Advanced Automotive Technology Assessment

Automotive Technology · Answer Key · 8 Questions

1. In a four-stroke internal combustion engine, which component is responsible for translating the linear motion of the piston into rotational motion?

A) Camshaft
B) Crankshaft
C) Connecting rod
D) Wrist pin

2. Which sensor in an engine management system is primarily responsible for monitoring the oxygen content in the exhaust gas to adjust the air-fuel ratio?

A) Mass Air Flow sensor
B) Manifold Absolute Pressure sensor
C) Lambda sensor
D) Throttle Position sensor

3. What is the primary function of the planetary gear set in an automatic transmission?

A) To provide multiple gear ratios within a compact space
B) To engage the torque converter
C) To lock the differential during high-torque output
D) To regulate the hydraulic fluid pressure

4. In a lead-acid automotive battery, what is the chemical composition of the positive plates when fully charged?

A) Spongy lead
B) Lead dioxide
C) Sulfuric acid
D) Lead sulfate

5. Which type of suspension system design uses two wishbone-shaped arms to locate the wheel, typically providing better camber control during cornering?

A) MacPherson strut
B) Solid axle
C) Double wishbone
D) Torsion beam

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6. What is the stoichiometric air-fuel ratio for an internal combustion engine running on gasoline?

A) 12.5:1
B) 14.7:1
C) 16.2:1
D) 18.0:1

7. In an automotive cooling system, what is the primary purpose of the coolant recovery tank?

A) To store excess coolant as it expands when heated
B) To act as a secondary radiator
C) To filter sediment from the coolant
D) To increase the boiling point of the coolant

8. Which component of an alternator uses electromagnetic induction to produce alternating current, which is then converted to direct current?

A) Voltage regulator
B) Brushes
C) Rotor and Stator
D) Slip rings

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