

Automotive Technology Fundamentals

Automotive Technology · Answer Key · 15 Questions

1. What is the primary function of a catalytic converter in an internal combustion engine?

- A) To increase engine power by burning fuel more efficiently.
- B) To reduce harmful emissions by converting pollutants into less harmful substances.**
- C) To cool the engine by circulating coolant through a series of tubes.
- D) To provide spark to ignite the fuel-air mixture in the combustion chamber.

2. Which type of engine typically uses spark plugs to ignite the air-fuel mixture?

- A) Diesel engine
- B) Electric motor
- C) Gas turbine
- D) Gasoline (Otto cycle) engine**

3. What does ABS stand for in the context of automotive braking systems?

- A) Automatic Battery System
- B) Advanced Braking System
- C) Anti-lock Braking System**
- D) Automated Belt System

4. Which component is responsible for converting rotational mechanical energy into electrical energy in a running engine?

- A) Starter motor
- B) Ignition coil
- C) Alternator**
- D) Voltage regulator

5. What is the main purpose of the Engine Control Unit (ECU) in a modern vehicle?

- A) To control the opening and closing of doors.
- B) To manage and control various engine functions, emissions, and other vehicle systems.**
- C) To inflate airbags in case of an accident.
- D) To operate the windshield wipers and washers.

6. In a typical automatic transmission, what is the primary role of the torque converter?

- A) To provide a direct mechanical connection between the engine and the transmission.
- B) To smooth out engine vibrations and transfer power from the engine to the transmission.**
- C) To generate hydraulic pressure for the braking system.
- D) To store electrical energy for the starter motor.

7. Which of the following is a common type of suspension system used in vehicles?

- A) Pneumatic lift system
- B) Magnetic levitation system
- C) MacPherson strut suspension**
- D) Helical gear drive system

8. What is the purpose of an exhaust manifold in an internal combustion engine?

- A) To mix fuel and air before combustion.
- B) To direct exhaust gases from the cylinders into the exhaust system.**
- C) To cool the engine by circulating air.
- D) To provide lubrication to engine components.

9. Which fluid is essential for the proper functioning of a hydraulic power steering system?

- A) Brake fluid
- B) Engine oil
- C) Power steering fluid**
- D) Coolant

10. What is the primary function of a fuel injector in a modern gasoline engine?

- A) To clean the air entering the engine.
- B) To atomize and spray fuel into the intake manifold or directly into the combustion chamber.**
- C) To regulate the engine's idle speed.
- D) To ignite the fuel-air mixture.

11. Which part of the braking system is responsible for creating friction against the brake disc (rotor) to slow down the vehicle?

- A) Brake caliper**
- B) Brake master cylinder
- C) Brake fluid reservoir
- D) Brake booster

12. What does the 'V' in V6 or V8 engine configuration refer to?

- A) The number of valves per cylinder.
- B) The engine's displacement in liters.
- C) The arrangement of the cylinders in a 'V' shape.**
- D) The type of fuel the engine uses.

13. What is the typical octane rating of regular unleaded gasoline in Australia?

- A) 98
- B) 95
- C) 91**
- D) 100

14. Which component is part of the engine's valvetrain and controls the flow of air and fuel into the cylinder and exhaust gases out?

- A) Piston
- B) Connecting rod
- C) Camshaft**
- D) Crankshaft

15. What is the function of the radiator in an engine's cooling system?

- A) To heat the engine oil.
- B) To dissipate heat from the coolant to the surrounding air.**
- C) To store excess fuel.
- D) To regulate the transmission fluid pressure.