PRACTICE EXAM 38

1. A shop replaces a windshield on a vehicle with a windshield-mounted forward camera. Regarding ADAS, this service event:

A. Requires no calibration because the camera was not electrically disconnected

B. Requires a forward camera calibration because its mounting reference moved

C. Requires only a radar calibration since the camera is unaffected by glass

D. Requires recalibration of the ultrasonic parking sensors in the bumper

2. Which calibration type is performed with the vehicle stationary using positioned targets?

A. Dynamic calibration, which requires a road drive at a set speed

B. Static calibration, which uses fixed targets at specified distances

C. Self-calibration, which needs no targets and no driving at all

D. Automatic calibration, which completes during the next key cycle

3. A four-wheel alignment is performed and the thrust angle changes. Regarding a forward camera, this service:

A. Never affects the camera because alignment is purely mechanical

B. Affects only the radar sensor and never the forward camera aim

C. Resets the camera's software image, requiring no recalibration

D. May require recalibration since the camera references vehicle travel

4. Which calibration type requires driving the vehicle under specified conditions so the sensor learns?

A. Static calibration, which is performed with the vehicle stationary

B. Self-calibration, which requires no driving and no targets at all

C. Bench calibration, which is completed before the sensor is installed

D. Dynamic calibration, which uses an on-road drive to complete learning

5. A forward radar sensor is replaced after a collision. The MOST likely calibration requirement is:

A. A calibration of the new radar sensor per the OEM procedure

B. No calibration, since a new sensor arrives pre-aimed from the factory

C. Only a forward camera calibration, with the radar needing nothing

D. Only an ultrasonic sensor calibration in the front and rear bumpers

6. A vehicle receives a suspension lift kit that raises ride height. Regarding ADAS sensors, this change:

A. Has no effect because sensors are unaffected by ride height changes

B. Affects only the ultrasonic sensors mounted in the bumper covers

C. Requires only a steering angle sensor reset with no other action

D. Alters sensor pitch and aim, requiring recalibration per OEM data

7. Which calibration approach combines a stationary target procedure followed by an on-road drive?

A. A self-calibration that needs neither targets nor any road driving

B. A dual static-plus-dynamic calibration performed in the stated order

C. A bench calibration completed entirely before sensor installation

D. An automatic calibration that finishes during a single key cycle

8. A front bumper cover is removed and reinstalled to access a component, with the radar behind it. After reassembly, the technician should:

A. Assume the radar aim is unchanged and skip any verification step

B. Recalibrate the ultrasonic sensors only, ignoring the radar entirely

C. Verify radar aim and recalibrate if the OEM procedure requires it

D. Replace the radar sensor because the bumper cover was removed

9. A vehicle's forward camera uses a calibration that completes automatically during normal driving without targets or a defined drive cycle. This is BEST described as:

A. A static calibration requiring positioned targets at set distances

B. A dual calibration combining targets and a defined road drive

C. A self-learning or automatic calibration during ordinary driving

D. A bench calibration performed before the camera is installed

10. A technician replaces a steering angle sensor. Regarding ADAS systems that use steering data, this service:

A. Has no effect on any ADAS feature that relies on steering input

B. Typically requires a steering angle sensor calibration or zero-point reset

C. Requires a full forward camera static calibration with targets only

D. Requires recalibration of the ultrasonic parking sensor array only

11. Which service event would LEAST likely require a forward camera recalibration?

A. Replacing the windshield that houses the forward camera bracket

B. Replacing a cabin air filter located behind the glove compartment

C. Performing an alignment that changes the vehicle's thrust angle

D. Removing and reinstalling the forward camera from its bracket

12. A technician must decide the calibration method for a specific vehicle and sensor. The method (static, dynamic, or both) is determined by:

A. Whichever method the technician finds fastest to perform that day

B. The generic capability of the aftermarket scan tool being used

C. The OEM service information specifying the method for that vehicle

D. The ambient weather conditions present in the shop on that day

13. A rear bumper is replaced on a vehicle with blind spot radar in the rear corners. After the repair, the technician should:

A. Verify the rear radar aim and recalibrate per the OEM procedure

B. Recalibrate only the forward camera since the rear is unaffected

C. Assume the rear radar aim is unchanged and skip all verification

D. Replace both rear radar sensors because the bumper was replaced

14. Which condition is typically required before performing a static calibration?

A. A sloped floor to angle the targets toward the forward camera

B. A level floor, correct ride height, and properly positioned targets

C. A fully depleted battery to force the module into a relearn mode

D. The vehicle driven at highway speed immediately before the procedure

15. A vehicle's tires are replaced with a significantly different overall diameter. Regarding dynamic calibration, this matters because:

A. Tire diameter changes the radar sensor's internal operating frequency

B. Tire diameter sets the camera's white-balance reference during capture

C. Tire diameter has no effect on any calibration procedure at all

D. Tire diameter alters ride height and the speed signal used in the drive

16. A technician finds that a vehicle requires both static and dynamic calibration but performs only the dynamic drive. The result is:

A. A fully complete calibration since dynamic is the more thorough method

B. No concern, because static is optional once dynamic has completed

C. A faster repair with no downside to skipping the static portion

D. An incomplete calibration, since the required static step was omitted

17. Which best describes when a sensor's mounting is "disturbed" enough to require recalibration?

A. Only when the sensor is completely replaced with a new unit

B. Only when a collision has visibly damaged the sensor housing

C. Whenever the sensor is removed, repositioned, or its mount is altered

D. Never, since sensors hold their aim regardless of any service performed

18. A technician replaces a forward-facing camera module. The MOST likely calibration requirement is:

A. No calibration, since the replacement camera is pre-aimed at the factory

B. Only a radar calibration, with the new camera needing no procedure

C. Only an ultrasonic calibration in the front and rear bumper covers

D. A camera calibration (static, dynamic, or both) per the OEM procedure

19. Which service is MOST likely to require recalibration of multiple ADAS sensors at once?

A. A major front-end collision repair disturbing the camera and radar

B. Topping off the windshield washer fluid in the under-hood reservoir

C. Replacing a single interior cabin light bulb in the dome assembly

D. Rotating the tires front to rear at a routine service interval

20. A technician must verify ride height is correct before calibration because incorrect ride height:

A. Changes sensor pitch and aim, affecting the calibration reference

B. Alters the radar sensor's internal operating frequency band setting

C. Sets the camera's white-balance reference during the target capture

D. Determines the ultrasonic array's maximum object detection distance

21. A vehicle's forward radar is removed to replace a grille, then reinstalled on its original bracket. The technician should:

A. Assume no calibration is needed since the original bracket was reused

B. Recalibrate only the camera since the radar bracket was not changed

C. Verify aim and recalibrate the radar if the OEM procedure requires it

D. Replace the radar sensor because it was removed during the grille job

22. Which calibration precondition is shared by most static AND dynamic procedures?

A. A sloped floor positioned to angle the targets toward the sensor

B. A fully discharged battery to force a complete module relearn

C. Correct tire pressures, proper ride height, and stable system voltage

D. Highway-speed driving immediately before any target is positioned

23. A technician performs a wheel alignment and must decide whether ADAS calibration follows. The deciding factor is:

A. Whether the alignment shop charged for the ADAS calibration separately

B. Whether the OEM requires calibration when the thrust angle changes

C. Whether the customer specifically asked for a calibration to be done

D. Whether the vehicle has been driven since the alignment was completed

24. Which best describes a dynamic calibration's typical road requirements?

A. Any road surface at any speed regardless of the lane markings present

B. A stationary position with targets and no driving requirement at all

C. A sloped surface to angle the camera toward the roadway markings

D. A specified speed range on roads with clear lane markings and conditions

25. A technician replaces a damaged radar bracket and reinstalls the original radar. Regarding calibration, this service:

A. Requires verifying aim and recalibrating, since the mount was changed

B. Requires no action because the original radar sensor was reused

C. Requires only a forward camera calibration with targets and a drive

D. Requires only an ultrasonic parking sensor calibration in the bumper

26. Which calibration type is MOST associated with a manufacturer-specified target board placed at a precise distance?

A. Dynamic calibration performed during an on-road drive cycle

B. Static calibration using a positioned target at a set distance

C. Self-calibration that completes automatically during normal driving

D. Bench calibration performed before the sensor is ever installed

27. A technician must determine whether a self-calibrating camera still needs intervention after a windshield swap. The correct approach is to:

A. Assume self-calibration handles everything and skip the service information

B. Replace the camera since self-calibrating units cannot be recalibrated

C. Consult OEM service information, as a drive cycle or steps may be required

D. Disable the camera permanently because the glass was replaced

28. Which service event would MOST clearly trigger a required forward radar calibration?

A. Replacing the forward radar sensor with a new unit after a collision

B. Replacing a rear cabin speaker in the vehicle's audio entertainment system

C. Topping off the engine oil during a routine maintenance service visit

D. Replacing a burned-out license plate bulb at the rear of the vehicle

29. A technician should confirm no active DTCs are present before calibration because unresolved faults:

A. Can prevent the calibration from completing or indicate an unfixed fault

B. Raise the radar sensor's maximum rated detection range during the drive

C. Set the camera's white-balance reference for the static target capture

D. Increase the ultrasonic array's frequency beyond its rated specification

30. Which describes the relationship between a sensor replacement and calibration?

A. A replaced sensor never requires calibration because it ships pre-aimed

B. A replaced sensor typically requires calibration to the specific vehicle

C. A replaced sensor only requires calibration if a DTC is currently stored

D. A replaced sensor requires calibration only after the vehicle is sold

31. A vehicle's ride height is restored to specification after a sagging spring is replaced. Regarding ADAS, the technician should:

A. Assume the prior calibration remains valid despite the height change

B. Recalibrate only the ultrasonic sensors located in the bumper covers

C. Recalibrate the affected sensors, since ride height influences aim

D. Replace the forward camera because the spring was replaced

32. Which calibration type does NOT use physical targets?

A. Static calibration, which positions targets at precise distances

B. Dynamic calibration, which relies on an on-road drive to learn

C. Dual calibration, which combines targets and an on-road drive

D. Bench calibration, which uses fixtures before sensor installation

33. A technician must decide the calibration sequence when both static and dynamic are required. The correct sequence is:

A. Whichever method is more convenient to start with in the shop bay

B. The order specified by the OEM, since one step may depend on the other

C. Always dynamic first, then static, regardless of the OEM procedure

D. Neither step is needed if the vehicle has no current DTCs stored

34. A technician inspects a vehicle after an alignment and finds the lane-centering now drifts. The MOST likely explanation is:

A. The alignment electrically erased the camera's stored software image

B. The alignment changed the radar's internal operating frequency band

C. The alignment demagnetized the ultrasonic sensors in the bumper cover

D. The thrust angle changed, shifting the camera reference to vehicle travel

35. Which precondition is specifically required for a successful dynamic calibration?

A. A positioned target board placed at a precise distance from the sensor

B. A fully discharged battery to force the module into a relearn state

C. A sloped shop floor angled toward the forward-facing camera lens

D. Suitable roads, adequate speed, clear markings, and proper conditions

36. A technician replaces a surround-view camera mounted in a side mirror. The MOST likely calibration requirement is:

A. No calibration, since surround-view cameras are pre-aimed at the factory

B. Only a forward radar calibration, with the camera needing no procedure

C. A surround-view calibration to re-establish the geometric reference

D. Only an ultrasonic parking sensor calibration in the front bumper

37. Which best explains why a calibration is required after replacing an ADAS sensor even with the correct part?

A. The correct part automatically aligns itself once it is installed

B. The replacement part changes the vehicle's overall ride height value

C. The new part raises the system's required calibration voltage level

D. The new sensor must be aimed and configured to the specific vehicle

38. A technician must decide whether a minor cosmetic bumper scuff repair near the radar requires calibration. The deciding factor is:

A. Whether the repair disturbed the radar sensor's mounting or aim

B. Whether the paint color used matches the vehicle's original finish

C. Whether the customer noticed the scuff before bringing the vehicle in

D. Whether the repair was performed by a dealer or an independent shop

39. Which calibration type is performed before the sensor is installed on the vehicle, using a fixture?

A. Static calibration, which positions targets around the installed vehicle

B. Dynamic calibration, which drives the installed vehicle on the road

C. Bench calibration, which uses a fixture before vehicle installation

D. Self-calibration, which completes during normal driving after install

40. A technician finds that a vehicle's forward camera requires only a dynamic calibration per OEM data. The technician should:

A. Set up static targets anyway since targets improve every calibration

B. Skip calibration entirely because dynamic is optional for cameras

C. Perform the dynamic drive under the specified conditions to complete it

D. Replace the camera because dynamic calibration is unreliable on cameras

41. Which service event combination would MOST likely require both camera and radar calibration?

A. A windshield replacement alone with no other repair performed

B. A front-end collision repair disturbing both the camera and radar

C. A cabin air filter replacement behind the glove compartment area

D. A single tire rotation performed at a routine maintenance interval

42. A technician must determine whether a vehicle uses static, dynamic, or self-calibration for a given sensor. The authoritative determination comes from:

A. The generic capability list built into the aftermarket scan tool menu

B. A colleague's recollection of servicing a roughly similar vehicle once

C. The tire manufacturer's load and inflation specification reference chart

D. The OEM service information for that exact make, model, and year

43. A vehicle's forward radar is found misaimed after a previous bracket repair. The required action is to:

A. Increase the radar gain to electronically compensate for the misaim

B. Disable the forward collision system to avoid dealing with the aim

C. Correct the aim per specification and recalibrate the radar sensor

D. Leave the misaim since radar tolerates any reasonable aim variation

44. Which describes a key precondition that applies to target-based static calibration?

A. The target must match the OEM specification and be precisely positioned

B. The vehicle must be driven at highway speed during the procedure

C. The battery must be fully discharged to force a module relearn first

D. The shop floor must be sloped to angle the targets toward the sensor

45. A technician completes a sensor replacement and the required calibration. The next step before release is to:

A. Perform a functional verification confirming the system operates correctly

B. Release the vehicle immediately since the calibration status read complete

C. Clear the DTC memory again without performing any functional check

D. Disable the system temporarily until the customer reports any concern

46. Which service event would NOT, by itself, typically require an ADAS calibration?

A. Replacing a windshield that houses the forward camera bracket

B. Replacing a forward radar sensor following a front-end collision

C. Performing an alignment that changes the vehicle's thrust angle

D. Replacing the engine air filter located in the under-hood airbox

47. A technician must decide whether a dynamic-only calibration can be completed at the shop's location. The deciding factor is:

A. Whether suitable roads with the required speed and markings are available

B. Whether the shop has a level floor and a target board on hand

C. Whether the battery can be fully discharged before the drive begins

D. Whether the customer prefers a static calibration to be done instead

48. Which best describes why OEM procedures sometimes specify both static and dynamic calibration?

A. Each step calibrates different aspects, and one may depend on the other

B. The two methods are interchangeable and either alone is fully sufficient

C. Dynamic is always performed first to make the static step unnecessary

D. Both are listed only to extend the labor time charged to the customer

49. A technician replaces a damaged forward camera bracket bonded to the windshield. Regarding calibration, this service:

A. Requires no calibration because only the bracket, not the camera, changed

B. Requires only a radar calibration since the camera bracket is passive

C. Requires only an ultrasonic calibration in the front and rear bumpers

D. Requires a camera calibration, since the camera's reference was disturbed

50. A technician finishing an ADAS service must confirm the correct calibration was performed for the repair. The BEST confirmation is to:

A. Verify against OEM service information and complete a functional test

B. Confirm only that the scan tool displayed a complete status one time

C. Check only that the dashboard warning lamp is off at the moment of key-on

D. Clear the DTC memory again without any functional verification step

Answer Key & Full Answer Explanations

1. B — Replacing the windshield moves the forward camera's mounting reference, so a camera calibration is required. The camera need not be electrically disconnected to lose its reference, and radar or ultrasonic sensors are not the affected component. The disturbed mounting drives the recalibration.

2. B — Static calibration is performed with the vehicle stationary using fixed targets at specified distances. Dynamic requires driving, and self/automatic types need no targets. Positioned targets on a still vehicle define static calibration.

3. D — An alignment that changes the thrust angle may require camera recalibration because the camera references the vehicle's travel path. Alignment is not purely mechanical to ADAS, does not affect only radar, and does not reset the software image. The travel-path shift triggers the need.

4. D — Dynamic calibration drives the vehicle under specified conditions so the sensor learns. Static is stationary, self-calibration needs no driving, and bench calibration precedes installation. On-road learning defines dynamic.

5. A — A replaced forward radar requires calibration per the OEM procedure. New sensors are not reliably pre-aimed for the vehicle, and the camera or ultrasonic sensors are not the focus. The new radar must be calibrated.

6. D — A lift kit raising ride height alters sensor pitch and aim, requiring recalibration per OEM data. Ride height does affect sensors, not only ultrasonics, and a steering reset alone is insufficient. The height change drives recalibration.

7. B — A dual static-plus-dynamic calibration performs the stationary target procedure followed by an on-road drive in the stated order. Self, bench, and single-key-cycle automatic types do not combine both. The combined sequence defines dual calibration.

8. C — After bumper R&R with radar behind it, the technician verifies radar aim and recalibrates if the OEM procedure requires it. Assuming unchanged aim, recalibrating only ultrasonics, or replacing the radar are improper. Verification follows the disturbance.

9. C — A camera that completes automatically during normal driving without targets or a defined drive cycle uses self-learning or automatic calibration. It is not static, dual, or bench calibration. Ordinary-driving completion defines self-calibration.

10. B — Replacing a steering angle sensor typically requires a steering angle sensor calibration or zero-point reset. It does affect steering-dependent ADAS, and a full camera static or ultrasonic calibration is not the requirement. The zero-point reset is the key step.

11. B — Replacing a cabin air filter least likely requires camera recalibration, as it does not disturb the camera. Windshield replacement, a thrust-angle alignment, and camera removal all disturb the reference. The filter change is unrelated to camera aim.

12. C — The calibration method is determined by the OEM service information for that vehicle. It is not the technician's speed preference, the tool's generic capability, or the weather. OEM data specifies static, dynamic, or both.

13. A — After a rear bumper replacement with corner blind spot radar, the technician verifies rear radar aim and recalibrates per the OEM procedure. Recalibrating only the camera, assuming unchanged aim, or replacing both sensors are improper. Verification follows the bumper work.

14. B — A static calibration typically requires a level floor, correct ride height, and properly positioned targets. A sloped floor, a depleted battery, or prior highway driving are not preconditions. Proper geometry and conditions enable static calibration.

15. D — A significantly different tire diameter alters ride height and the speed signal used in the dynamic drive. Diameter does not change radar frequency or set white-balance, and it is not irrelevant. The height and speed-signal effects matter.

16. D — Performing only the dynamic drive when both are required yields an incomplete calibration because the static step was omitted. Dynamic is not inherently complete, static is not optional, and skipping it has a downside. The missing static step is the flaw.

17. C — A sensor's mounting is "disturbed" enough to require recalibration whenever it is removed, repositioned, or its mount is altered. It is not limited to replacement or visible collision damage, and sensors do not always hold aim. Any disturbance can trigger recalibration.

18. D — Replacing a forward camera module requires a camera calibration (static, dynamic, or both) per the OEM procedure. New cameras are not reliably pre-aimed, and radar or ultrasonic calibration is not the requirement. The new camera must be calibrated.

19. A — A major front-end collision repair disturbing the camera and radar most likely requires recalibrating multiple sensors at once. Washer fluid, a dome bulb, or tire rotation do not disturb sensors. The collision affects several sensors together.

20. A — Incorrect ride height changes sensor pitch and aim, affecting the calibration reference. It does not alter radar frequency, set white-balance, or define ultrasonic range. Correct ride height preserves the reference.

21. C — After removing radar to replace a grille and reinstalling on the original bracket, the technician verifies aim and recalibrates if the OEM procedure requires it. Reusing the bracket does not guarantee aim, and recalibrating only the camera or replacing the radar are improper. Verification follows removal.

22. C — Most static and dynamic procedures share preconditions of correct tire pressures, proper ride height, and stable system voltage. A sloped floor, a discharged battery, or pre-procedure highway driving are not shared requirements. These baseline conditions apply broadly.

23. B — Whether ADAS calibration follows an alignment is decided by whether the OEM requires it when the thrust angle changes. Billing, customer request, or prior driving are not the deciding factor. OEM requirement governs.

24. D — A dynamic calibration typically requires a specified speed range on roads with clear lane markings and suitable conditions. Any-road/any-speed, a stationary target setup, or a sloped surface do not describe it. Proper drive conditions define dynamic requirements.

25. A — Replacing a radar bracket and reinstalling the original radar requires verifying aim and recalibrating, since the mount was changed. Reusing the sensor does not waive this, and camera-only or ultrasonic-only calibration are not the requirement. The changed mount drives recalibration.

26. B — Static calibration is most associated with a manufacturer-specified target board placed at a precise distance. Dynamic uses a drive, self-calibration uses normal driving, and bench precedes installation. Positioned target boards define static.

27. C — For a self-calibrating camera after a windshield swap, the correct approach is to consult OEM service information, as a drive cycle or steps may be required. Assuming it handles everything, replacing the camera, or disabling it are improper. OEM data confirms the requirement.

28. A — Replacing the forward radar sensor after a collision clearly triggers a required forward radar calibration. A cabin speaker, engine oil, or a license plate bulb do not. The sensor replacement is the trigger.

29. A — Confirming no active DTCs matters because unresolved faults can prevent calibration from completing or indicate an unfixed fault. They do not raise radar range, set white-balance, or change ultrasonic frequency. Clearing related faults is prerequisite.

30. B — A replaced sensor typically requires calibration to the specific vehicle. It is not reliably pre-aimed, not contingent on a stored DTC, and not deferred until sale. Replacement generally requires calibration.

31. C — After restoring ride height by replacing a sagging spring, the technician recalibrates the affected sensors, since ride height influences aim. Assuming prior calibration holds, recalibrating only ultrasonics, or replacing the camera are improper. The height change drives recalibration.

32. B — Dynamic calibration does not use physical targets; it relies on an on-road drive to learn. Static and dual use targets, and bench uses fixtures. Dynamic is the target-free method.

33. B — When both static and dynamic are required, the correct sequence is the order specified by the OEM, since one step may depend on the other. Convenience order, always-dynamic-first, or skipping on a no-code basis are incorrect. OEM order governs.

34. D — Lane-centering drift after an alignment is most likely because the thrust angle changed, shifting the camera reference to vehicle travel. Alignment does not erase software, change radar frequency, or demagnetize ultrasonics. The thrust-angle shift explains the drift.

35. D — A successful dynamic calibration specifically requires suitable roads, adequate speed, clear markings, and proper conditions. A target board, a discharged battery, or a sloped floor are not dynamic preconditions. Proper drive conditions are essential.

36. C — Replacing a mirror-mounted surround-view camera requires a surround-view calibration to re-establish the geometric reference. Surround cameras are not reliably pre-aimed, and radar or ultrasonic calibration is not the requirement. The geometry must be re-established.

37. D — Calibration is required after replacing an ADAS sensor even with the correct part because the new sensor must be aimed and configured to the specific vehicle. The part does not self-align, change ride height, or raise calibration voltage. Vehicle-specific configuration is the reason.

38. A — Whether a cosmetic bumper repair near the radar requires calibration depends on whether the repair disturbed the radar's mounting or aim. Paint color, customer awareness, or shop type are not the deciding factor. Disturbance of the sensor governs the need.

39. C — Bench calibration is performed before the sensor is installed, using a fixture. Static positions targets around the installed vehicle, dynamic drives it, and self-calibration completes after install. Pre-installation fixturing defines bench calibration.

40. C — When OEM data specifies dynamic-only, the technician performs the dynamic drive under the specified conditions to complete it. Adding static targets, skipping calibration, or replacing the camera are improper. The specified dynamic drive completes it.

41. B — A front-end collision repair disturbing both the camera and radar most likely requires both camera and radar calibration. A windshield-only job, a cabin filter, or a tire rotation do not require both. The collision disturbs both sensors.

42. D — The authoritative determination of calibration type comes from the OEM service information for that exact make, model, and year. A generic tool list, colleague recollection, or a tire chart are unreliable. OEM data specifies the method.

43. C — A radar found misaimed after a prior bracket repair must have its aim corrected per specification and be recalibrated. Raising gain, disabling the system, or leaving the misaim are improper. Correct aim plus recalibration is required.

44. A — A key precondition for target-based static calibration is that the target must match the OEM specification and be precisely positioned. Highway driving, a discharged battery, and a sloped floor are not static preconditions. Correct target and placement are essential.

45. A — After a sensor replacement and calibration, the next step before release is a functional verification confirming correct operation. Releasing on a status alone, re-clearing codes, or disabling the system do not verify function. Functional confirmation completes the job.

46. D — Replacing the engine air filter would not, by itself, typically require an ADAS calibration. Windshield replacement, radar replacement, and a thrust-angle alignment all do. The air filter change is unrelated to ADAS aim.

47. A — Whether a dynamic-only calibration can be completed at the location depends on whether suitable roads with the required speed and markings are available. A level floor and target board serve static, a discharged battery is not a requirement, and customer preference does not change the method. Road availability is the deciding factor.

48. A — OEM procedures specify both static and dynamic because each calibrates different aspects and one may depend on the other. They are not interchangeable, dynamic-first does not make static unnecessary, and the listing is not to pad labor. Complementary steps justify both.

49. D — Replacing a windshield-bonded camera bracket requires a camera calibration, since the camera's reference was disturbed. Changing the bracket does affect the reference, and radar-only or ultrasonic-only calibration are not the requirement. The disturbed reference drives recalibration.

50. A — The best confirmation of the correct calibration is to verify against OEM service information and complete a functional test. A one-time complete status, a dark lamp, or re-cleared codes do not confirm correctness. OEM verification plus functional testing validates the repair.