

Advanced Automotive History and Engineering

Automotive Technology · Answer Key · 15 Questions

1. In what year did Carl Benz receive the German patent DRP 37435 for his 'Motorwagen', widely considered the first automobile?

- A) 1883
- B) 1886**
- C) 1888
- D) 1890

2. What is the stoichiometric air-fuel ratio for gasoline engines, required for complete combustion?

- A) 12.5:1
- B) 14.7:1**
- C) 16.2:1
- D) 18.5:1

3. The Wankel rotary engine was famously commercialized by Mazda in 1967 with which specific vehicle model?

- A) RX-2
- B) RX-3
- C) Cosmo Sport**
- D) RX-7

4. What is the standard ISO classification for the fuel additive 'Cetane number' which measures the ignition quality of diesel fuel?

- A) ISO 5165**
- B) ISO 4260
- C) ISO 3104
- D) ISO 2719

5. Who is credited with inventing the first practical 'four-stroke' internal combustion engine in 1876?

- A) Gottlieb Daimler
- B) Wilhelm Maybach
- C) Nicolaus Otto**
- D) Rudolf Diesel

6. In 1908, the Ford Model T was introduced with a price tag of exactly how much?

- A) \$650
- B) \$825**
- C) \$950
- D) \$1,200

7. What is the maximum allowable voltage in a standard '48V mild hybrid' automotive electrical system architecture?

- A) 48V
- B) 52V
- C) 60V**
- D) 64V

8. The first mass-produced car with a monocoque chassis structure was the 1922 Lancia Lambda; which Italian engineer designed it?

- A) Vincenzo Lancia**
- B) Battista Farina
- C) Enzo Ferrari
- D) Vittorio Jano

9. In an internal combustion engine, what is the 'bore' referring to in a specification like 86mm x 86mm?

- A) Cylinder depth
- B) Cylinder diameter**
- C) Crankshaft stroke
- D) Connecting rod length

10. Which company produced the first commercial 'three-point' seatbelt, invented by Nils Bohlin in 1959?

- A) Mercedes-Benz
- B) Volvo**
- C) Saab
- D) Ford

11. How many gear ratios were available in the Ford 'Model T' transmission, which utilized a planetary gear system?

- A) 1
- B) 2**
- C) 3
- D) 4

12. The 'SAE J1939' protocol is primarily used for communication between components in which type of vehicle?

- A) Electric passenger cars
- B) Heavy-duty commercial vehicles**
- C) Motorcycles
- D) Off-road construction equipment

13. What is the minimum octane rating required for a fuel to be classified as 'Premium' in most Australian petrol stations?

- A) 91
- B) 93
- C) 95**
- D) 98

14. In 1997, the Toyota Prius became the first mass-produced hybrid vehicle; what was its internal project codename?

- A) 890T
- B) XW10**
- C) ZVW30
- D) NHW11

15. What is the name of the standard metric thread pitch (in mm) for a common M12 automotive bolt?

- A) 1.0mm
- B) 1.25mm
- C) 1.5mm
- D) 1.75mm**