Understanding Airbags: A Vehicle Safety System

Automotive Safety · Practice Test · 20 Questions

1. What is the primary purpose of an airbag in a vehicle?

A) To provide entertainment for passengers
B) To offer soft cushioning and restraint during a collision
C) To enhance the vehicle's aesthetic appeal
D) To improve fuel efficiency

2. Which of the following is NOT a component of an airbag system?

A) Airbag cushion
B) Inflation module
C) Impact sensor
D) Engine control unit

3. Airbags are considered what type of restraint system?

A) Active restraint
B) Passive restraint
C) Primary restraint
D) Secondary restraint

4. Why are airbags classified as 'passive' restraints?

A) Because they require occupant action to deploy
B) Because they deploy automatically without occupant action
C) Because they are only active during high-speed collisions
D) Because they are a backup to active restraints

5. Who is credited with independently developing the airbag specifically for automobile use in the United States?

A) Arthur Parrott
B) Harold Round
C) John W. Hetrick
D) Walter Linderer

6. What was the primary reason for initial limited success and some fatalities with early commercial airbag designs in the 1970s?

A) Lack of consumer interest
B) Inability to inflate fast enough
C) Technical design flaws and safety concerns
D) High manufacturing costs

7. What chemical process is often used to inflate airbag modules?

A) Compressed air
B) Nitrogen gas expansion
C) Pyrotechnic process
D) Electric current activation

8. What is the electronic controller unit (ECU) in an airbag system responsible for?

A) Inflating the airbag
B) Detecting the collision type, angle, and severity
C) Providing occupant comfort
D) Controlling the vehicle's braking system

9. Modern vehicles can contain up to how many airbag modules?

A) Two
B) Four
C) Six
D) Ten

10. What type of safety system is an Anti-lock braking system (ABS) considered?

A) Passive safety device
B) Active safety device
C) Supplemental safety device
D) Occupant restraint device

11. The aviation safety community uses the terms 'active' and 'passive' in the opposite sense from the automotive industry. True or False?

A) True
B) False

12. What breakthrough in developing airbag crash sensors occurred in 1967?

A) The invention of the pyrotechnic inflator
B) The development of the ball-in-tube mechanism
C) The introduction of compressed air cylinders
D) The patent for inflatable seat belts

13. What was the name of General Motors' first airbag system marketed in the 1970s?

A) Auto-Ceptor
B) Air Cushion Restraint System (ACRS)
C) Supplemental Inflatable Restraint
D) Safety Net System

14. In the 1970s, GM's ACRS system sometimes lacked which type of seat belt?

A) Lap belts
B) Shoulder belts
C) Three-point belts
D) Seat belt extenders

15. What does SRS stand for in the context of airbags?

A) System for Rapid Safety
B) Supplemental Restraint System
C) Smart Response System
D) Safety Regulation Standard

16. Which automaker introduced the airbag as an option on its flagship saloon model in West Germany in 1981?

A) Porsche
B) Honda
C) Mercedes-Benz
D) BMW

17. What was the first car to have driver and passenger airbags as standard equipment in 1987?

A) Porsche 944 Turbo
B) Honda Legend
C) Chrysler LeBaron
D) Lincoln Town Car

18. Which US automaker was the first to fit a driver-side airbag as standard equipment in 1988?

A) Ford
B) General Motors
C) Chrysler
D) Dodge

19. The United States Intermodal Surface Transportation Efficiency Act of 1991 mandated airbags for which vehicles built after a certain date?

A) All vehicles
B) Passenger cars and light trucks
C) Commercial trucks only
D) Motorcycles and recreational vehicles

20. What was the purpose of NHTSA initiating new rules for advanced airbags in 1998?

A) To standardize airbag deployment speeds
B) To provide automakers with more flexibility and improve occupant protection while minimizing risks to vulnerable occupants
C) To mandate the use of compressed air for inflation
D) To eliminate the need for seat belts