Advanced Automotive Fundamentals

Automotive Technology · Answer Key · 8 Questions

1. In a four-stroke internal combustion engine, which stroke involves the piston moving from Bottom Dead Centre (BDC) to Top Dead Centre (TDC) with both valves closed?

A) Intake
B) Compression
C) Power
D) Exhaust

2. What is the primary function of an automotive torque converter in a vehicle with an automatic transmission?

A) To increase engine RPM
B) To provide a fluid coupling between the engine and transmission
C) To lock the driveshaft to the differential
D) To regulate the cooling system flow

3. Which component is responsible for regulating the electrical system voltage by converting the AC output of the alternator into DC?

A) Rectifier
B) Ignition coil
C) Voltage divider
D) Capacitor

4. What is the stoichiometric air-fuel ratio for an ideal combustion of gasoline in a petrol engine?

A) 10:1
B) 12.5:1
C) 14.7:1
D) 16.2:1

5. Which gear set configuration is commonly used in automatic transmissions to provide multiple gear ratios within a compact space?

A) Worm and sector
B) Planetary gear set
C) Hypoid gear
D) Rack and pinion

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6. What is the purpose of the 'caster' angle in vehicle wheel alignment?

A) To prevent tire wear on the inner edge
B) To provide directional stability and self-centering of the steering
C) To adjust the vertical alignment of the wheels
D) To control the side-to-side movement of the steering rack

7. In a disc brake system, which component exerts hydraulic pressure to move the brake pads against the rotor?

A) Master cylinder
B) Wheel cylinder
C) Brake caliper piston
D) Proportioning valve

8. What is the primary role of the catalytic converter in an exhaust system?

A) To reduce engine noise
B) To convert toxic gases into less harmful pollutants
C) To increase exhaust backpressure for engine timing
D) To filter particulate matter from diesel exhaust

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