PRACTICE EXAM 12

1. A radar sensor's calibration procedure specifies aiming to the vehicle's centerline rather than to a body panel. The primary reason published procedures use the centerline is that:

A. Body panels are always painted after the radar sensor is installed

B. The centerline is faster to locate than any panel edge reference

C. The centerline reflects true vehicle geometry independent of panel fit

D. Panel-based references are required only for ultrasonic park sensors

2. A technician measures front and rear track to establish the thrust line before a static calibration. The thrust line is referenced because it represents:

A. The widest point of the vehicle body at the front fascia opening

B. The radar beam's horizontal spread measured in degrees of arc

C. The centerline of the windshield where the camera is bonded

D. The actual direction the vehicle travels relative to its centerline

3. A calibration procedure lists a target-to-sensor distance with a stated tolerance. Working outside that tolerance matters because the sensor:

A. Will switch automatically into a dynamic calibration mode instead

B. Loses all network communication with the central gateway module

C. Establishes its reference at the wrong range, skewing object distance

D. Draws excessive current and overheats the calibration target board

4. Before a dynamic calibration drive, the procedure requires verifying that tire sizes match the OEM specification. Incorrect tire size matters MOST because it:

A. Skews the wheel-speed/distance signal the calibration relies upon

B. Changes the paint reflectivity the forward camera uses for lanes

C. Alters the ultrasonic sensor frequency used during parking events

D. Reduces the radar sensor's maximum rated detection temperature

5. A published procedure specifies a level floor within a stated degree tolerance for static calibration. A floor slope beyond tolerance would MOST directly cause:

A. The scan tool to lose its connection to the vehicle data link

B. An incorrect pitch reference, skewing the sensor's vertical aim

C. The radar sensor to draw current beyond its rated specification

D. The steering angle sensor to lose its stored zero-point value

6. A technician confirms battery voltage is maintained above the procedure's minimum during calibration. This minimum exists primarily because low voltage can:

A. Increase the radar's rated detection range beyond specification

B. Cause module resets or incomplete writing of calibration data

C. Improve the forward camera's contrast in low-light conditions

D. Raise the ultrasonic array's sensitivity to nearby small objects

7. A procedure requires the fuel tank to be at a specified level before calibration. The reason this is specified is that fuel weight:

A. Changes the radar sensor's internal operating frequency band

B. Affects the camera's white-balance reference during target capture

C. Influences ride height, which affects sensor pitch and aim

D. Determines the ultrasonic sensor's maximum detection distance

8. A static calibration target must be centered laterally to the vehicle within a stated tolerance. Lateral offset beyond tolerance MOST directly produces:

A. An automatic conversion of the procedure to a radar-only routine

B. A skewed horizontal (yaw) reference, biasing the sensor's centering

C. A complete loss of communication between camera and gateway

D. An overcurrent condition in the target board's illumination circuit

9. A procedure states the calibration area must be free of reflective surfaces within a specified radius. Reflective surfaces matter because they can:

A. Raise the ambient temperature above the camera's rated maximum

B. Lower the available 12-volt supply voltage to the radar module

C. Demagnetize the steering angle sensor's internal reference ring

D. Create false radar returns or stray reflections during calibration

10. A technician documents the pre-scan before beginning ADAS repairs. The primary diagnostic value of the pre-scan is that it:

A. Records existing DTCs so new repair-induced faults can be distinguished

B. Permanently calibrates every sensor before any work is performed

C. Replaces the need for any functional road test after the repair

D. Sets the steering angle sensor zero-point for the upcoming alignment

11. A procedure specifies measuring from a defined reference point on the vehicle to the target, not from the bumper edge. Using the bumper edge instead would introduce error because:

A. Bumper edges reflect radar more strongly than the body structure

B. Bumper position varies with cover fit and is not a true datum

C. The bumper is the only datum valid for ultrasonic calibration

D. Bumper measurement requires a laser tool the procedure prohibits

12. A dynamic calibration requires a minimum sustained speed for a set duration. The minimum speed requirement exists so that the camera can:

A. Gather enough lane-line and motion data to complete its learning

B. Reduce its internal operating temperature during the drive cycle

C. Override the radar sensor's input for the duration of the drive

D. Lower the vehicle's ride height to the calibration specification

13. A technician finds that a procedure calls for both static and dynamic calibration in a specified order. Performing them out of order risks:

A. Overcharging the 12-volt battery during the static portion

B. Demagnetizing the wheel-speed sensor tone rings on each axle

C. Raising the camera's operating temperature beyond its rating

D. An invalid result if the later step depends on the earlier one

14. A radar sensor specification lists a maximum allowable vertical aim deviation. Exceeding the vertical tolerance MOST directly causes the system to:

A. Switch its detection input to the ultrasonic parking sensors

B. Increase its effective detection range along the open roadway

C. Communicate falsely with the steering angle sensor circuit

D. Misjudge target elevation, risking missed or false detections

15. A procedure requires the windshield to be clean and free of stickers in the camera's field of view. Obstructions in that area matter because they:

A. Change the vehicle's measured thrust line during the procedure

B. Block or distort the optical path the camera relies on to see lanes

C. Lower the radar module's supply voltage below specification

D. Reset the steering angle sensor's zero-point on each key cycle

16. A technician verifies that a calibration target's printed pattern matches the exact OEM part for that vehicle. Pattern specificity matters because:

A. Each pattern encodes geometry the camera expects for that model

B. All targets share one universal pattern interchangeable across makes

C. The pattern sets the radar sensor's internal operating frequency

D. Pattern color determines the ultrasonic array's detection range

17. A procedure specifies ambient lighting within a stated range for camera calibration. Lighting outside that range is a problem because it can:

A. Impair the camera's ability to acquire the target reliably

B. Alter the radar sensor's horizontal beam spread in degrees

C. Change the steering angle sensor's stored zero reference

D. Increase the ultrasonic sensor's frequency beyond its rating

18. A technician notes the procedure requires verifying no DTCs are present before calibrating. Pre-existing DTCs matter because they can:

A. Permanently raise the radar's rated maximum detection range

B. Force the camera into a dynamic-only calibration mode

C. Lower the battery voltage below the procedure's stated minimum

D. Prevent calibration or indicate a fault that must be fixed first

19. A radar's horizontal aim specification is given relative to the thrust line, not the geometric centerline, when the two differ. The thrust line is used because it:

A. Is always identical to the geometric centerline on every vehicle

B. Represents the vehicle's true travel path the sensor must match

C. Defines the maximum towing weight printed on the door placard

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

20. A procedure requires a battery support unit during a lengthy calibration. The support unit's main purpose is to:

A. Increase the radar sensor's detection range during the procedure

B. Cool the camera module to keep it within its temperature rating

C. Hold system voltage steady so modules do not reset mid-procedure

D. Demagnetize the steering angle sensor before storing the zero-point

21. A technician measures and finds the vehicle ride height below specification due to a sagging spring. Calibrating without correcting it would result in:

A. A sensor reference based on incorrect pitch, producing aim error

B. The scan tool refusing to communicate with the gateway module

C. The radar module drawing current beyond its rated specification

D. The ultrasonic sensors switching to a higher operating frequency

22. A procedure lists a required distance from the target to any wall or reflective object behind it. This standoff is specified to prevent:

A. Stray reflections from corrupting the sensor's reference data

B. The battery voltage from sagging below the stated minimum value

C. The steering angle sensor from losing its zero-point reference

D. The camera module from exceeding its rated operating temperature

23. A technician completes a calibration and the scan tool reports success, but a road test reveals lane drift. The MOST appropriate conclusion is that:

A. The road test is unnecessary once the scan tool confirms success

B. The lane drift proves the radar sensor lost all network communication

C. The calibration permanently failed and the camera must be replaced

D. Functional verification is required; a "success" status alone is insufficient

24. A procedure specifies torque values for the radar sensor mounting fasteners. Correct fastener torque matters primarily because it:

A. Sets the radar sensor's internal operating frequency band

B. Determines the camera's white-balance during target capture

C. Changes the ultrasonic array's maximum detection distance

D. Maintains the sensor's intended aim and prevents aim drift

25. A technician must select between a manufacturer's stated static procedure and a generic aftermarket shortcut. The published OEM procedure is preferred because it:

A. Is always faster to perform than any aftermarket alternative

B. Specifies the exact geometry and conditions validated for that vehicle

C. Eliminates the need to verify ride height or tire specification

D. Removes the requirement for any functional road test afterward

26. A calibration requires the steering wheel to be centered and the wheels straight ahead. This condition matters because an off-center setup would:

A. Raise the radar module's supply voltage above specification

B. Increase the camera's operating temperature during the procedure

C. Introduce a yaw reference error into the camera's lane centering

D. Demagnetize the wheel-speed sensor tone ring on the front axle

27. A procedure states that aftermarket window tint film over the camera area can interfere with calibration. The interference occurs because tint:

A. Reduces light transmission through the camera's optical path

B. Changes the vehicle's measured thrust line during the procedure

C. Lowers the radar module's supply voltage below specification

D. Resets the steering angle sensor zero-point on each key cycle

28. A technician finds the calibration target is placed at the correct distance but tilted forward several degrees. The MOST likely consequence is:

A. The radar sensor drawing current beyond its rated specification

B. A skewed pitch reference, biasing the camera's vertical aim

C. The gateway module losing communication with the scan tool

D. The ultrasonic sensors increasing their operating frequency

29. A procedure requires confirming the correct vehicle options are entered into the scan tool before calibration. Incorrect option entry causes the tool to:

A. Load parameters or a procedure that does not match the actual vehicle

B. Overcharge the 12-volt battery during the calibration sequence

C. Physically reposition the radar sensor's mounting bracket angle

D. Increase the camera module's rated operating temperature limit

30. A radar sensor reads correct ranges on a bench fixture but misjudges distance on the vehicle. With the sensor confirmed good, the fault MOST likely lies in:

A. The sensor's internal microprocessor failing only under road load

B. The forward camera's white-balance reference being miscalibrated

C. The sensor's on-vehicle aim or calibration reference being incorrect

D. The ultrasonic parking array interfering with the radar's data bus

31. A procedure specifies that the vehicle must be unloaded (no cargo or passengers) for calibration. Added load matters because it:

A. Raises the radar sensor's internal operating frequency band

B. Changes the camera's white-balance reference during capture

C. Alters ride height, shifting the sensors' pitch and aim references

D. Increases the ultrasonic array's maximum detection distance

32. A technician verifies that the calibration target is at the OEM-specified height relative to the sensor. Target height matters because an incorrect height:

A. Forces the procedure to convert into a radar-only calibration

B. Skews the camera's pitch reference, biasing vertical object data

C. Lowers the radar module's supply voltage below specification

D. Demagnetizes the steering angle sensor's internal reference ring

33. A procedure requires that tire pressures be set to the door-placard specification before calibration. Incorrect pressure matters because it:

A. Changes the radar sensor's horizontal beam spread in degrees

B. Alters the camera's white-balance reference during target capture

C. Affects ride height, which shifts the sensors' pitch and aim

D. Increases the ultrasonic array's frequency beyond its rating

34. A technician finds a procedure requiring the calibration to be performed on a clean, dry floor with marked reference points. The reference points exist to:

A. Lower the ambient temperature near the camera module

B. Provide a path for the battery support unit's ground cable

C. Locate the vehicle and target accurately to the specified geometry

D. Reduce the radar sensor's current draw during the procedure

35. A procedure specifies the maximum allowable crosswind or vibration during a dynamic drive. Excess vibration matters because it can:

A. Disrupt the camera's ability to track lane lines consistently

B. Raise the radar module's supply voltage above its rating

C. Reset the steering angle sensor zero-point during the drive

D. Increase the ultrasonic sensors' detection range beyond spec

36. A technician must confirm the correct calibration method for a specific VIN. The authoritative source for that method is:

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

B. A generic scan tool's built-in quick-reference help menu only

C. Another shop's repair order for a loosely similar vehicle model

D. The tire manufacturer's load and inflation specification chart

37. A radar sensor's procedure specifies the target be a defined radar-reflective fixture, not an improvised reflector. An improvised reflector risks:

A. Overcharging the 12-volt battery during the calibration cycle

B. Resetting the steering angle sensor's stored zero-point reference

C. Raising the camera module's rated operating temperature limit

D. An inaccurate radar reference from incorrect reflective geometry

38. A technician notes a procedure requiring the engine running or ignition in a specific state during calibration. Following the specified state matters because it:

A. Increases the radar sensor's maximum rated detection range

B. Lowers the camera module's operating temperature during capture

C. Ensures the modules are powered and awake as the procedure expects

D. Demagnetizes the wheel-speed sensor tone rings before the drive

39. A procedure lists a specific scan-tool software version as the minimum for a calibration. Using an older version risks:

A. Overcharging the vehicle's 12-volt battery during the procedure

B. Loading outdated parameters or missing steps for that calibration

C. Physically shifting the radar sensor's mounting bracket angle

D. Raising the camera module's rated maximum operating temperature

40. A technician finds the forward camera bracket loose after a windshield replacement. Before recalibrating, the technician must:

A. Increase the calibration target's height to compensate for the looseness

B. Secure the bracket to its specified position, then perform calibration

C. Lower the tire pressures to bring the vehicle ride height down

D. Disconnect the radar sensor so it does not interfere with the camera

41. A procedure specifies that the calibration target's surface must be free of glare or shadows. Glare or shadow on the target matters because it:

A. Impairs the camera's ability to acquire the target's printed pattern

B. Lowers the radar module's supply voltage below specification

C. Resets the steering angle sensor's zero-point during capture

D. Increases the ultrasonic array's frequency beyond its rating

42. A technician confirms that all four wheels are on a level, flat surface before calibration. An uneven surface under one wheel would MOST directly cause:

A. The radar module to draw current beyond its rated specification

B. The camera module to exceed its rated operating temperature

C. A skewed vehicle attitude, corrupting sensor pitch and aim references

D. The ultrasonic sensors to switch to a higher operating frequency

43. A procedure requires the technician to verify wheel alignment is within spec before a camera calibration. Out-of-spec alignment matters because the thrust angle:

A. Changes the radar sensor's internal operating frequency band

B. Raises the camera module's rated maximum operating temperature

C. Lowers the 12-volt supply voltage to the calibration target board

D. Shifts the camera's reference relative to the vehicle's travel path

44. A technician measures the distance from each front wheel hub to the target to confirm squareness. This step ensures that the target is:

A. Reflective enough to return a strong radar signal to the sensor

B. Positioned square to the vehicle so the geometry matches the spec

C. Bright enough to be acquired under low ambient lighting conditions

D. Heavy enough to remain stable against minor air currents indoors

45. A procedure specifies that calibration must be repeated if the sensor or its mount is disturbed afterward. This requirement exists because any disturbance can:

A. Overcharge the 12-volt battery during the next ignition cycle

B. Reset the steering angle sensor zero-point on the following key-on

C. Raise the camera module's rated maximum operating temperature

D. Alter the sensor's aim, invalidating the completed calibration

46. A technician finds two procedures online: one OEM, one aftermarket, with conflicting target distances. The technician should:

A. Average the two distances to find a reasonable middle value

B. Use whichever distance is easier to achieve in the shop bay

C. Choose the aftermarket distance because it is usually quicker

D. Follow the OEM-specified distance validated for that vehicle

47. A procedure requires confirming the correct sensor part number before calibration. Installing a similar but incorrect part number risks:

A. Overcharging the 12-volt battery during the calibration cycle

B. Raising the camera module's rated maximum operating temperature

C. A mismatch in calibration parameters or sensor capability for that vehicle

D. Demagnetizing the wheel-speed sensor tone rings on each axle

48. A technician verifies that the calibration completed and then performs a post-scan and road test. The road test is included because it:

A. Confirms the system performs correctly under real driving conditions

B. Permanently raises the radar sensor's rated maximum detection range

C. Resets the steering angle sensor zero-point after the alignment

D. Lowers the camera module's operating temperature after calibration

49. A procedure states the calibration must be done with doors closed and the vehicle settled. A vehicle not allowed to settle would present:

A. An overcurrent condition in the radar sensor's supply circuit

B. A demagnetized steering angle sensor reference ring at key-on

C. A transient ride height, skewing the sensors' pitch and aim

D. A camera module operating above its rated temperature limit

50. A technician completes all calibrations and clears prior DTCs. The single BEST final step before returning the vehicle is to:

A. Confirm only that the dashboard warning lamp is no longer lit

B. Record the scan-tool "complete" status and release the vehicle

C. Clear the DTC memory again without any functional verification

D. Perform a functional road test confirming correct real-world operation

Answer Key & Full Answer Explanations

1. C — The vehicle centerline reflects true vehicle geometry, independent of how body panels happen to fit or sit. Panel gaps vary with assembly and collision history, so aiming to them introduces error, while the centerline is a fixed datum. This is why published procedures anchor radar aim to centerline references.

2. D — The thrust line represents the actual direction the vehicle travels relative to its centerline, set by rear-axle geometry. Sensors must be aimed to where the vehicle actually goes, not just to its body shape. Referencing the thrust line keeps sensor aim aligned with real travel direction.

3. C — Target-to-sensor distance is a defined input; working outside tolerance establishes the reference at the wrong range and skews how the sensor judges object distance. The procedure does not auto-switch modes or lose communication from a distance error. Holding the stated tolerance preserves accurate ranging.

4. A — Tire size determines rolling radius, which sets the wheel-speed and distance signal the dynamic calibration depends on. Wrong tire size skews that signal, corrupting the learning process. This is why the procedure requires OEM-spec tires before the drive.

5. B — A floor slope beyond tolerance tilts the vehicle, giving the sensor an incorrect pitch reference and skewing its vertical aim. The slope does not drop the data link, overdraw current, or erase the steering zero-point. A level floor preserves correct pitch.

6. B — Below the stated minimum, voltage sags can reset modules or interrupt the writing of calibration data, leaving an invalid result. Low voltage never extends radar range or improves camera contrast. Maintaining minimum voltage protects calibration integrity.

7. C — Fuel weight influences ride height, and ride height sets sensor pitch and aim, so the procedure specifies a fuel level. Fuel does not change radar frequency, camera white-balance, or ultrasonic range. Controlling fuel level controls the height reference.

8. B — Lateral target offset beyond tolerance gives the camera a skewed horizontal (yaw) reference, biasing its centering. It does not convert the routine, drop communication, or overload the target lighting. Correct lateral centering preserves the yaw reference.

9. D — Reflective surfaces within the specified radius can create false radar returns or stray reflections that corrupt the calibration. They do not raise temperature, lower supply voltage, or demagnetize the steering sensor. A reflection-free zone keeps the radar reference clean.

10. A — The pre-scan records existing DTCs so that any new, repair-induced faults can be distinguished afterward. It does not calibrate sensors, replace a road test, or set the steering zero-point. Documenting the baseline is its diagnostic value.

11. B — Bumper cover position varies with fit and is not a true datum, so measuring from it introduces error versus the defined reference point. Bumper edges are not preferred radar reflectors or the only ultrasonic datum. Using the specified datum keeps the measurement accurate.

12. A — A minimum sustained speed lets the camera gather enough lane-line and motion data to complete its learning. Speed is not about cooling the module, overriding radar, or lowering ride height. Adequate speed supplies the data the procedure needs.

13. D — When order is specified, the later step may depend on the earlier one, so reversing them risks an invalid result. Order does not overcharge the battery, demagnetize tone rings, or overheat the camera. Following the sequence preserves interdependencies.

14. D — Exceeding vertical aim tolerance makes the radar misjudge target elevation, risking missed or false detections. It does not switch to ultrasonic input, extend range, or falsely signal the steering sensor. Vertical aim must stay within spec for reliable detection.

15. B — Stickers or dirt in the camera's field of view block or distort the optical path it uses to see lanes. Obstructions do not change the thrust line, lower radar voltage, or reset the steering zero-point. A clear optical path is essential for the camera.

16. A — Each OEM target pattern encodes the specific geometry the camera expects for that model, so patterns are not interchangeable. Patterns do not set radar frequency or ultrasonic range, and they are not universal. Matching the exact pattern is required for valid calibration.

17. A — Lighting outside the specified range impairs the camera's ability to reliably acquire the target. Ambient light does not alter radar beam spread, the steering zero-point, or ultrasonic frequency. Correct lighting supports dependable target acquisition.

18. D — Pre-existing DTCs can prevent calibration or indicate a fault that must be repaired before calibrating. They do not raise radar range, force a mode, or lower battery voltage. Resolving codes first is why the check exists.

19. B — When thrust line and centerline differ, the thrust line is used because it represents the vehicle's true travel path the sensor must match. It is not always identical to centerline, nor a towing or white-balance reference. Aiming to travel direction is the goal.

20. C — A battery support unit holds system voltage steady so modules do not reset during a lengthy calibration. It does not extend radar range, cool the camera, or demagnetize the steering sensor. Stable voltage prevents mid-procedure resets.

21. A — A sagging spring puts ride height below spec, giving the sensor an incorrect pitch reference and producing aim error if not corrected. Low ride height does not block gateway communication, overdraw current, or change ultrasonic frequency. Correcting height first preserves aim.

22. A — The standoff distance behind the target prevents stray reflections from a wall corrupting the sensor's reference data. It does not govern battery voltage, the steering zero-point, or camera temperature. Adequate standoff keeps the reference clean.

23. D — A scan-tool "success" status does not guarantee real-world performance, so observed lane drift means functional verification is required and the status alone is insufficient. The road test is not unnecessary, and drift does not prove lost communication or mandate camera replacement. Functional confirmation is the standard.

24. D — Correct fastener torque maintains the sensor's intended aim and prevents aim drift over time. Torque does not set radar frequency, camera white-balance, or ultrasonic range. Proper torque holds the calibrated aim in place.

25. B — The OEM procedure specifies the exact geometry and conditions validated for that vehicle, which a generic shortcut cannot guarantee. It is not chosen for speed, nor does it waive ride-height, tire, or road-test steps. Validated specificity is why OEM is preferred.

26. C — An off-center steering setup introduces a yaw reference error into the camera's lane centering. It does not raise radar voltage, heat the camera, or demagnetize a tone ring. Centering the wheel preserves the correct yaw reference.

27. A — Tint film over the camera area reduces light transmission through its optical path, interfering with calibration. Tint does not change the thrust line, lower radar voltage, or reset the steering zero-point. The optical interference is the issue.

28. B — A forward-tilted target gives the camera a skewed pitch reference, biasing its vertical aim. The tilt does not overdraw radar current, drop communication, or change ultrasonic frequency. Correct target pitch preserves vertical accuracy.

29. A — Incorrect option entry makes the tool load parameters or a procedure that does not match the actual vehicle. It does not overcharge the battery, move the bracket, or change camera temperature limits. Accurate option data ensures the right procedure runs.

30. C — With the sensor confirmed good on the bench, on-vehicle distance error points to incorrect aim or calibration reference as installed. It is not an internal failure under load, a camera white-balance issue, or ultrasonic bus interference. On-vehicle aim is the suspect.

31. C — Cargo or passenger load alters ride height, shifting the sensors' pitch and aim references, so the vehicle must be unloaded. Load does not change radar frequency, camera white-balance, or ultrasonic range. Removing load stabilizes the height reference.

32. B — An incorrect target height skews the camera's pitch reference, biasing vertical object data. It does not force a radar-only mode, lower radar voltage, or demagnetize the steering sensor. Correct target height preserves pitch accuracy.

33. C — Tire pressure affects ride height, which shifts the sensors' pitch and aim, so placard pressures are required. Pressure does not change radar beam spread, camera white-balance, or ultrasonic frequency. Correct pressure stabilizes the height reference.

34. C — Marked reference points locate the vehicle and target accurately to the specified geometry. They do not lower temperature, route a ground cable, or reduce radar current. Accurate positioning is their purpose.

35. A — Excess vibration during the drive disrupts the camera's ability to track lane lines consistently. Vibration does not raise radar voltage, reset the steering zero-point, or extend ultrasonic range. Stable conditions support reliable lane tracking.

36. A — The OEM service information for the exact make, model, and year is the authoritative source for the calibration method. Generic tool menus, other shops' orders, and tire charts are not reliable for that VIN. OEM data is definitive.

37. D — An improvised reflector has incorrect reflective geometry, producing an inaccurate radar reference. It does not overcharge the battery, reset the steering sensor, or raise camera temperature. The specified fixture ensures a valid radar reference.

38. C — The specified ignition or engine state ensures the modules are powered and awake as the procedure expects. The state does not extend radar range, cool the camera, or demagnetize tone rings. Proper power state lets the procedure run correctly.

39. B — Older scan-tool software risks loading outdated parameters or missing steps for that calibration. It does not overcharge the battery, move the bracket, or change camera temperature limits. Meeting the minimum version ensures the correct routine.

40. B — A loose camera bracket must be secured to its specified position before calibration so the reference is correct. Raising target height, lowering tire pressure, or disconnecting radar do not address the loose mount. Securing the bracket first is required.

41. A — Glare or shadow on the target impairs the camera's ability to acquire the printed pattern. It does not lower radar voltage, reset the steering zero-point, or change ultrasonic frequency. An evenly lit target supports acquisition.

42. C — An uneven surface under one wheel skews the vehicle's attitude, corrupting sensor pitch and aim references. It does not overdraw radar current, overheat the camera, or change ultrasonic frequency. A level stance preserves correct geometry.

43. D — An out-of-spec thrust angle shifts the camera's reference relative to the vehicle's actual travel path, so alignment must be verified first. The thrust angle does not change radar frequency, camera temperature, or target-board voltage. Correct alignment keeps the reference true.

44. B — Equal hub-to-target measurements confirm the target is positioned square to the vehicle so the geometry matches the spec. Squareness is about geometry, not reflectivity, brightness, or weight. Verifying squareness ensures correct setup.

45. D — Any disturbance to the sensor or mount can alter its aim, invalidating the completed calibration, so it must be repeated. Disturbance does not overcharge the battery, reset the steering sensor, or raise camera temperature. Re-calibration restores valid aim.

46. D — With conflicting distances, the technician follows the OEM-specified distance validated for that vehicle. Averaging, choosing by convenience, or defaulting to the aftermarket value all risk an invalid setup. OEM specification governs.

47. C — An incorrect part number risks a mismatch in calibration parameters or sensor capability for that vehicle. It does not overcharge the battery, raise camera temperature, or demagnetize tone rings. Verifying the part number ensures compatibility.

48. A — The road test confirms the system performs correctly under real driving conditions, beyond what a bench or bay check shows. It does not raise radar range, reset the steering zero-point, or cool the camera. Real-world verification is its purpose.

49. C — A vehicle not allowed to settle presents a transient ride height, skewing the sensors' pitch and aim. The unsettled state does not overcurrent the radar circuit, demagnetize the steering ring, or overheat the camera. Letting it settle stabilizes the height reference.

50. D — The best final step is a functional road test confirming correct real-world operation. Checking only the warning lamp, recording a "complete" status, or re-clearing codes without testing do not verify performance. Functional confirmation validates the repair.