Automotive Electrical and Engine Performance 9th 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

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Correct Answers:

1. b

2. c

3. b

4. a

5. b

6. c

7. d

8. b

9. b

10. a