

Automotive Electrical and Engine Performance 9th Edition
Chapter 28 – PCM Fundamentals
Multiple Choice Questions Quiz A

1. What is the main function of the Powertrain Control Module (PCM) in a vehicle?
 - a) To only regulate the engine's fuel system
 - b) To control and coordinate engine and transmission operation
 - c) To monitor airbag deployment
 - d) To operate the air conditioning system

2. Which of the following best describes an actuator in an automotive system?
 - a) A device that measures speed or temperature
 - b) An output device that converts electrical energy into mechanical action
 - c) A memory unit for storing engine data
 - d) A network component for vehicle communication

3. What is the role of the analog-to-digital (AD) converter in a vehicle computer?
 - a) It stores digital data for later retrieval
 - b) It processes input voltage signals into binary format
 - c) It performs all arithmetic calculations for the PCM
 - d) It switches electrical signals on and off

4. Which sensor provides data to the computer regarding the oxygen levels in the exhaust system?
 - a) Mass Airflow (MAF) sensor
 - b) Manifold Absolute Pressure (MAP) sensor
 - c) Throttle Position (TP) sensor
 - d) Oxygen (O2S) sensor

5. In an automotive computer, what is the main purpose of Keep-Alive Memory (KAM)?
- a) To retain data only when the ignition is turned on
 - b) To store temporary data until the battery is disconnected
 - c) To store specific information for engine control that persists when the ignition is off
 - d) To erase all diagnostic trouble codes upon ignition shutdown
6. The process of engine mapping primarily contributes to which of the following outcomes?
- a) Diagnosing electronic faults in the PCM
 - b) Optimizing performance factors like driveability, fuel efficiency, and emissions
 - c) Determining vehicle communication protocols
 - d) Adjusting suspension settings based on road conditions
7. What is the primary distinction between high-side drivers and low-side drivers in output control?
- a) High-side drivers operate with lower voltage than low-side drivers
 - b) High-side drivers control power circuits; low-side drivers control ground circuits
 - c) High-side drivers control data networks; low-side drivers monitor the fuel system
 - d) Low-side drivers are only used for transmission control, while high-side drivers manage the engine
8. Which type of memory in automotive computers is both programmable and erasable, allowing for updating through a scan tool?
- a) ROM
 - b) PROM
 - c) EPROM
 - d) EEPROM
9. Pulse-width modulation (PWM) in vehicle computers is used to:
- a) Adjust the clock speed of the microprocessor
 - b) Control the timing of fuel injection
 - c) Create digital signals from analog inputs
 - d) Vary the operation speed of certain actuators, like blower motors

10. Which component in the vehicle computer functions as the "brain" and performs essential calculations and logical operations?

- a) Memory unit
- b) Input conditioner
- c) CPU
- d) PROM

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Answer Key Quiz A

Correct Answers:

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