PRACTICE EXAM 8: ASE L4 SIMULATION (50 QUESTIONS)

1. A shop is asked to perform an ADAS calibration on a vehicle with a fuel tank showing three-eighths full. The OEM procedure specifies a minimum of one-half full for this calibration. The correct action is:

A. Proceeding with the calibration since three-eighths is close to one-half

B. Adding fuel to bring the tank above the OEM-specified minimum before proceeding

C. Calibrating and marking the vehicle for a recalibration the next service visit

D. Reprogramming the ADAS Central Module to compensate for the fuel level difference

2. A customer declines a required post-windshield calibration, stating they do not want to pay for the additional service. The correct professional response is:

A. Performing the calibration for free to maintain the customer's business relationship

B. Completing the windshield replacement and delivering the vehicle without calibration

C. Documenting the customer's decision and the safety implications before any further action

D. Refusing to perform the windshield replacement entirely if calibration is declined

3. A battery support unit should be connected before initiating an ADAS calibration primarily because:

A. Voltage drops during calibration can cause the procedure to fail or produce incorrect results

B. Battery support units improve the scan tool's communication with vehicle modules

C. The OEM requires a battery support unit for every diagnostic scan performed on ADAS vehicles

D. Battery support units speed up the calibration procedure by over 30 percent

4. The professional documentation package for a completed ADAS repair should include:

A. Only the post-repair scan report showing all codes cleared from the vehicle

B. Only the final customer invoice with a brief description of the repair performed

C. Only the scan tool output from the calibration procedure showing success status

D. Pre-repair scan, service information used, calibration records, post-repair scan, and verification notes

5. A customer's vehicle has arrived with an OEM service campaign that has not been addressed. The technician is performing an unrelated ADAS repair. The correct action is:

A. Ignoring the campaign since it is unrelated to the current repair being performed

B. Informing the customer of the open campaign and documenting the notification in the repair file

C. Performing the campaign work without informing the customer since it is free

D. Refusing to perform the current ADAS repair until the campaign is addressed separately

6. An OEM service portal requires the technician to register a replacement radar module's serial number before the module will function on the vehicle. The technician has completed this step. The next required action is:

A. Delivering the vehicle to the customer since the module has been registered successfully

B. Performing a dynamic calibration drive cycle without any static preparation work

C. Waiting 24 hours for the OEM system to propagate the registration before testing

D. Completing the OEM-specified programming, coding, and calibration sequence for the module

7. A shop has been offered a discount on an aftermarket ADAS target kit that claims to work with multiple vehicle brands. The correct professional evaluation considers:

A. Whether the kit's targets meet OEM specifications for each brand and whether OEM position statements accept aftermarket equivalents

B. Only the upfront cost savings compared to purchasing individual OEM target sets per brand

C. The number of competing shops also using the same aftermarket kit for their work

D. The color options available for the target boards in the aftermarket kit's offerings

8. A radar calibration has been completed with the battery support unit showing voltage held steady at 13.2 volts throughout. The scan tool reports successful completion. The calibration can be considered valid if:

A. The battery support unit simply stayed connected during the entire procedure

B. The scan tool reported success at the end of the final calibration step

C. All preconditions were verified before starting and the procedure completed without violations

D. The technician followed an aftermarket calibration procedure matching the OEM's specification

9. A customer's vehicle has a lifted suspension modification that exceeds factory ride height specifications by 4 inches. The ADAS requires calibration after an unrelated collision repair. The correct response is:

A. Performing the calibration normally since the lift does not affect ADAS systems directly

B. Declining the calibration until the vehicle is returned to factory ride height specifications

C. Adjusting the calibration target heights to compensate for the 4-inch suspension lift

D. Calibrating with the vehicle in its lifted configuration per customer preference

10. A technician identifies that the customer's windshield has an aftermarket sunshade film covering the upper portion, including the camera's view area. The customer is in for a camera calibration after a prior windshield service. The correct action is:

A. Proceeding with the calibration despite the film obscuring the camera's view

B. Replacing the windshield again with a new unit at the customer's expense

C. Performing the calibration and noting the film in the repair records for later review

D. Requesting removal of the aftermarket film from the camera's viewing area before calibrating

11. On the composite vehicle, static calibration of the forward radar requires specific environmental preconditions. Which of the following is not a typical precondition for this procedure?

A. The shop floor must be level within the OEM-specified slope tolerance

B. Ambient lighting in the shop must be bright and even across the calibration area

C. The vehicle must be driven at sustained highway speeds before starting the procedure

D. The windshield must be clean and free of obstructions affecting any view

12. A newly-hired technician asks a senior technician why documenting the pre-repair scan matters. The most accurate explanation is that the pre-repair scan documentation:

A. Establishes the vehicle's starting condition and protects the shop from pre-existing issues

B. Is required only for insurance-reimbursed collision repair work on newer vehicles

C. Allows the scan tool to operate at faster speeds during subsequent diagnostic sessions

D. Prevents the OEM from rejecting warranty claims on unrelated future service visits

13. A camera calibration has been aborted three times with the same "target not detected" error. The technician has verified target placement, lighting, and battery support. The most productive next investigation is:

A. Replacing the forward camera immediately with a new unit from OEM stock

B. Performing a four-wheel alignment to adjust the vehicle's geometric reference

C. Delivering the vehicle to the customer since the target was not detectable

D. Reviewing OEM service information for TSBs or procedural updates affecting this calibration

14. A customer whose vehicle has an open safety recall brings the vehicle for an ADAS calibration. The recall affects the same ADAS system being calibrated. The correct action is:

A. Performing the calibration first, then informing the customer of the recall for a separate visit

B. Addressing the recall first or referring the customer to a dealer, then completing the calibration

C. Ignoring the recall since it is unrelated to the current shop appointment

D. Performing the calibration and the recall work simultaneously without dealer involvement

15. During post-repair verification after a radar module replacement, operational testing reveals that adaptive cruise control does not engage when the switch is pressed. The scan tool shows no stored codes. The most productive next action is:

A. Delivering the vehicle to the customer since no codes are currently stored

B. Replacing the radar module a second time with another new unit from inventory

C. Reviewing scan tool data for ACC activation criteria and verifying all conditions are met

D. Performing a four-wheel alignment to reset the radar's geometric reference

16. A shop performing ADAS calibration must retain documentation for how long following the completion of the repair work?

A. Per shop policy, typically 7 years or longer to align with insurance and litigation timelines

B. Only until the customer has picked up the vehicle after the repair is complete

C. Only 30 days following the completion of the repair for basic record-keeping

D. No minimum retention is required for any ADAS-related repair documentation at all

17. A vehicle has been brought in for forward camera calibration. The vehicle has a cracked dashboard with pieces of the dashboard lying inside the windshield's lower edge. The correct action before calibrating is:

A. Proceeding with the calibration since the dashboard damage is not related to the camera

B. Replacing the entire dashboard before any camera calibration can be performed correctly

C. Ignoring the dashboard condition as it does not affect the camera's view path

D. Removing the loose dashboard pieces from the windshield area to meet preconditions

18. On the composite vehicle, a forward radar calibration precondition specifies that the vehicle must be:

A. Loaded with the maximum rated passenger and cargo weight during calibration

B. Empty of passengers and cargo during the calibration procedure

C. Carrying exactly one passenger in the front right seat during the calibration

D. Parked outdoors in direct sunlight for at least one hour before calibration

19. A calibration drive cycle for a forward camera requires sustained driving within the OEM-specified speed range. The technician drives at 72 mph consistently throughout the drive, but the OEM specification limits the range to 30 to 65 mph. The most likely outcome is:

A. The dynamic calibration does not converge because the speed exceeded the specified range

B. The calibration converges faster due to the higher sustained vehicle speed

C. Normal operation since 72 mph is close enough to the 65 mph upper limit

D. Automatic compensation by the scan tool for the speed range violation

20. A customer reports a concern with the ADAS system on their vehicle. The technician's pre-repair scan shows codes related to a recent service event. The customer is not the original owner and is unaware of the service history. The correct response is:

A. Assuming the previous shop performed the work correctly and looking elsewhere for the cause

B. Performing a complete static calibration of every sensor as a starting point

C. Replacing every module that shows codes as a precaution for the new customer

D. Investigating the service history through VIN-based records and discussing findings with the customer

21. A technician has completed 2 hours of calibration work on a vehicle, and the scan tool finally shows successful completion. However, during the post-calibration road test, ACC performs poorly and the forward radar behavior is erratic. The correct response is:

A. Delivering the vehicle to the customer since the scan tool reported calibration success

B. Calling the customer to explain the remaining issues while keeping the vehicle indefinitely

C. Investigating preconditions and procedural compliance — calibration may have been silently incorrect

D. Replacing the forward radar with a new unit as the most likely source of poor performance

22. A shop technician has been asked to calibrate a vehicle that is equipped with a fleet-managed dashcam mounted directly in the forward camera's field of view. The correct action is:

A. Proceeding with the calibration regardless of the dashcam's position in the camera view

B. Requesting the fleet operator to temporarily remove the dashcam before calibration proceeds

C. Adjusting the camera's internal reference to compensate for the dashcam's obstruction

D. Declining the calibration since the fleet dashcam cannot be moved from its position

23. A customer presents a non-OEM replacement part they purchased online and asks the shop to install it on their ADAS-equipped vehicle. The part is for a sensor related to ADAS operation. The correct response is:

A. Installing the part and hoping the customer's choice of part will function properly

B. Charging the customer extra to install the non-OEM part they purchased themselves

C. Rejecting the part entirely because non-OEM parts are never acceptable for ADAS

D. Discussing the OEM position statement on acceptable parts and the potential liability before proceeding

24. A technician is explaining to an apprentice why operational verification is required in addition to scan tool verification. The most accurate explanation is that operational verification:

A. Confirms the feature actually works under real-world conditions — a scan tool-only check is insufficient

B. Is only required when the customer specifically requests a road test after repair

C. Replaces the need for scan tool verification since the road test is more thorough

D. Is only required on vehicles with manual transmissions rather than automatic transmissions

25. A customer's vehicle shows a history code for low battery voltage that appeared during the last cold weather event. The current battery voltage is normal, and the customer has not reported any ADAS issues. The correct documentation approach is:

A. Ignoring the history code since the battery voltage is currently normal

B. Clearing the history code without any customer discussion or documentation

C. Noting the history code and related condition in the repair file, with customer notification

D. Refusing to perform any work on the vehicle until the battery is replaced

26. A shop performing ADAS calibration is considering whether to purchase OEM service information subscriptions for each brand they service. The primary argument in favor of subscribing is that:

A. Subscriptions are mandatory for all shops performing any automotive repair work

B. Current OEM procedures and position statements are essential for correct professional service

C. OEM subscriptions include free calibration equipment rental for member shops

D. Subscriptions are significantly cheaper than any aftermarket service information

27. A vehicle being serviced has had its windshield replaced at a glass shop. The pre-repair scan at the current shop shows a "forward camera calibration incomplete" code. The owner states that the glass shop told them calibration was not required. The correct response is:

A. Clearing the code and delivering the vehicle per the customer's understanding

B. Refusing to work on the vehicle until the glass shop's work is completely redone

C. Contacting the glass shop directly to demand they pay for the calibration

D. Informing the customer that calibration is required per OEM and offering to perform it

28. A radar calibration requires the shop floor to be level within 1 degree of total slope. A technician is using a laser level to verify the floor condition. The correct precondition verification documents:

A. The actual slope measurement with photographs or written records for the repair file

B. Only the technician's verbal confirmation to the customer that the floor is level

C. A simple "floor OK" note in the work order without any measurement data

D. No floor documentation since the scan tool will detect any excessive slope

29. A customer's vehicle has arrived with an aftermarket trailer hitch mounted near one of the rear corner radars. The customer reports no ADAS complaints. The correct pre-service inspection action is:

A. Removing the aftermarket trailer hitch entirely before any service work begins

B. Performing all ADAS work without acknowledging the aftermarket hitch installation

C. Documenting the hitch's position and potential ADAS impact before proceeding with service

D. Refusing to perform any work until the aftermarket hitch is verified as OEM-approved

30. Post-repair verification for an ADAS repair should include a test drive under which general set of conditions?

A. Low-speed parking lot maneuvers only at under 5 mph to verify basic function

B. Conditions representative of the customer's typical driving and that exercise the repaired features

C. Only highway driving at sustained 60+ mph regardless of the customer's normal use

D. Only driving at the shop's location without leaving the immediate area

31. A forward radar calibration on the composite vehicle has a specific target-distance requirement. The scan tool procedure expects the target at a measured distance from a specific vehicle reference point. The correct reference point is established using:

A. The front bumper cover edge regardless of any alignment with the vehicle centerline

B. The vehicle's nose ornament or badge as the primary reference for measurement

C. OEM service information specifying the specific reference (typically the front axle centerline)

D. The scan tool's laser beam projected forward from the vehicle to the target

32. Silent miscalibration of a forward radar is most often caused by which of the following?

A. A complete internal radar hardware failure that prevents any signal transmission

B. Scan tool software errors that mismeasure the radar's actual output

C. Power loss during the calibration procedure triggering immediate abort

D. Unverified preconditions — floor slope, vehicle loading, tire pressures, or target placement

33. A radar module has been replaced. The scan tool shows programming completed but displays a "configuration required" message. The technician has not yet performed the coding step. The correct action is:

A. Completing the OEM-specified coding procedure before proceeding to calibration

B. Proceeding directly to calibration since programming completed successfully

C. Delivering the vehicle and allowing the coding to complete during normal driving

D. Replacing the radar module with a different unit since coding should be automatic

34. A customer reports that their forward radar was calibrated two months ago. The AEB feature now triggers aggressively on roadside guardrails that should not trigger. The most productive first investigation considers:

A. Replacing the ADAS Central Module as a likely source of the new behavior

B. Possible radar miscalibration from the original service or a subsequent mechanical disturbance

C. Reprogramming the Electronic Brake Control Module with the most current software

D. Normal AEB operation — occasional false triggers on guardrails are expected

35. On the composite vehicle, a dynamic calibration drive cycle specifies a minimum sustained speed range and a minimum duration. The required conditions most accurately reflect:

A. Only the speed range — duration has no effect on calibration convergence

B. Only the duration — speed has no effect on calibration convergence outcomes

C. Both the speed range and the duration, along with other OEM specifications for the drive

D. Neither parameter — calibration drives have no specific requirements beyond driving

36. A forward radar module's static calibration has been aborted with a "target not detected" error. The technician has verified target placement at OEM specification and target condition. The next most productive investigation is:

A. Replacing the forward radar module based solely on the target-not-detected error

B. Performing a dynamic calibration only, bypassing the static calibration requirement

C. Delivering the vehicle to the customer since static calibration could not be completed

D. Inspecting for any obstructions between the radar and target, including the front bumper cover

37. A shop is considering adding ADAS calibration capability. The equipment investment analysis should include:

A. Initial target kit cost, scan tool coverage for multiple brands, and floor-leveling if needed

B. Only the cost of the most expensive OEM target kit available on the market

C. Only the personnel training costs without considering equipment requirements

D. Only the workshop rental space increase if dedicated calibration area is needed

38. A forward radar has been replaced and the scan tool displays "calibration required" immediately after programming. This is:

A. An error message indicating the replacement module is defective

B. The expected state following programming — calibration is a required separate step

C. An indication that the battery voltage is below the required minimum for testing

D. A scan tool display error that can be cleared without performing any calibration

39. A customer's vehicle has had its bumper cover replaced with OEM parts at a body shop. The body shop did not perform post-repair calibration. The customer arrives at a different shop for calibration only. The correct action is:

A. Refusing to calibrate the vehicle since the body shop should have completed the work

B. Charging the customer extra for the calibration beyond standard rates due to the delay

C. Performing the calibration, documenting the previous incomplete work, and verifying results

D. Completing only half the calibration since the body shop began the overall repair process

40. A static calibration has been completed successfully on the scan tool, and operational testing shows the ADAS system performing as expected. The final required action before delivery is:

A. Clearing all codes and immediately releasing the vehicle to the customer

B. Keeping the vehicle overnight to verify the calibration remains stable

C. Performing another complete dynamic calibration drive as a verification step

D. Documenting the complete calibration process in the repair file including photos

41. A customer is picking up their vehicle after an ADAS repair. The handoff conversation should include:

A. Clear communication of what was done, what to expect, and responsibilities going forward

B. Only the total cost of the repair without details about the specific work performed

C. Only a brief comment that the ADAS features are now working as intended

D. Technical diagnostic details read directly from the scan tool output reports

42. A technician is calibrating a forward camera on the composite vehicle. The camera heater has activated automatically during the procedure due to cold ambient temperatures. The correct action is:

A. Aborting the calibration and waiting for the shop to warm up above 50°F first

B. Allowing the heater to operate normally as it does not interfere with calibration

C. Disconnecting the camera heater temporarily during the calibration procedure

D. Performing the calibration outdoors where the heater would not be needed at all

43. Post-repair documentation for an ADAS service should be retained per the shop's records retention policy primarily because:

A. OEM warranty requires all repair documentation for five years minimum per repair

B. Customers may request access to their own vehicle's complete repair records

C. Insurance and litigation timelines can extend many years beyond the repair completion

D. Local government regulations mandate specific retention periods for any repair

44. A customer's vehicle has a non-OEM bumper cover installed. The customer requests ADAS calibration after a front-end collision repair was completed at another shop. The correct response is:

A. Calibrating the vehicle with no concerns about the non-OEM bumper cover conditions

B. Refusing to perform the calibration under any circumstances whatsoever

C. Charging the customer a premium for calibrating a vehicle with aftermarket parts

D. Discussing the potential impact of non-OEM parts on radar transparency before calibrating

45. A shop technician is completing a work order for an ADAS repair. The work order should clearly document:

A. All work performed, parts used, service information consulted, and verification performed

B. Only the customer's original complaint and the final delivery status of the vehicle

C. Only the total labor hours and parts costs for customer invoice generation

D. Only the specific diagnostic codes that were present in the pre-repair scan

46. A vehicle has had its rear bumper cover replaced during a minor collision repair. The ultrasonic sensors were removed before the cover was painted, then reinstalled after the paint had cured. The correct post-installation verification is:

A. Delivering the vehicle immediately since the proper removal procedure was followed

B. Scan tool data review confirming each sensor reports plausible distance values during static testing

C. Replacing every ultrasonic sensor as a precaution regardless of removal and reinstallation

D. Performing a dynamic calibration drive cycle to reset all ultrasonic system parameters

47. A customer reports that the rear parking sensors have stopped working in cold weather only, with normal function in warm conditions. The sensors appear clean upon warm-shop inspection. The most productive investigation considers:

A. Replacing the Ultrasonic Control Module immediately as a precaution

B. Reprogramming the ADAS Central Module with the current firmware for cold weather

C. Normal operation that the customer should accept as a feature limitation in winter

D. Ice or snow accumulation on the transducer faces that melts between driving and arrival

48. A single ultrasonic sensor has been identified as internally failed. The sensor's replacement procedure on a typical vehicle includes:

A. Complete bumper cover replacement along with the single sensor replacement work

B. Replacing all ultrasonic sensors on the vehicle simultaneously for consistency

C. Individual sensor replacement followed by scan tool verification of operation

D. Reprogramming of the entire ADAS Central Module with the current firmware release

49. A customer requests a sensor replacement on their vehicle because they "want new sensors." No fault has been identified during pre-service diagnosis. The correct professional response is:

A. Replacing every ultrasonic sensor as requested without further discussion of the issue

B. Explaining that no fault has been found and that replacement may not resolve the concern

C. Charging the customer extra for sensor replacement without any diagnostic justification

D. Refusing to discuss the request and redirecting the customer to routine maintenance

50. A bumper cover repainting has been scheduled at a body shop. The vehicle has ADAS ultrasonic sensors. The correct pre-paint procedure is:

A. Removing the ultrasonic sensors before painting to prevent paint overcoating their faces

B. Covering the sensor faces with painter's tape while the cover remains in place

C. Applying a protective layer of wax to the sensor faces before the painting process

D. Painting over the sensors completely to improve sealing against weather exposure

PRACTICE EXAM 8: ANSWER KEY AND EXPLANATIONS

1. B — OEM calibration preconditions exist for specific technical reasons, and three-eighths full is below the one-half minimum specification. Adding fuel to meet the precondition is the correct action — "close enough" introduces silent miscalibration risk because fuel weight affects ride height and sensor geometry. Proceeding without meeting preconditions is a common cause of calibrations that pass scan tool checks but fail in real-world use.

2. C — Professional practice requires documenting the customer's decision to decline required work along with the safety implications before any further action. This protects the shop from liability if an incident occurs after delivery and gives the customer a clear record of what was communicated. The work order should reflect both the recommendation and the customer's response.

3. A — Battery voltage drops during ADAS calibration can cause the procedure to fail mid-execution or, worse, complete with silently incorrect parameters. A battery support unit maintains voltage above the required minimum (typically 12.6 volts) throughout the procedure. This is why the battery support unit is not optional equipment for ADAS calibration — it is required equipment.

4. D — Complete ADAS repair documentation includes the pre-repair scan, service information consulted (TSBs, position statements, OEM procedures), calibration records with scan tool output and photos, the post-repair scan, and operational verification notes. This package serves OEM compliance, insurance, customer communication, and liability protection — shortcuts in any area compromise all four purposes.

5. B — When a vehicle has an unaddressed OEM service campaign and the shop is performing unrelated work, the professional response is to inform the customer of the campaign and document the notification. This protects the shop from liability and respects the customer's right to make informed decisions. Ignoring the campaign or proceeding without notification exposes both parties to risk.

6. D — After an OEM service portal registration for a replacement module, the required subsequent work is the OEM-specified programming, coding, initialization, and calibration sequence. Registration authorizes the module but does not make it functional on the vehicle — completing the full OEM-specified workflow is required before the module operates correctly.

7. A — Evaluating an aftermarket ADAS target kit requires checking whether the targets meet OEM specifications for each brand and whether OEM position statements accept aftermarket

equivalents. Cost alone is insufficient — a less expensive kit that doesn't meet OEM specifications produces silent miscalibration and liability exposure. Professional evaluation balances cost against technical and legal acceptability.

8. C — A valid ADAS calibration requires that all preconditions were verified before starting (vehicle loading, tire pressures, fluid levels, fuel level, shop floor slope, target placement, lighting) and that the procedure completed without violations. Scan tool success alone is insufficient — silent miscalibration is the scenario where the tool reports success but the actual calibration is wrong due to unmet preconditions.

9. B — A suspension modification exceeding factory ride height by 4 inches is outside the geometric parameters ADAS calibrations are designed for. The correct professional response is declining the calibration until the vehicle is returned to factory specifications. Calibrating a modified vehicle would produce silent miscalibration with significant safety implications the shop would be responsible for.

10. D — A windshield film in the camera's view area prevents correct calibration and represents a pre-existing obstruction that must be addressed before the procedure can succeed. Requesting removal is the correct technical response — the customer may not realize the film affects calibration, and documenting the conversation and film removal protects everyone involved.

11. C — On the composite vehicle, forward radar static calibration does not require sustained highway driving before the procedure — that would be a dynamic calibration requirement. The static procedure requires a level floor, bright even lighting, clean windshield, and other environmental preconditions, but sustained highway driving is the exception on this list.

12. A — Pre-repair scan documentation establishes the vehicle's starting condition before work begins, which protects the shop from responsibility for pre-existing DTCs and creates the diagnostic baseline for subsequent work. It is not limited to specific repair categories, does not affect scan tool speed, and is not tied to warranty claims — it is foundational professional practice for ADAS service.

13. D — After three failed calibrations with verified preconditions and equipment, reviewing OEM service information for recent TSBs or procedural updates is the next productive step. TSBs sometimes document known calibration issues and provide updated procedures that resolve them. This is faster than speculative module replacement and more productive than assuming the camera is defective.

14. B — When a vehicle has a safety recall affecting the same ADAS system being serviced, the recall must be addressed first (at the shop if capable, or through referral to a dealer). Calibrating a system with an open safety recall leaves safety concerns unaddressed and creates liability exposure regardless of how well the calibration is performed.

15. C — When the scan tool shows no codes but a feature is not working as expected, the next step is reviewing scan tool data for the feature's activation criteria and verifying all conditions are met. This identifies whether the feature is disabled by design under specific conditions, whether an enable criterion is failing, or whether diagnosis should continue elsewhere.

16. A — ADAS repair documentation should be retained per shop policy for extended periods, typically 7 years or longer, to align with insurance and litigation timelines. These timelines can extend well beyond the repair date, and the documentation may be requested years later to defend the shop's work. Short retention periods create exposure the shop cannot afford.

17. D — Loose dashboard pieces inside the windshield area present a pre-calibration precondition that must be addressed. Removing the debris is the correct action — it prevents interference with calibration and ensures the camera's view is clear. Proceeding with debris present is likely to cause calibration failure, and replacing the dashboard is unnecessary for this specific issue.

18. B — On the composite vehicle, forward radar calibration preconditions specify that the vehicle must be empty of passengers and cargo during calibration. Passenger or cargo weight affects ride height, which affects the angle at which the radar views the world. The vehicle must be in its baseline unloaded configuration for correct geometric reference.

19. A — Sustained driving at 72 mph when the OEM specifies 30 to 65 mph violates the speed range precondition. The dynamic calibration cannot converge because the radar is outside its expected operating reference range, and the scan tool will not complete the calibration. The correct response is to drive within the specified range during the calibration.

20. D — When a vehicle has service history from prior shops or previous owners, investigating that history through VIN-based records and discussing findings with the customer is the professional approach. The customer has a right to know what has been done to their vehicle, and this context affects the current diagnosis and repair plan significantly.

21. C — Poor real-world performance after a scan tool-reported successful calibration is the classic signature of silent miscalibration from an unmet precondition. Investigating which precondition may have been violated (tire pressure, loading, floor slope, target placement, battery voltage) is the productive next step. Delivering a vehicle with silently miscalibrated ADAS is not professionally acceptable.

22. B — A fleet-managed dashcam mounted in the forward camera's field of view physically obstructs calibration reference visibility. The correct professional response is requesting temporary removal by the fleet operator. Calibrating with an obstruction produces incorrect results, and adjusting the camera's internal reference to compensate is not a supported practice.

23. D — Non-OEM parts for ADAS-related components require discussing the OEM position statement on acceptable parts and the potential liability before installation. This discussion respects the customer's purchasing decision while ensuring they understand the technical and liability

implications. Refusing without discussion is unnecessarily rigid, but installing without discussion exposes the shop to risk.

24. A — Operational verification confirms that a repaired feature actually works under real-world conditions, which a scan tool-only check cannot do. The scan tool verifies module communication and absence of stored codes; operational testing verifies the feature's actual function during driving. Both forms of verification are required for complete professional service.

25. C — A history code for low battery voltage reflects a real event that occurred and should be noted in the repair file with customer notification. This creates a documented baseline that helps with future diagnosis and demonstrates professional due diligence. Ignoring or clearing history codes without discussion loses valuable diagnostic information.

26. B — Current OEM procedures and position statements are essential for correct professional ADAS service. OEM service information subscriptions are the primary means of accessing this material, and the investment is justified by the quality and currency of information received. Other benefits cited are inaccurate or irrelevant compared to the core value of current procedures.

27. D — When a glass shop fails to perform required calibration and informs the customer it is not needed, the correct response is to inform the customer that calibration is required per OEM and offer to perform it. This respects the OEM position statement, addresses the customer's safety, and documents the shop's professional response to the issue.

28. A — Shop floor slope verification for ADAS calibration should be documented with actual measurement data — photographs of the laser level reading or written records. This creates evidence that preconditions were met and protects the shop from claims about silent miscalibration. Simple verbal or written statements without measurements are inadequate for this critical precondition.

29. C — An aftermarket trailer hitch near a rear corner radar may affect radar operation, and the correct pre-service action is to document the hitch's position and potential ADAS impact before proceeding. This creates a record that the condition existed at intake and informs subsequent calibration or diagnostic work. Ignoring the hitch or demanding removal without justification are both inappropriate.

30. B — Post-repair verification should include a test drive under conditions representative of the customer's typical driving and that exercise the repaired features. A rural customer needs rural-representative testing; a highway commuter needs highway conditions. Excessive or limited testing misses relevant conditions — the drive should match the customer's actual use case.

31. C — OEM service information specifies the specific vehicle reference point for radar target positioning, typically the front axle centerline. The front bumper cover, nose ornament, or scan tool laser are not reliable references — OEM procedures define the correct reference for geometric accuracy, and deviating from that reference introduces silent miscalibration risk.

32. D — Silent miscalibration is most often caused by unverified preconditions — floor slope, vehicle loading, tire pressures, or target placement. These factors affect calibration geometry without triggering scan tool errors, so the procedure completes with incorrect parameters while reporting success. Hardware failures, scan tool errors, and power interruptions typically produce obvious failures rather than silent ones.

33. A — A "configuration required" message after programming means the coding step has not been completed. The correct action is to complete the OEM-specified coding procedure before proceeding to calibration. Each step depends on the previous being complete, and skipping the coding step leaves the module in an incomplete state that cannot function correctly.

34. B — AEB triggering aggressively on guardrails two months after calibration points to possible calibration drift from the original service or a subsequent mechanical disturbance (vibration, minor impact, or bumper cover work since the service). Investigation of the calibration history and any recent mechanical service is productive — blaming the customer or assuming normal operation is incorrect.

35. C — The composite vehicle's dynamic calibration requires both the specified speed range and the specified duration, along with other OEM preconditions (lane markings, traffic conditions, weather). All of these parameters work together to produce valid calibration convergence; removing any one of them affects the calibration's ability to complete correctly.

36. D — A "target not detected" error after verifying target placement and condition points to something obstructing the radar's view of the target — typically the front bumper cover, aftermarket modifications in the beam path, or other physical impediments. Inspecting for these obstructions is the productive next step before considering module replacement or procedure changes.

37. A — A shop investing in ADAS calibration capability should consider initial target kit costs, scan tool coverage for relevant brands, and shop floor-leveling if needed. Personnel training is also essential, but the equipment foundation must support the technical work. Evaluating only one cost category or ignoring the full scope underestimates the investment required.

38. B — "Calibration required" after programming is the expected state — programming loads the module's software, and calibration establishes its geometric reference. These are separate required steps, and the calibration message is not an error. Proceeding through the OEM-specified sequence completes the module replacement correctly.

39. C — When a body shop failed to complete post-repair calibration, the correct response from a subsequent shop is to perform the calibration, document the previous incomplete work, and verify results. This protects the customer, documents the professional response, and addresses the ADAS safety concern. Refusing or completing only part of the work are inappropriate.

40. D — The final required action before delivery after successful calibration and operational testing is documenting the complete calibration process in the repair file, including photos. This documentation creates the permanent record required for OEM compliance, insurance, and liability protection. Additional calibration attempts or overnight vehicle holds are not productive final steps.

41. A — Customer handoff after ADAS service should include clear communication of what was done, what to expect, and the driver's continuing responsibility for safe vehicle operation. This sets correct expectations and protects both parties. Cost-only conversations, vague reassurances, or overwhelming technical detail are all inadequate for proper handoff.

42. B — The camera heater activating during cold-weather calibration is a design function that does not interfere with the calibration procedure. Allowing it to operate normally is correct — disconnecting the heater or aborting the calibration are inappropriate responses. The calibration is designed to accommodate camera heater activation as a normal condition.

43. C — ADAS repair documentation retention should align with insurance and litigation timelines, which can extend many years beyond the repair date. This is the primary reason for extended retention — claims, disputes, and legal proceedings often surface long after the original work, and the documentation must be available to defend the shop's work.

44. D — Non-OEM bumper covers may not meet radar transparency specifications, and discussing the potential impact on ADAS performance before calibrating is the correct professional action. This respects the customer's informed decision-making and documents the conversation. Refusing outright or charging a premium without discussion are both inappropriate responses.

45. A — A complete ADAS work order should document all work performed, parts used, service information consulted, and verification performed. This comprehensive record serves OEM compliance, insurance, warranty, and liability purposes. Partial records (only complaint and delivery, only costs, only codes) miss the critical information that complete documentation requires.

46. B — After bumper cover replacement with proper sensor removal and reinstallation, the required verification is scan tool data review confirming each sensor reports plausible distance values during static testing. This verifies the work was done correctly and identifies any issues before customer delivery. Speculative replacement or unnecessary procedures are not productive.

47. D — Cold-weather-only ultrasonic failures with sensors appearing clean in the warm shop strongly suggest snow or ice accumulation during the cold drive that melts before shop arrival. This is a known ultrasonic failure pattern, not a hardware failure, module software issue, or customer-accepted feature limitation. Investigation should confirm the weather-correlation pattern.

48. C — Individual ultrasonic sensor replacement involves replacing the failed sensor and verifying operation through scan tool data review. No control module replacement, system-wide

reprogramming, or complete bumper cover replacement is required for a routine single-sensor replacement with verified supply and ground to the sensor connector.

49. B — When no fault has been identified but a customer requests sensor replacement, the professional response is to explain that no fault has been found and that replacement may not resolve the concern. This respects the customer's interest in saving unnecessary expense and documents the professional assessment. Simply performing the requested work without discussion is not professionally appropriate.

50. A — OEM procedures for bumper cover repainting on ADAS-equipped vehicles require ultrasonic sensor removal before painting and reinstallation after paint cures. This prevents paint from coating the sensor transducer faces and preserves their function. Tape, wax, or painting over sensors are all inappropriate — only removal before painting is the correct procedure.