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

1. What is the most common cause of blue exhaust smoke?

a. A clogged fuel injector

b. A leaking head gasket

c. Excessive fuel system pressure

d. Oil entering the combustion chamber through piston rings or valve seals

2. What tool is required to measure the compression pressure in a cranking compression test?

a. Oil pressure gauge

b. Cylinder pressure transducer

c. Compression gauge

d. Vacuum gauge

3. Which diagnostic method helps identify a defective exhaust valve?

a. Wet compression test

b. Cylinder leakage test

c. Running compression test

d. Idle vacuum test

4. What causes a rapidly fluctuating vacuum gauge needle at idle?

a. Worn piston rings

b. Worn valve guides

c. Incorrect air–fuel mixture

d. Retarded ignition timing

5. Which condition would typically trigger the oil pressure warning lamp?

a. Oil pressure drops below 10 PSI

b. An excessively high oil temperature is detected

c. Oil pressure drops below 4-7 PSI

d. A restricted oil pump pickup is present

6. What is the purpose of a cylinder contribution test?

a. To assess compression levels of each cylinder

b. To locate misfiring cylinders through spark testing

c. To monitor changes in engine speed when fuel injectors are disabled sequentially

d. To identify coolant leaks through exhaust gas analysis

7. What reading indicates a healthy cylinder during a cylinder leakage test?

a. Less than 30% leakage

b. Less than 20% leakage

c. Less than 10% leakage

d. Less than 15% leakage

8. What does a chemical head gasket test detect?

a. The level of coolant contamination with hydrocarbons

b. The presence of oxygen in the radiator

c. The pressure of exhaust gases within the crankcase

d. Oil seeping into the combustion chamber

9. Which condition is commonly diagnosed with a vacuum waveform test?

a. Retarded ignition timing

b. Unequal cylinder sealing

c. Excessive exhaust backpressure

d. Clogged fuel injectors

10. What is the main purpose of using a backpressure gauge?

a. To diagnose worn piston rings

b. To detect restricted exhaust systems

c. To measure compression leakage

d. To verify the health of the intake manifold

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Correct Answers:

1. d

2. c

3. a

4. b

5. c

6. d

7. c

8. b

9. a

10. b