

What is an Airbag?

Worksheet

An airbag is an inflatable safety device that deploys automatically during a vehicle collision to cushion occupants and prevent direct impact with the steering wheel, dashboard or window.

Questions

1. What triggers an airbag to deploy?

- A) Manual activation by driver
- B) Sensors detecting sudden impact or deceleration
- C) Reaching a certain speed
- D) Brake pedal being pressed

2. How long does an airbag take to inflate?

- A) 1-2 seconds
- B) 500 milliseconds
- C) 50-100 milliseconds
- D) 5-10 seconds

3. What gas fills an airbag?

- A) Oxygen
- B) Nitrogen (from chemical reaction)
- C) Carbon dioxide
- D) Helium

4. Are airbags sufficient protection alone?

- A) Yes — airbags protect fully
- B) No — airbags work best with seatbelts
- C) Airbags replace seatbelts entirely
- D) Seatbelts replace airbags

5. A car travelling at 60 km/h crashes head-on into a wall. How fast does the airbag deploy?

6. A side-impact collision occurs (car hit from the side). What airbags activate?

7. Why do airbags deflate so quickly?

8. Define: What is an airbag?

9. Define: How fast does an airbag deploy?

10. Define: Where are airbags located in a car?

Answer Key

1. B) Sensors detecting sudden impact or deceleration — Airbag sensors detect sudden collision impact and trigger automatic deployment.
2. C) 50–100 milliseconds — Airbags deploy in 50–100 milliseconds, faster than a blink.
3. B) Nitrogen (from chemical reaction) — An explosive chemical reaction produces nitrogen gas to inflate the airbag.
4. B) No — airbags work best with seatbelts — Airbags and seatbelts together provide optimal crash protection.
5. Impact occurs at 60 km/h Sensors detect sudden deceleration Airbag inflates in 50–100 milliseconds (about 1/20th of a second) Driver is cushioned by the airbag Airbag deflates within 100 ms to allow occupant to move and exit
6. Side sensors detect lateral impact Side airbags near the struck side deploy (door pillars, roof line) Curtain airbags deploy along the roof to protect windows Front airbags may also deploy if deceleration is severe Multiple airbags work together to protect occupants
7. Airbags must cushion impact (inflate fast) But must also allow occupants to breathe and move Quick deflation (within 100–200 ms) prevents suffocation Occupants can then move away from impact zone or exit vehicle
8. A safety system that automatically inflates during a collision to cushion occupants and reduce injury.
9. 50–100 milliseconds — faster than the blink of an eye.
10. Steering wheel (driver), dashboard (passenger), sides (doors/pillars), and roof line (curtain airbags).

Bounlu

All cards, step-by-step solutions and an AI tutor are in the Notek app.
Promy turns exam dates into automatic reminders.