Automotive Electrical and Engine Performance 9th Edition
Chapter 14 – Engine and Misfire Diagnosis
Quiz A

1. What is the purpose of a cranking compression test?

a. To measure cylinder pressure during engine cranking to assess sealing ability

b. To test oil flow and pressure in the lubrication system

c. To evaluate spark plug ignition timing across all cylinders

d. To diagnose coolant flow issues during engine startup

2. Which color of exhaust smoke indicates that oil is being burned in the combustion chamber?

a. Black

b. White (steam)

c. Blue

d. Green

3. What is the significance of a vacuum reading below 17 in. Hg during an idle vacuum test?

a. It suggests proper cylinder sealing and airflow

b. It indicates an engine misfire caused by fuel system issues

c. It may indicate poor cylinder sealing, a vacuum leak, or timing issues

d. It shows a normal operating range for high-altitude conditions

4. Why is a wet compression test performed after a dry compression test?

a. To determine if low compression is caused by worn piston rings or leaking valves

b. To adjust ignition timing for improved performance

c. To eliminate crankcase oil contamination during testing

d. To verify the functionality of the fuel injection system

5. What is the primary purpose of a cylinder leakage test?

a. To measure the oil pressure at specific engine speeds

b. To detect air leaks in the cooling system

c. To determine the condition of engine sealing components by identifying air leakage sources

d. To ensure consistent fuel delivery to all cylinders

6. What does white exhaust smoke during cold weather usually indicate?

a. Coolant leaking into the combustion chamber

b. Normal condensation of water vapor

c. Excessive fuel being burned in the combustion chamber

d. Engine oil burning due to worn valve seals

7. What is a common cause of a high-pressure reading during a dynamic cylinder pressure test?

a. A stuck-open exhaust valve

b. Incorrect ignition timing

c. Carbon buildup in the combustion chamber

d. A cracked cylinder head

8. How does a cylinder contribution test identify a misfiring cylinder?

a. By shutting off fuel injectors to observe RPM drops

b. By monitoring the air-fuel mixture using oxygen sensors

c. By testing crankshaft position sensor output for irregular patterns

d. By measuring pressure changes during the intake stroke

9. What does excessive crankcase pressure during a compression test suggest?

a. A worn or broken piston ring

b. A blocked catalytic converter

c. A misadjusted throttle position sensor

d. A defective harmonic balancer

10. What should be the first step in diagnosing an engine noise?

a. Performing a power balance test

b. Conducting a thorough visual inspection

c. Using an electronic stethoscope to locate the source

d. Measuring oil pressure under load

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Correct Answers:

1. a

2. c

3. c

4. a

5. c

6. b

7. c

8. a

9. a

10. b