Automotive Electrical and Engine Performance 9th Edition
Chapter 44 – On-Board Diagnosis
Multiple Choice Questions Quiz B

1. What is the primary purpose of the On-Board Diagnostics II (OBD-II) system?

a. Monitoring tire pressure

b. Detecting emission-related failures and maintaining compliance with standards

c. Providing wireless diagnostics for all vehicle components

d. Preventing electrical failures in the vehicle

2. What is the role of the Comprehensive Component Monitor (CCM)?

a. Ensuring accurate fuel injection timing

b. Monitoring all computer-controlled inputs and outputs for faults

c. Managing fuel efficiency algorithms

d. Reducing transmission overheating

3. What is the significance of freeze-frame data in OBD-II diagnostics?

a. To monitor oxygen sensor performance continuously

b. To capture data related to PCM faults from the last 50 trips

c. To record data at the moment an emission-related Diagnostic Trouble Code (DTC) is set

d. To identify the state of the vehicle during routine maintenance

4. Which of the following conditions is a requirement for an OBD-II monitor to operate?

a. Vehicle acceleration at 60 mph for 15 minutes

b. Engine coolant temperature reaching normal operating levels

c. The task manager overriding the diagnostic executive

d. Diagnostic freeze-frame snapshot capturing operational data

5. What does the PCM do when a misfire condition is detected that could damage the catalytic converter?

a. Logs the event in long-term memory only

b. Turns off the engine to prevent further misfire

c. Activates the MIL to flash continuously

d. Records a pending fault but does not activate the MIL

6. What are Type A OBD-II Diagnostic Trouble Codes (DTCs)?

a. Faults causing immediate MIL activation and potential emission issues

b. Minor diagnostic codes requiring two consecutive faults to activate

c. Electrical diagnostic codes monitored under manufacturer's protocols

d. Non-emission-related codes that trigger a service lamp

7. What is the primary function of the exponentially weighted moving average (EWMA) monitor?

a. To measure and store detailed misfire data

b. To smooth performance measurements over time for catalyst and EGR monitors

c. To check the rationality of oxygen sensor signals

d. To continuously monitor transmission efficiency

8. Which diagnostic tool operation mode is used for onboard monitoring of continuously tested systems?

a. Mode Four

b. Mode Six

c. Mode Seven

d. Mode Nine

9. What is a pending code in OBD-II diagnostics?

a. A DTC that has failed to reset after a specific warm-up cycle

b. A fault that requires one more failure to set as an official DTC

c. A critical failure that immediately triggers MIL activation

d. A dormant DTC that does not affect current driveability

10. What is the purpose of Mode Six in OBD-II diagnostics?

a. To clear all stored DTCs

b. To reset the MIL status to off

c. To analyze onboard monitoring results for noncontinuous systems

d. To check the fuel trim levels in real-time

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Answer Key Quiz B

Correct Answers:

1. b

2. b

3. c

4. b

5. c

6. a

7. b

8. c

9. b

10. d