PRACTICE EXAM 40

1. A vehicle returns from collision repair with the forward camera and radar both showing calibration-not-complete codes, a lost-communication code on the ADAS control module, and an uncorrected ride-height change. Which approach best fits?

A. Recalibrate the camera only and release

B. Replace both sensors together

C. Clear the codes and road test

D. Restore communication and geometry, then recalibrate both sensors and verify

2. A forward radar reports intermittent blockage after a thick metallic repaint of the front fascia. The most appropriate corrective direction is to:

A. Address the fascia finish so it no longer attenuates the radar signal

B. Reprogram the gateway module

C. Replace the forward-facing camera

D. Perform a rear-axle alignment

3. A composite-vehicle question asks at what speed a feature activates; the technician recalls a different value from a real vehicle. The technician should answer using:

A. The real vehicle's behavior

B. An average of the two values

C. The value defined in the Composite Vehicle Type 1 Reference

D. The assumption that the feature is always active

4. A high-speed CAN bus at rest reads approximately 120 ohms instead of 60. This most likely indicates:

A. Both terminators intact

B. One terminator or bus end missing, or the bus broken between them

C. A dead short across the bus

D. Excessive supply voltage

5. Three vision features fail together while the camera communicates, the glass is clear and correct, the bracket is correct, and ride height is correct. The best next step is to:

A. Replace the rear ultrasonic sensors

B. Check the tire pressure sensors

C. Determine whether the shared camera needs recalibration or a software update

D. Replace the key fob battery

6. A radar that ranges correctly but consistently misjudges objects laterally, with evidence of a prior bumper repair, exhibits:

A. A no-communication electrical fault

B. A normal weather limitation

C. A horizontal aim/misalignment fault from the disturbed mounting

D. A software configuration fault unrelated to mounting

7. Why must a voltage-drop test be performed with the circuit loaded?

A. Because resistance cannot be read on live circuits

B. Because current must flow for the drop to appear

C. Because the key must be off

D. Because the battery must be disconnected

8. A park-assist system that can steer is about to be tested. The required precaution is to:

A. Ensure the area around and inside the vehicle is clear

B. Fully charge the 12-volt battery

C. Remove the rear bumper cover

D. Disconnect the gateway

9. Which feature relies on the rear corner radar?

A. Adaptive cruise control

B. Rear cross-traffic alert

C. Traffic sign recognition

D. Lane keeping assist

10. A newly installed forward radar, correctly mounted, behaves wrong for the vehicle's option package. Beyond aiming, it most likely still needs:

A. A four-wheel brake bleed

B. Programming and coding/configuration to the vehicle, plus initialization

C. A windshield replacement

D. A wheel alignment only

11. Why does a forward camera depend on the windshield's optical quality?

A. Because the camera looks through the glass, so distortion degrades its image

B. Because the glass powers the camera

C. Because the glass stores the camera's software

D. Because the glass aims the radar

12. A dynamic calibration stalls in dusk lighting with light rain on a clearly marked highway at the required speed and steady traffic. The most likely obstacle is:

A. The steady traffic ahead

B. The clear lane markings

C. The dusk lighting combined with rain reducing the camera's ability to establish its reference

D. The required driving speed

13. Which measurement confirms a module is receiving its supply voltage?

A. Resistance with the key off

B. Continuity to ground with the key off

C. Voltage at the supply pin with the key on

D. Voltage drop across the bus terminators

14. Three of these trigger a required calibration. Which one does NOT?

A. Windshield replacement

B. Collision repair disturbing the radar

C. A ride-height change

D. Topping off the coolant reservoir

15. A radar reports a blocked condition that clears once mud is washed off the fascia. This was:

A. An internal radar hardware failure

B. A gateway communication fault

C. A windshield optical distortion

D. A blockage condition correctable by clearing the fascia

16. A vehicle with body-network modules normal but all ADAS-network modules offline most likely has a fault in:

A. The ADAS network segment or its gateway connection

B. The forward camera alone

C. Each ultrasonic sensor independently

D. The tire pressure sensors

17. Why is a miscalibrated forward collision system especially dangerous?

A. The driver trusts a system that may fail to detect a hazard

B. It continuously applies the brakes

C. It increases fuel consumption

D. It cannot set any fault codes

18. A forward camera reinstalled after a mirror replacement without recalibration nudges inconsistently; the glass and communication are fine. The correct action is to:

A. Replace the camera module

B. Perform the required camera calibration

C. Replace the windshield

D. Reprogram the gateway

19. A static calibration aborts in a cluttered, reflective bay area with correct targets and prerequisites. The violated requirement is:

A. Full fuel load

B. A clean, non-reflective background

C. Correct tire pressure

D. Scan-tool shop power

20. The Doppler effect lets radar measure:

A. An object's color

B. An object's temperature

C. The windshield's clarity

D. An object's closing speed

21. When every module reports losing communication with one specific module, the most efficient hypothesis is:

A. The single named module or its power, ground, or bus connection is at fault

B. Every reporting module failed

C. The terminating resistors are shorted

D. The windshield is distorted

22. A camera complaint appears only on roads with faded or missing lane markings. This is most likely:

A. An internal module fault

B. A visibility limitation, possibly normal behavior

C. Radar interference

D. A gateway dropout

23. A procedure requires static then dynamic calibration; the technician completes only the static portion. The result is:

A. Full calibration because static is most accurate

B. An optional dynamic portion

C. A required radar frequency reset

D. An incomplete calibration

24. Three of these are correctable radar conditions. Which requires module replacement?

A. Snow blockage on the fascia

B. Misalignment from a disturbed mounting

C. Excessive paint over the radar area

D. A confirmed internal radar bus-interface failure

25. Why does ultrasonic sensing have such short range?

A. It is software-limited for safety

B. Sound pulses attenuate quickly over distance

C. It shares the radar's frequency band

D. It works only above highway speed

26. A vehicle's adaptive cruise and forward collision both misjudge distances after a front-end collision repair involving the radar mounting and fascia. The primary suspect is:

A. The rear ultrasonic park sensors

B. The driver-monitoring camera

C. The forward radar's mounting/aim and fascia condition

D. The tire pressure system

27. Why must calibration targets be placed precisely in static calibration?

A. A misplaced target teaches the sensor a wrong reference

B. Target position changes the supply voltage

C. Targets must match the windshield tint

D. Targets reprogram the gateway

28. A module that appears dead to the scan tool:

A. May simply lack power, ground, or a bus connection

B. Is always internally failed

C. Always indicates a software fault

D. Never requires testing before replacement

29. Which is the correct order of an ADAS calibration workflow?

A. Execute, then research whether it was needed

B. Post-repair scan, then pre-repair scan

C. Replace the sensor, then check for a complaint

D. Research, pre-repair scan, verify prerequisites, set up, execute, confirm, post-repair verify

30. A static calibration distance is specified in millimeters but the technician's tape reads inches. Before placing the target, the technician must:

A. Initiate the calibration anyway

B. Replace the target board

C. Reprogram the module

D. Convert the units accurately

31. Why is functional verification required beyond a clean post-repair scan?

A. The scan recalibrates the sensors

B. Scans only work on hybrids

C. A misaimed sensor can complete and pass a scan

D. Verification updates the navigation maps

32. Parking sensors false-alert after a bumper repaint, with one sensor recessed and another paint-covered. The cause is:

A. Improper sensor reseating and excessive paint over a sensor face

B. A forward radar misalignment

C. A windshield optical distortion

D. A discharged battery

33. Which statement about high-speed CAN is correct?

A. CAN-H and CAN-L carry mirror-image differential signals to reject noise

B. CAN uses a single wire referenced to ground

C. CAN requires no terminating resistors

D. CAN converts signals to light pulses

34. A vehicle with a lift, oversized tires, and an aftermarket bumper has forward ADAS complaints. Before calibration, the technician must:

A. Perform only a software update

B. Perform only a wheel alignment

C. Restore correct ride height and address the non-factory bumper affecting sensor mounting/aim

D. Replace the forward radar

35. Why is the L4 test built around a fictional composite vehicle?

A. Composite vehicles are cheaper to photograph

B. To prevent brand familiarity from giving an unfair advantage

C. Because real vehicles lack ADAS

D. To shorten the test

36. A radar with confirmed good power, ground, and intact bus wiring still cannot communicate. The most likely cause is:

A. The radar module or its internal bus interface

B. A fascia blockage

C. A wheel alignment error

D. A windshield distortion

37. Which two complaints most likely share a single forward-camera cause?

A. Blind spot warning and rear cross-traffic alert failing

B. Lane keeping and traffic sign recognition failing together

C. Parking sensors and blind spot warning failing

D. Adaptive cruise and emergency braking failing

38. Why should a technician research a vehicle's service history before diagnosis?

A. To find the driver's radio presets

B. To check the fuel economy

C. To read the maintenance schedule

D. Because prior repairs often disturb sensor aim and explain current faults

39. A blind spot indicator illuminates falsely after a rear collision repair, with the radar communicating normally. The most likely cause is:

A. A discharged key fob

B. An outdated navigation map

C. A misaimed corner radar after the repair

D. A failed cabin camera

40. A new, never-installed forward camera still requires calibration because:

A. New parts arrive pre-aimed to every vehicle

B. It has no established reference to the specific vehicle

C. Calibration is only for used sensors

D. It needs only a software update

41. Which approach best fits multiple ADAS systems failing together with lost-communication codes?

A. Replace the most expensive sensor first

B. Diagnose each system in complete isolation

C. Clear the codes and release

D. Find the single shared cause that explains all the symptoms

42. A radar disables in heavy snow buildup and resumes once cleared. This is best classified as:

A. A blockage-related condition that may be normal and self-resolving

B. An internal hardware failure

C. A gateway communication fault

D. A camera optical distortion

43. Why does a forward radar's aim require such precision?

A. It reads lane lines at a distance

B. It detects objects only inches away

C. It self-corrects its aim automatically

D. A small angular error becomes a large miss far ahead

44. A clean post-repair scan with a road test confirming each feature works demonstrates that:

A. A completion message alone is sufficient

B. Pre-repair scanning can be skipped

C. Functional verification is unnecessary for non-hybrids

D. A repair is confirmed only when a scan plus functional verification both pass

45. Which tool transfers a vehicle reference point straight down to the floor for target positioning?

A. A timing light

B. A plumb bob

C. A compression tester

D. A vacuum gauge

46. Why does a single failed forward camera disable several features at once?

A. Each feature has its own camera that fails together

B. The radar takes over and also fails

C. Lane keeping, sign recognition, and high beams all share that one camera

D. The gateway disables unrelated systems

47. A parking complaint on a system that fuses ultrasonic and camera data should first be approached by:

A. Replacing the ultrasonic sensors

B. Reprogramming the gateway

C. Determining which sensors actually serve the specific complaint

D. Replacing the surround-view cameras

48. Why is correct ride height a prerequisite to forward-sensor calibration?

A. It changes the radar's frequency band

B. It erases the camera's software

C. It disables the gateway

D. Incorrect ride height misaims body-mounted sensors and would bake in the error

49. A vehicle with intermittent multi-system faults coincides with a corroded shared ground. The correct action is to:

A. Repair the shared ground and re-verify the affected systems

B. Replace each affected sensor

C. Replace the gateway

D. Recalibrate all cameras first

50. A complete ADAS repair concludes with all root causes corrected, all calibrations and configurations done, a clean post-repair scan, and a road test confirming every feature. This demonstrates that a repair is confirmed:

A. By a completion message alone

B. By clearing the codes

C. Only when a post-repair scan plus functional verification both pass

D. By a normal engine start

Answer Key & Full Answer Explanations

1. D — A collision that disturbed both sensors, with a communication code and uncorrected ride height, calls for restoring communication and geometry, then recalibrating both sensors and verifying. Recalibrating only the camera, replacing both, or clearing codes ignores the shared root and leaves systems unconfirmed. The unified strategy targets the common cause.

2. A — A thick metallic repaint can attenuate the radar signal, so the fascia finish must be addressed. Reprogramming the gateway, replacing the camera, or aligning the rear axle would not restore transmission. Refinish work directly affects radar.

3. C — A composite-vehicle activation value is answered using the value defined in the reference, not a real vehicle, an average, or an assumption. The composite vehicle defines its own behavior. The reference is the single source of truth.

4. B — A ~120-ohm reading indicates one terminator or bus end is missing, or the bus is broken between them. Two intact terminators read about 60, a short reads near zero, and supply voltage is unrelated. Losing one terminator leaves only the other.

5. C — With clear correct glass, normal communication, a correct bracket, and correct ride height, the best next step is to determine whether the shared camera needs recalibration or a software update. Ultrasonic sensors, tire pressure sensors, and the key fob are unrelated. The shared camera is the common denominator.

6. C — A radar that ranges correctly but misjudges laterally after a bumper repair shows a horizontal aim/misalignment fault from the disturbed mounting. It is communicating, weather is not implicated, and configuration is not the issue. Correcting the mounting and recalibrating restores aim.

7. B — A voltage-drop test must be loaded because current must flow for the drop to appear. Resistance can be read on live circuits in other tests, and the key need not be off nor the battery disconnected. Current flow reveals the hidden resistance.

8. A — Before testing a steering-capable park-assist system, ensure the area around and inside the vehicle is clear. Battery charge, bumper removal, and gateway disconnection do not address the actuation hazard. Any system that can move the vehicle needs a cleared area.

9. B — Rear cross-traffic alert relies on the rear corner radar. Adaptive cruise uses the forward radar, and traffic sign recognition and lane keeping use the camera. The affected feature maps to the corner radar.

10. B — A correctly mounted new radar that behaves wrong for the option package most likely still needs programming and coding/configuration to the vehicle, plus initialization. A brake bleed, windshield, or alignment alone would not configure it. Electronic setup and calibration are separate required jobs.

11. A — The camera depends on glass quality because it looks through the glass, so distortion degrades its image. The glass does not power, store software for, or aim the radar. Incorrect glass can impair features even with a healthy camera.

12. C — A dynamic calibration stalling with otherwise favorable conditions is most likely obstructed by the dusk lighting combined with rain reducing the camera's ability to establish its reference. The steady traffic, clear markings, and correct speed are favorable. Poor visibility commonly stalls dynamic calibration.

13. C — Voltage at the supply pin with the key on confirms a module is receiving its supply. Key-off resistance, continuity to ground, and bus-terminator voltage do not verify live supply. Match the measurement to the question.

14. D — Topping off coolant does not disturb any sensor's reference and triggers no calibration. Windshield replacement, collision repair, and ride-height changes all do. Calibration triggers involve disturbed position, aim, or reference.

15. D — A blocked condition that clears once mud is washed off is a blockage condition correctable by clearing the fascia. It is not an internal failure, a gateway fault, or glass distortion. Blockage is a primary, correctable radar condition.

16. A — Body-network modules normal but all ADAS-network modules offline isolates the fault to the ADAS network segment or its gateway connection. The camera alone, independent sensor failures, or tire pressure sensors do not fit a segment-wide pattern. The affected-versus-unaffected pattern localizes the fault.

17. A — A miscalibrated collision system is dangerous because the driver trusts a system that may fail to detect a hazard. It does not continuously brake, raise fuel use, or suppress all codes. A trusted but wrong safety system is uniquely hazardous.

18. B — A camera reinstalled after a mirror replacement without recalibration, with fine glass and communication, needs the required camera calibration. Replacing the camera or windshield or reprogramming would not address the disturbed reference. Any camera removal triggers recalibration.

19. B — A static calibration aborting in a cluttered, reflective bay violates the clean, non-reflective background requirement. Fuel load, tire pressure, and scan-tool power are not the issue. The bay environment is part of the procedure.

20. D — The Doppler effect lets radar measure an object's closing speed. It does not measure color, temperature, or windshield clarity. Doppler-based velocity is radar's signature strength.

21. A — When every module reports losing one specific module, the most efficient hypothesis is that the single named module or its power, ground, or bus connection is at fault. All modules failing, shorted terminators, or distorted glass are far less likely. The relationship map points to the shared element.

22. B — A camera complaint only on faded or missing markings is most likely a visibility limitation, possibly normal behavior. A module fault, radar interference, or gateway dropout are not supported. The camera cannot track lines it cannot see.

23. D — Completing only the static portion of a static-then-dynamic procedure yields an incomplete calibration. Static being "most accurate," dynamic being optional, and a radar frequency reset are all wrong. The full specified procedure must be performed.

24. D — A confirmed internal radar bus-interface failure requires replacement, unlike snow blockage, misalignment, or excessive paint, which are correctable. Those three are fixed without a new module. The internal failure is the exception.

25. B — Ultrasonic range is short because sound pulses attenuate quickly over distance. It is not software-limited, does not share radar's band, and does not require highway speed. Short range is inherent to sound-based sensing.

26. C — Cruise and forward collision misjudging after a front-end repair involving the radar mounting and fascia point to the forward radar's mounting/aim and fascia condition. Rear ultrasonic sensors, the

driver camera, and tire pressure are unrelated to forward-distance errors. Collision repair commonly disturbs forward-radar aim and fascia transmission.

27. A — Targets must be placed precisely because a misplaced target teaches the sensor a wrong reference. Position does not change voltage, match tint, or reprogram the gateway. Target accuracy is calibration accuracy.

28. A — A module that appears dead may simply lack power, ground, or a bus connection. It is not always internally failed, not always a software fault, and does require testing before replacement. Verify the basics before condemning.

29. D — The correct order is research, pre-repair scan, verify prerequisites, set up, execute, confirm, then post-repair verify. Executing first, scanning out of order, or replacing before confirming a complaint break the logic. Prerequisites must be correct before setup and execution.

30. D — With a millimeter spec and an inch tape, the technician must convert the units accurately before placing the target. Initiating anyway, replacing the target, or reprogramming would mislocate it. A conversion error corrupts the calibration.

31. C — Functional verification is required because a misaimed sensor can complete and pass a scan. The scan does not recalibrate, is not hybrid-only, and does not update maps. Verifying function closes the loop.

32. A — Parking false alerts after a repaint, with one sensor recessed and another paint-covered, are explained by improper sensor reseating and excessive paint over a sensor face. A forward radar, windshield, or battery are unrelated to ultrasonic false alerts. Bumper refinishing and reinstallation are classic causes.

33. A — CAN-H and CAN-L carry mirror-image differential signals to reject noise. CAN is not single-wire, does use terminators, and does not convert to light. Differential signaling is the source of CAN's noise immunity.

34. C — A lift, oversized tires, and an aftermarket bumper require restoring correct ride height and addressing the non-factory bumper affecting sensor mounting/aim before calibration. A software update

or alignment alone, or replacing the radar, would not address all the non-factory conditions. Non-factory conditions must be corrected first.

35. B — A fictional composite vehicle prevents brand familiarity from giving an unfair advantage. Cost, a claim that real vehicles lack ADAS, and test length are not the reasons. The neutral vehicle measures reasoning, not brand exposure.

36. A — A radar with confirmed good power, ground, and intact bus wiring that still cannot communicate points to the radar module or its internal bus interface. A fascia blockage, alignment error, or windshield distortion would not cause a communication loss. Once the external circuit checks out, the module is the suspect.

37. B — Lane keeping and traffic sign recognition failing together most likely share a single forward-camera cause. Blind spot/cross-traffic share the corner radar, parking/blind spot do not share the camera, and cruise/braking share the forward radar. The camera is the shared denominator for vision features.

38. D — Researching service history matters because prior repairs often disturb sensor aim and explain current faults. Radio presets, fuel economy, and the maintenance schedule alone are not diagnostic leads. History targets prior work that disturbs sensors.

39. C — A blind spot indicator illuminating falsely after a rear collision repair, with the radar communicating, points to a misaimed corner radar. A key fob, navigation map, or cabin camera would not cause this. Collision repairs commonly disturb corner-radar aim.

40. B — A new camera still requires calibration because it has no established reference to the specific vehicle. New parts are not pre-aimed, calibration is not used-only, and a software update is insufficient. New sensors need calibration too.

41. D — Multiple systems failing with lost-communication codes calls for finding the single shared cause that explains all the symptoms. Replacing the priciest sensor, isolating each system, or clearing codes ignores the pattern. The simplest shared cause usually explains all symptoms.

42. A — A radar disabling in heavy snow buildup and resuming once cleared is a blockage-related condition that may be normal and self-resolving. An internal failure, gateway fault, or camera distortion are not supported. Blockage protection is designed behavior.

43. D — A forward radar's aim requires precision because a small angular error becomes a large miss far ahead. It does not read lane lines, reach only inches, or self-correct. Beam geometry magnifies small aim errors.

44. D — A clean post-repair scan plus a confirming road test demonstrates that a repair is confirmed only when a scan plus functional verification both pass. A completion message, skipping the pre-repair scan, or exempting non-hybrids are all incorrect. Verification closes the loop.

45. B — A plumb bob transfers a vehicle reference point straight down to the floor for target positioning. A timing light, compression tester, and vacuum gauge are unrelated to calibration geometry. Simple measurement tools build the setup.

46. C — One failed camera disables several features because lane keeping, sign recognition, and high beams all share that one camera. They do not each have a separate camera, the radar does not take over, and the gateway does not disable them. Shared sensors explain grouped failures.

47. C — A parking complaint on a fused system should first be approached by determining which sensors actually serve the specific complaint. Replacing the ultrasonic sensors or surround-view cameras, or reprogramming, presumes the cause. Identify the responsible sensors first.

48. D — Correct ride height is a prerequisite because incorrect ride height misaims body-mounted sensors and would bake in the error. It does not change radar frequency, erase software, or disable the gateway. Geometry must be correct before calibrating.

49. A — Intermittent multi-system faults with a corroded shared ground call for repairing the shared ground and re-verifying the affected systems. Replacing sensors or the gateway, or recalibrating first, ignores the shared cause. Pursue the shared root before swapping parts.

50. C — A complete repair with corrected root causes, calibrations, a clean post-repair scan, and a confirming road test demonstrates a repair is confirmed only when a post-repair scan plus functional

verification both pass. A completion message, cleared codes, or a normal start are not sufficient. Verification closes the loop on every ADAS repair.