

Sensor Technologies-Quiz

1. Which sensor technology measures distance by emitting laser pulses and timing the return signal?

A. LiDAR

B. RADAR

C. Camera

D. Ultrasonic Sensor

2. Which sensor is most robust in adverse weather conditions such as rain, fog, and snow?

A. RADAR

B. LiDAR

C. GPS

D. Camera

3. What is a key limitation of LiDAR in autonomous vehicles?

A. Does not directly measure object velocity

B. Cannot operate at night

C. Cannot detect pedestrians

D. Extremely short sensing range

4. Which camera type detects infrared radiation based on object temperature rather than reflected visible light?

A. Thermal Camera

B. RGB Camera

C. Stereo Camera

D. Monocular Camera

5. Which sensor provides high semantic information such as color, text, and object appearance but does not directly measure depth?

A. 2D Camera

B. LiDAR

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C. RADAR

D. Ultrasonic Sensor

6. Ultrasonic sensors are most suitable for which application?

A. Parking assistance

B. Highway-speed obstacle detection

C. Long-range object classification

D. High-definition mapping

7. Why is sensor fusion critical in autonomous vehicles?

A. It compensates for limitations of individual sensors

B. It reduces vehicle cost

C. It allows the vehicle to rely on one primary sensor

D. It replaces the need for GPS

8. Which sensor directly measures relative velocity using the Doppler effect?

A. RADAR

B. Camera

C. LiDAR

D. GPS

9. What is a major limitation of GPS for autonomous driving?

A. Not reliable for lane-level localization

B. Does not work without internet

C. Cannot estimate vehicle speed

D. Only works during daytime

10. Which supporting sensor is especially useful for short-term positioning when GPS is unavailable, such as in tunnels?

A. IMU

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- B. LiDAR
- C. RADAR
- D. Thermal Camera