Automotive Electrical and Engine Performance 9th Edition
Chapter 30 – Ignition System Diagnosis and Service
Multiple Choice Questions Quiz A

1. What is the primary function of a spark tester in ignition diagnostics?

a) To verify spark voltage is at least 25,000 volts

b) To identify correct spark plug gap

c) To ensure the coil is functioning correctly

d) To detect the presence of fuel in the combustion chamber

2. When testing an ignition coil with an ohmmeter, which of the following values would typically indicate a correctly functioning primary coil?

a) 100 to 450 ohms

b) Less than 1 to 3 ohms

c) 6,000 to 30,000 ohms

d) 500 to 1,500 ohms

3. During a visual inspection of the ignition system, which components should be checked to avoid secondary circuit issues?

a) Correct routing and condition of spark plug wires

b) Polarity of the ignition coil

c) Connection quality at the battery terminals

d) All of the above

4. What is the purpose of the automatic shutdown (ASD) relay in some ignition systems?

a) To prevent the engine from overheating

b) To enable voltage to the ignition coil only when the engine is cranking

c) To control fuel injection pulses

d) To automatically adjust ignition timing based on engine speed

5. Which section of a secondary ignition oscilloscope pattern indicates the duration of the spark?

a) Firing line

b) Intermediate oscillations

c) Spark line

d) Dwell section

6. What common issues could lead to a higher-than-normal firing line in a secondary ignition scope pattern?

a) Worn or fouled spark plugs

b) Spark plug gap set too wide

c) Lean air–fuel mixture

d) Both b and c

7. In troubleshooting a no-spark condition, what would the lack of pulsing on the negative side of the coil indicate?

a) A defective spark plug wire

b) A fault with the ignition module or pickup coil

c) A poor ground connection

d) A misadjusted ignition timing

8. If the secondary coil resistance of an ignition coil reads between 6,000 and 30,000 ohms, this indicates:

a) Normal secondary coil function

b) A fault in the primary circuit

c) Insufficient current flow in the ignition system

d) A misfire condition under load

9. What is the purpose of the dwell section in a secondary ignition scope pattern?

a) To measure the current flow into the coil

b) To show the length of time the coil is charging

c) To assess the air–fuel mixture ratio

d) To determine the voltage needed to create a spark

10. A spray bottle with water can be used to test secondary ignition components for:

a) Carbon tracking on spark plug wires

b) Misfiring caused by cracked insulation or loose connections

c) Engine misfire caused by excessive oil fouling

d) Both a and b

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Answer Key Quiz A

Correct Answers:

1. a
2. b
3. d
4. b
5. c
6. d
7. b
8. a
9. b
10. d