

PRACTICE EXAM 30

1. Consider the statement: "A working, code-free ADAS sensor can still be misaimed and require calibration." Which evaluation is correct?

- A. True — a sensor can be electrically healthy yet have a wrong spatial reference
- B. False — no codes always means correct aim
- C. True — but only on hybrid vehicles
- D. False — calibration is only for failed sensors

2. Evaluate: "Radar can read the text on a road sign better than a camera." Which is correct?

- A. True — radar excels at classification
- B. False — reading sign text is a camera strength, not radar's
- C. True — radar uses optical recognition
- D. False — neither sensor can read signs

3. Consider: "Replacing a windshield never requires recalibrating the forward camera." Which evaluation is correct?

- A. True — the camera is unaffected by glass
- B. True — only the radar is affected
- C. False — but only if the glass is tinted
- D. False — glass replacement disturbs the camera's aim and requires recalibration

4. Evaluate: "A high-speed CAN bus at rest should read about 60 ohms between CAN-H and CAN-L." Which is correct?

- A. False — it should read 120 ohms

- B. False — it should read 240 ohms
- C. True — two 120-ohm terminators in parallel give about 60 ohms
- D. False — it should read 30 ohms

5. Consider: "A voltage-drop test must be performed with the circuit loaded and operating." Which evaluation is correct?

- A. True — current must flow for the drop to appear
- B. False — it must be done de-energized
- C. True — but only on the ground side
- D. False — voltage drop is measured at the battery only

6. Evaluate: "Ultrasonic sensors measure long-range closing speed using the Doppler effect." Which is correct?

- A. True — ultrasonic sensors use Doppler shift
- B. False — that describes radar; ultrasonic sensors are short-range echo timing
- C. True — but only in clear weather
- D. False — ultrasonic sensors measure temperature

7. Consider: "When several ADAS systems fail together with lost-communication codes, replacing each sensor individually is the best first step." Which evaluation is correct?

- A. True — each sensor likely failed independently
- B. True — sensor replacement is always fastest
- C. False — the best first step is to investigate a shared cause
- D. False — the codes should simply be cleared

8. Evaluate: "A new, never-installed forward camera does not require calibration because it is brand new." Which is correct?

- A. True — new parts arrive pre-aimed
- B. True — calibration is only for used sensors
- C. False — a new camera has no established reference and must be calibrated
- D. False — a new camera only needs a software update

9. Consider: "The gateway module routes and translates communication between the vehicle's networks." Which evaluation is correct?

- A. True — that is the gateway's core function
- B. False — the gateway aims the radar
- C. False — the gateway measures glass clarity
- D. False — the gateway detects close obstacles

10. Evaluate: "Incorrect ride height can misaim body-mounted ADAS sensors." Which is correct?

- A. True — ride-height changes alter sensor aim and must be corrected before calibration
- B. False — ride height does not affect sensors
- C. True — but only for ultrasonic sensors
- D. False — only the gateway is affected

11. Consider: "A blind spot warning system relies on the forward long-range radar." Which evaluation is correct?

- A. True — blind spot uses the forward radar
- B. True — blind spot uses the forward camera
- C. True — blind spot uses ultrasonic sensors
- D. False — blind spot warning relies on the rear corner radars

12. Evaluate: "A clean post-repair scan alone fully confirms a safety-critical ADAS repair." Which is correct?

- A. True — a clean scan is always sufficient
- B. True — functional checks are only for hybrids
- C. True — the scan recalibrates the sensors
- D. False — functional verification is also required because a misaimed sensor can pass a scan

13. Consider: "Excessive or metallic paint on a bumper fascia can attenuate a forward radar signal." Which evaluation is correct?

- A. True — refinishing in front of a radar can degrade its signal
- B. False — paint has no effect on radar
- C. True — but only on hybrid vehicles
- D. False — only the windshield affects radar

14. Evaluate: "Static calibration uses fixed targets with the vehicle stationary." Which is correct?

- A. True — that is the definition of static calibration
- B. False — static calibration is performed while driving
- C. False — static calibration uses no targets
- D. False — static calibration is done on a bench

15. Consider: "A camera-based feature that fails only in heavy fog and works in clear weather is always a failed camera module." Which evaluation is correct?

- A. True — fog-only failure means hardware failure
- B. True — the gateway fails in fog
- C. True — the radar interferes in fog

D. False — this is often a normal visibility limitation

16. Evaluate: "Programming a module and calibrating a sensor are the same operation." Which is correct?

A. True — they are identical

B. True — calibration loads software

C. True — programming aims the sensor

D. False — programming loads software while calibration sets the spatial reference

17. Consider: "A radar reporting a 'blocked' condition after a snowstorm always means the radar has failed internally." Which evaluation is correct?

A. True — blocked codes mean hardware failure

B. False — it is often a correctable obstruction, not a failure

C. True — the module must be replaced

D. True — the gateway has failed

18. Evaluate: "The Doppler effect lets radar measure an object's closing speed." Which is correct?

A. False — Doppler measures temperature

B. False — Doppler measures color

C. False — radar cannot measure speed

D. True — radar reads the frequency shift to determine relative velocity

19. Consider: "A module that appears dead to the scan tool is always internally failed." Which evaluation is correct?

A. True — no response means failure

- B. True — power and ground never matter
- C. False — it may simply lack power, ground, or a bus connection
- D. False — it is always a software issue

20. Evaluate: "Sensor fusion combines complementary sensors so each one's strengths cover another's weaknesses." Which is correct?

- A. True — that is the purpose of sensor fusion
- B. False — fusion disables redundant sensors
- C. False — fusion routes all data through one wire
- D. False — fusion welds sensors together

21. Consider: "A forward radar's narrow beam means aim accuracy is unimportant." Which evaluation is correct?

- A. True — radar self-corrects its aim
- B. True — narrow beams tolerate error
- C. True — aim only matters for cameras
- D. False — a small angular error becomes a large miss at distance

22. Evaluate: "Pre-repair and post-repair scans bookend ADAS service." Which is correct?

- A. True — pre-repair establishes a baseline and post-repair confirms completion
- B. False — only one scan is ever needed
- C. False — scans recalibrate the sensors
- D. False — scans are only for hybrids

23. Consider: "Ultrasonic sensors are best suited for highway distance-keeping." Which evaluation is correct?

- A. True — ultrasonic sensors have long range
- B. True — they replace radar on the highway
- C. False — they are short-range, low-speed parking sensors
- D. False — they measure closing speed at distance

24. Evaluate: "A composite-vehicle parameter question should be answered from the technician's memory of a similar real vehicle." Which is correct?

- A. True — real experience is most reliable
- B. True — the reference is often wrong
- C. False — the value defined in the reference governs
- D. False — such questions cannot be answered

25. Consider: "Thrust angle describes the direction the rear axle steers the vehicle relative to the geometric centerline." Which evaluation is correct?

- A. False — thrust angle is the windshield tilt
- B. True — it represents the vehicle's true direction of travel
- C. False — thrust angle is the radar's frequency
- D. False — thrust angle is the camera's field of view

26. Evaluate: "A dynamic calibration can complete on any road regardless of lane markings." Which is correct?

- A. True — markings are irrelevant
- B. True — radar handles the markings
- C. True — the gateway provides markings
- D. False — clear lane markings are typically required for the camera to establish its reference

27. Consider: "An active ADAS system only illuminates a warning lamp and never controls the vehicle." Which evaluation is correct?

- A. True — active systems are warning-only
- B. True — active and passive are the same
- C. True — active systems are disabled
- D. False — active systems intervene in braking, steering, or acceleration

28. Evaluate: "Most camera and radar complaints are caused by a truly failed sensor requiring replacement." Which is correct?

- A. True — replacement is almost always needed
- B. False — most trace to view/blockage, aim/calibration, network, or normal limits
- C. True — sensors rarely have other issues
- D. False — most complaints are gateway-only

29. Consider: "A replaced ADAS module may require programming, coding/configuration, initialization, and calibration." Which evaluation is correct?

- A. False — a replaced module is plug-and-play
- B. False — only calibration is ever needed
- C. True — a replacement often needs both electronic setup and calibration
- D. False — programming and calibration are the same step

30. Evaluate: "A static calibration can be performed accurately on a sloped, cluttered shop floor." Which is correct?

- A. True — the floor does not matter
- B. True — clutter improves the camera's reference
- C. False — static calibration requires a level floor and clean background

D. False — only dynamic calibration needs a level floor

31. Consider: "A poor shared ground can cause erratic, intermittent symptoms across several modules." Which evaluation is correct?

A. False — grounds affect only one module

B. True — shared grounds can produce widespread intermittent faults

C. False — a poor ground changes glass spec

D. False — a poor ground only affects tire sensors

32. Evaluate: "Park-assist systems that steer the vehicle require no special precautions during testing." Which is correct?

A. True — steering systems are harmless

B. True — the battery must simply be charged

C. True — only the gateway must be disabled

D. False — the area must be clear because the system can command steering

33. Consider: "A near-zero resistance reading between CAN-H and CAN-L indicates a short." Which evaluation is correct?

A. True — near-zero resistance signals a short across the bus

B. False — near-zero means healthy termination

C. False — near-zero means an open

D. False — near-zero means a missing terminator

34. Evaluate: "Traffic sign recognition relies primarily on the forward-facing camera." Which is correct?

A. False — it relies on the rear corner radar

- B. False — it relies on ultrasonic sensors
- C. True — the camera reads and interprets the signs
- D. False — it relies on the gateway

35. Consider: "An open in the CAN bus wiring produces an essentially infinite resistance reading." Which evaluation is correct?

- A. False — an open reads about 60 ohms
- B. True — an open breaks continuity, giving a very high reading
- C. False — an open reads near zero
- D. False — an open reads exactly 120 ohms

36. Evaluate: "A miscalibrated forward collision system can be more dangerous than an obviously inoperative one." Which is correct?

- A. True — the driver trusts a system that may fail silently
- B. False — an inoperative system is always worse
- C. True — miscalibration raises fuel consumption
- D. False — miscalibration only affects parking

37. Consider: "After clearing snow that caused a radar blockage, no further action is needed before returning the vehicle." Which evaluation is correct?

- A. True — clearing the snow completes the job
- B. False — the feature's function should be verified
- C. True — verification is unnecessary
- D. False — the radar must always be replaced

38. Evaluate: "A forward camera looks through the windshield, so glass quality affects its performance." Which is correct?

- A. False — the camera does not use the glass
- B. True — incorrect glass can distort the camera's view
- C. False — only radar is affected by glass
- D. False — glass quality is irrelevant if no codes are present

39. Consider: "Lost-communication codes name a relationship between modules and are useful for localizing faults." Which evaluation is correct?

- A. False — the codes are meaningless
- B. False — the codes name only failed sensors
- C. False — the codes apply only to hybrids
- D. True — they identify which module can no longer hear which, aiding diagnosis

40. Evaluate: "A feature defined in the reference to default to ON after an ignition cycle is faulty if it turns back on." Which is correct?

- A. True — reactivation is always a fault
- B. True — the switch must be replaced
- C. False — reactivation matches the defined default and is normal
- D. False — the gateway is forcing it on

41. Consider: "Forward radar serves adaptive cruise, forward collision warning, and automatic emergency braking." Which evaluation is correct?

- A. False — those use the rear corner radar
- B. True — these forward features rely on the forward radar
- C. False — those use ultrasonic sensors
- D. False — those use the driver-monitoring camera

42. Evaluate: "A schematic shows expected values and the DMM shows actual values, and diagnosis compares the two." Which is correct?

- A. False — schematics show actual values
- B. True — the discrepancy between expected and actual localizes the fault
- C. False — the DMM shows expected values
- D. False — diagnosis ignores both

43. Consider: "Heavy snow packed on a fascia that disables a radar and resumes once cleared indicates a permanent hardware failure." Which evaluation is correct?

- A. True — buildup means the radar is broken
- B. True — the gateway has failed
- C. False — this is a likely normal, self-resolving blockage
- D. False — the camera is distorted

44. Evaluate: "Calibration target placement accuracy directly determines static calibration accuracy." Which is correct?

- A. False — target placement is irrelevant
- B. False — only the scan tool matters
- C. True — a misplaced target teaches the sensor a wrong reference
- D. False — the bay lighting is the only factor

45. Consider: "A unit-conversion error during target setup can corrupt the calibration." Which evaluation is correct?

- A. True — a conversion error mislocates the target
- B. False — conversions never affect calibration
- C. False — the scan tool auto-corrects units

D. False — conversion changes the radar frequency

46. Evaluate: "Functional verification, including a road test where needed, confirms an ADAS repair works." Which is correct?

A. False — a completion message is enough

B. False — road testing is never needed

C. False — verification is only for hybrids

D. True — verifying actual function closes the repair loop

47. Consider: "A radar with good power, ground, and intact bus wiring that still cannot communicate points to the module or its bus interface." Which evaluation is correct?

A. True — once the external circuit checks out, the module is the suspect

B. False — it points to a painted ultrasonic sensor

C. False — it points to a distorted windshield

D. False — it points to a thrust-angle error

48. Evaluate: "Surround-view cameras stitch multiple wide-angle images into a bird's-eye view for low-speed maneuvering." Which is correct?

A. True — that is how surround-view systems work

B. False — they use radar returns

C. False — they operate at highway speeds for collision avoidance

D. False — they face the driver

49. Consider: "Multiple simultaneous ADAS faults are most often caused by four independent sensor failures." Which evaluation is correct?

A. True — independent failures are most common

- B. True — shared causes are rare
- C. False — a single shared cause usually explains all the symptoms
- D. False — such faults cannot be diagnosed

50. Evaluate: "An ADAS repair is confirmed only when a post-repair scan plus functional verification both pass." Which is correct?

- A. False — a completion message alone confirms it
- B. True — both the scan and functional verification are required
- C. False — clearing codes confirms it
- D. False — a normal start confirms it

Answer Key & Full Answer Explanations

1. A — The statement is true: a sensor can be electrically healthy and code-free yet have a wrong spatial reference. Calibration is not limited to hybrids or failed sensors. A correct reference is required for accurate data even when the sensor works.
2. B — The statement is false: reading sign text is a camera strength, not radar's. Radar excels at distance and closing speed but classifies poorly. This is why radar and camera are fused.
3. D — The statement is false because glass replacement disturbs the camera's aim and requires recalibration. The camera is affected by glass, and tint is not the deciding factor. Recalibration after glass service is mandatory.
4. C — The statement is true: two 120-ohm terminators in parallel give about 60 ohms. Readings of 120, 240, or 30 would indicate faults. The ~60-ohm value confirms healthy termination.
5. A — The statement is true: a voltage-drop test requires the circuit loaded and operating so current reveals the resistance. It is not a de-energized or battery-only test, and it applies to both power and ground sides. Current must flow for the drop to appear.

6. B — The statement is false: Doppler-based closing-speed measurement describes radar, while ultrasonic sensors use short-range echo timing. Ultrasonic sensors are not long-range and do not measure temperature. The two technologies serve different roles.

7. C — The statement is false: the best first step with multiple failures and lost-communication codes is to investigate a shared cause. Independent replacement or clearing codes ignores the pattern. The simplest shared cause usually explains all symptoms.

8. C — The statement is false because a new camera has no established reference and must be calibrated. New parts are not pre-aimed or exempt, and calibration is more than a software update. New sensors need calibration too.

9. A — The statement is true: routing and translating communication between networks is the gateway's core function. It does not aim radar, measure clarity, or detect obstacles. Its central role makes it key to multi-system diagnosis.

10. A — The statement is true: ride-height changes alter sensor aim and must be corrected before calibration. Ride height does affect sensors, not just ultrasonic ones or the gateway. Calibrating at the wrong height locks in the error.

11. D — The statement is false because blind spot warning relies on the rear corner radars, not the forward radar, camera, or ultrasonic sensors. The affected feature identifies the corner radar. Mapping features to sensors guides diagnosis.

12. D — The statement is false: functional verification is also required because a misaimed sensor can pass a scan. A clean scan is not always sufficient, functional checks are not hybrid-only, and the scan does not recalibrate. Verification closes the loop.

13. A — The statement is true: refinishing in front of a radar with excessive or metallic paint can degrade its signal. Paint does affect radar, regardless of vehicle type, and the windshield is not the only factor. Refinish work directly affects radar transmission.

14. A — The statement is true: static calibration uses fixed targets with the vehicle stationary. It is not a driving, target-free, or bench procedure. The stationary-plus-targets signature defines static calibration.

15. D — The statement is false: a fog-only failure that clears in good weather is often a normal visibility limitation, not a failed module, gateway, or radar interference. The camera cannot see through fog by design. Condition-specific symptoms usually indicate normal limits.

16. D — The statement is false: programming loads software while calibration sets the spatial reference. They are not identical, and neither aims by loading software. Electronic setup and calibration are different required jobs.

17. B — The statement is false: a blocked condition after a snowstorm is often a correctable obstruction, not an internal failure. Replacing the module or blaming the gateway skips the obvious cause. Blockage is a normal protective response.

18. D — The statement is true: radar reads the Doppler frequency shift to determine relative velocity. Doppler does not measure temperature or color, and radar can measure speed. This direct velocity measurement is radar's signature strength.

19. C — The statement is false: a module that appears dead may simply lack power, ground, or a bus connection. No response does not always mean failure, and power and ground do matter. Verify the basics before condemning the module.

20. A — The statement is true: sensor fusion combines complementary sensors so each one's strengths cover another's weaknesses. It does not disable, single-wire, or weld sensors. Fusion lets radar measure distance while a camera classifies.

21. D — The statement is false: a small angular error becomes a large miss at distance, so aim accuracy is critical. Radar does not self-correct, narrow beams do not tolerate error, and aim matters for radar too. Beam geometry magnifies small aim errors.

22. A — The statement is true: the pre-repair scan establishes a baseline and the post-repair scan confirms completion. More than one scan is used, scans do not recalibrate, and they are not hybrid-only. Scans bookend ADAS service.

23. C — The statement is false: ultrasonic sensors are short-range, low-speed parking sensors, not highway distance-keeping devices. They do not have long range or measure distant closing speed. Radar handles highway distance and speed.

24. C — The statement is false: composite-vehicle parameter questions are answered from the value defined in the reference, not real-vehicle memory. The reference is not usually wrong and such questions are answerable. The reference is the single source of truth.

25. B — The statement is true: thrust angle represents the vehicle's true direction of travel relative to the geometric centerline. It is not windshield tilt, radar frequency, or camera field of view. Forward sensors are referenced to the thrust line.

26. D — The statement is false: clear lane markings are typically required for a dynamic calibration so the camera can establish its reference. Markings are not irrelevant, and neither radar nor the gateway supplies them. Dynamic calibration depends on road conditions.

27. D — The statement is false: active systems intervene in braking, steering, or acceleration, not warning only. Active and passive are not the same, and active systems are not disabled. Automatic emergency braking is a classic active system.

28. B — The statement is false: most camera and radar complaints trace to view/blockage, aim/calibration, network, or normal limits rather than a failed sensor. Replacement is not almost always needed, and the cause is not gateway-only. Sorting the failure type precedes replacement.

29. C — The statement is true: a replacement often needs both electronic setup (programming, configuration, initialization) and calibration. It is not plug-and-play, calibration alone is not enough, and programming and calibration differ. Replacement requires both.

30. C — The statement is false: static calibration requires a level floor and clean background. The floor and clutter do matter, and the level requirement is not dynamic-only. The bay environment is part of the procedure.

31. B — The statement is true: shared grounds can produce widespread intermittent faults. A poor ground does not affect only one module, change glass spec, or affect only tire sensors. Shared grounds are a classic source of multi-system symptoms.

32. D — The statement is false: park-assist that steers requires the area to be clear because the system can command steering. Steering systems are not harmless, and battery charge or gateway state do not address the actuation hazard. Any system that can move the vehicle needs a cleared area.

33. A — The statement is true: near-zero resistance between CAN-H and CAN-L indicates a short across the bus. Healthy termination reads about 60, an open reads very high, and a missing terminator reads about 120. Near-zero specifically signals a short.

34. C — The statement is true: traffic sign recognition relies primarily on the forward-facing camera, which reads and interprets signs. It does not rely on the corner radar, ultrasonic sensors, or the gateway. Sign reading is a camera capability.

35. B — The statement is true: an open breaks continuity and gives a very high resistance reading. It does not read 60, near zero, or exactly 120. An open isolates modules from the network.

36. A — The statement is true: the driver trusts a system that may fail silently, making a miscalibrated collision system more dangerous than an obviously dead one. An inoperative system is not always worse in this sense, miscalibration is not about fuel, and it affects more than parking. This is why verification is the standard.

37. B — The statement is false: after clearing the snow, the feature's function should be verified before returning the vehicle. Clearing alone does not complete the job, verification is necessary, and replacement is not required. Verification confirms the correction worked.

38. B — The statement is true: incorrect glass can distort the camera's view because the camera looks through the windshield. The camera does use the glass, radar is not the only affected sensor, and absence of codes does not guarantee correct glass. Glass quality matters to the camera.

39. D — The statement is true: lost-communication codes identify which module can no longer hear which, aiding diagnosis. They are not meaningless, not limited to failed sensors, and not hybrid-only. The relationships are a map to the root cause.

40. C — The statement is false: reactivation matching the defined default is normal, not a fault. The switch need not be replaced and the gateway is not forcing it on. Defined defaults are not faults.

41. B — The statement is true: adaptive cruise, forward collision warning, and automatic emergency braking rely on the forward radar. They do not use the corner radar, ultrasonic sensors, or the driver-monitoring camera. These forward features map to the forward radar.

42. B — The statement is true: the schematic shows expected values, the DMM shows actual values, and the discrepancy localizes the fault. Schematics do not show actual values, the DMM does not show expected values, and diagnosis uses both. Comparison is the core diagnostic discipline.

43. C — The statement is false: a radar disabled by snow buildup that resumes once cleared is a likely normal, self-resolving blockage, not a permanent failure or a gateway or camera fault. Blockage protection is designed behavior. Clearing the buildup restores function.

44. C — The statement is true: a misplaced target teaches the sensor a wrong reference, so target placement accuracy directly determines static calibration accuracy. Placement is not irrelevant, the scan tool is not the only factor, and lighting is not the only one either. Target accuracy is calibration accuracy.

45. A — The statement is true: a unit-conversion error mislocates the target and corrupts the calibration. Conversions do affect calibration, the scan tool does not auto-correct, and conversion does not change radar frequency. Precision in conversion is precision in calibration.

46. D — The statement is true: verifying actual function, including a road test where needed, closes the repair loop. A completion message is not enough, road testing is sometimes needed, and verification is not hybrid-only. Functional verification confirms the repair works.

47. A — The statement is true: once power, ground, and bus wiring check out, a radar that still cannot communicate points to the module or its bus interface. It does not point to a painted sensor, distorted windshield, or thrust-angle error. The module becomes the suspect after the external circuit is verified.

48. A — The statement is true: surround-view cameras stitch multiple wide-angle images into a bird's-eye view for low-speed maneuvering. They do not use radar, operate at highway speed for collision avoidance, or face the driver. This describes how surround-view systems work.

49. C — The statement is false: multiple simultaneous faults are most often explained by a single shared cause, not four independent failures. Shared causes are common, not rare, and such faults are diagnosable. Diagnose the pattern, not each symptom.

50. B — The statement is true: a repair is confirmed only when a post-repair scan plus functional verification both pass. A completion message, cleared codes, or a normal start are not sufficient. Verification closes the loop on every ADAS repair.

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