

Automotive Electrical and Engine Performance 8th Edition
Chapter 8 – CAN and Network Communications
Quiz A

1. What is the function of twisted pair wiring in automotive network communications?
 - a. Transmitting high-frequency signals with minimal loss
 - b. Preventing electromagnetic interference (EMI) by canceling induced noise
 - c. Increasing the bandwidth of the network for faster communication
 - d. Ensuring compatibility with all vehicle modules

2. Which communication protocol uses a single-wire network for low-speed operations in General Motors vehicles?
 - a. CAN C
 - b. UART
 - c. SWCAN
 - d. ISO 9141

3. What is the primary purpose of a breakout box (BOB) in diagnostic procedures?
 - a. To visually display waveforms for voltage signals
 - b. To access specific DLC terminals for testing and diagnostics
 - c. To measure resistance across modules in a parallel circuit
 - d. To eliminate unnecessary modules from the BUS

4. How is redundancy achieved in differential signaling for CAN BUS systems?
 - a. Using equal but opposite voltages on two data wires
 - b. Adding multiple backup modules in case of failure
 - c. Introducing checksum protocols to validate data packets
 - d. Integrating software-based error correction methods

5. Which baud rate corresponds to Class B automotive network communications?
- a. 500 kbs
 - b. 10,000–125,000 bps
 - c. 125,000–1,000,000 bps
 - d. Below 10,000 bps
6. What is the role of terminating resistors in high-speed BUS systems?
- a. Balancing voltage across the network
 - b. Ensuring all modules receive the same data simultaneously
 - c. Reducing electrical interference and noise by stabilizing the circuit
 - d. Synchronizing data packets in a sequential order
7. In Chrysler vehicles, what is a unique feature of CCD communication compared to CAN?
- a. CCD uses a differential voltage of less than 20 millivolts
 - b. CCD transmits data at higher speeds for dynamic operations
 - c. CCD protocols allow wireless data transmission
 - d. CCD uses a single-wire connection for module communication
8. How is the "state of health" (SOH) monitored in Class 2 BUS systems?
- a. By the presence of a steady voltage in the DLC terminal
 - b. Through diagnostic trouble codes (DTCs) generated by companion modules
 - c. By the ability of modules to wake up after receiving data packets
 - d. Using external oscilloscopes to measure continuous signals
9. What data transfer protocol is commonly used in pre-CAN Honda and Toyota vehicles?
- a. LIN
 - b. ISO 9141-2
 - c. MOST
 - d. UBP

10. What voltage levels characterize active communication in a CAN BUS system?

a. CAN H = 3.5 V, CAN L = 1.5 V

b. CAN H = 5 V, CAN L = 0 V

c. CAN H = 3.3 V, CAN L = 1.7 V

d. CAN H = 12 V, CAN L = 7 V

Automotive Electrical and Engine Performance 8th Edition

Chapter 8 – CAN and Network Communications

Quiz A

Correct Answers:

1. b

2. c

3. b

4. a

5. b

6. c

7. d

8. b

9. b

10. a