automotive Electrical and Engine Performance 9th Edition**  
**Chapter 19 – Security and Immobilizer Systems**  
**Multiple Choice Questions Quiz B**

1. What is the primary purpose of a vehicle immobilizer system?
  - a. To lock the doors automatically
  - b. To prevent unauthorized vehicle operation
  - c. To disable the airbag system during theft
  - d. To track vehicle location in real time
  
2. Which of the following is NOT a component of a typical immobilizer system?
  - a. Coil antenna
  - b. Security light
  - c. Transponder key
  - d. Alternator
  
3. How does the transponder key communicate with the immobilizer module?
  - a. Via inductive coupling
  - b. Through electrical contacts
  - c. Using a built-in transmitter
  - d. By emitting infrared signals
  
4. What condition is indicated when the security light flashes continuously after inserting the key?
  - a. Normal operation
  - b. Invalid key or fault detected
  - c. PCM failure
  - d. Mechanical lock cylinder issue

5. How does a passive keyless entry system detect the key fob?
  - a. Using infrared sensors
  - b. Through Bluetooth connection
  - c. With radio frequency antennas placed around the vehicle
  - d. By manually scanning the fob at the door handle
  
6. What precaution should be taken while diagnosing immobilizer issues?
  - a. Keep other keys or metal objects away
  - b. Disconnect the battery before inserting the key
  - c. Rotate the key in the lock cylinder three times
  - d. Ensure the transponder coil is disabled
  
7. What is the role of the PCM in a vehicle's immobilizer system?
  - a. Storing all vehicle keys in a database
  - b. Comparing the transponder ID with stored codes
  - c. Operating the door locks via a central switch
  - d. Generating voltage for the immobilizer antenna
  
8. What condition will result in a "no-crank" immobilizer fault?
  - a. Engine cranks but fails to start
  - b. Security light remains off
  - c. Starter motor does not engage
  - d. Immobilizer module sends invalid codes to the BCM

9. How is a push-button start system activated?

- a. By inserting the key in a hidden slot under the dash
- b. By pressing the button with the key fob directly
- c. By having the fob within range and pressing the button while depressing the brake pedal
- d. By using a backup battery module when the key is dead

10. Which code type is MOST likely used for diagnosing immobilizer faults?

- a. "P" codes (Powertrain)
- b. "B" codes (Body)
- c. "C" codes (Chassis)
- d. Both b and c

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**Answer Key Quiz B**

**Correct Answers:**

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