PRACTICE EXAM 39

1. A vehicle's lane keeping, traffic sign recognition, and automatic high beams all malfunction at once. The most efficient explanation is:

A. Three separate module failures occurred simultaneously

B. The rear corner radar failed

C. The shared forward camera, its view, aim, or calibration is at fault

D. The ultrasonic sensors are obstructed

2. What does the acronym ADAS stand for?

A. Automatic Distance Alert Sensor

B. Advanced Detection And Steering

C. Advanced Driver Assistance Systems

D. Automated Driving Actuation System

3. A high-speed CAN bus at rest reads about 60 ohms between CAN-H and CAN-L. This indicates:

A. Two intact 120-ohm terminators in parallel

B. A short across the bus

C. A missing terminator

D. An open in the bus wiring

4. A forward camera was reinstalled on correct, clear glass after a bracket repair but not recalibrated, and lane keeping nudges inconsistently. The correct action is:

A. Replace the camera module

B. Replace the windshield

C. Perform the required camera calibration

D. Reprogram the gateway

5. Which sensor primarily provides adaptive cruise control with distance and closing-speed data?

A. The ultrasonic park sensors

B. The driver-monitoring camera

C. The rear corner radar

D. The forward radar

6. A radar reports a blocked condition after driving through mud. The best first action is:

A. Replace the radar module

B. Inspect and clear the fascia in front of the radar

C. Reprogram the gateway

D. Perform a dynamic calibration

7. Why must ride height be correct before calibrating forward sensors?

A. It changes the radar's frequency band

B. Incorrect ride height misaims body-mounted sensors

C. It erases the camera's software

D. It disables the gateway

8. A static calibration target distance is given as 1,500 mm. Converted to inches (25.4 mm/inch), that is approximately:

A. About 15 inches

B. About 38 inches

C. About 59 inches

D. About 150 inches

9. A blind spot warning complaint should be investigated at which sensor?

A. The forward long-range radar

B. The rear corner radar

C. The forward camera

D. The front ultrasonic sensors

10. A clean post-repair scan on a safety-critical system is:

A. Always fully sufficient to release the vehicle

B. A substitute for calibration

C. Only valid on hybrid vehicles

D. Necessary but not sufficient without functional verification

11. Which statement about ultrasonic sensors is correct?

A. They measure long-range closing speed via Doppler shift

B. They read lane markings

C. They operate only above highway speed

D. They handle close-range, low-speed parking detection

12. A module is unresponsive to the scan tool. Before replacing it, the technician should:

A. Recalibrate the camera

B. Reprogram the gateway

C. Confirm it has power, ground, and a bus connection

D. Replace it immediately

13. Static calibration is best described as:

A. Calibration with the vehicle stationary using fixed targets

B. Calibration performed while driving on a marked road

C. Calibration requiring no targets or controlled environment

D. Calibration achieved by reprogramming alone

14. A forward camera complaint appears only in heavy fog and clears in good weather. This is most likely:

A. An intermittent camera module failure

B. A normal visibility limitation

C. Radar interference with the camera

D. A gateway dropout in fog

15. Why does the forward radar's narrow beam make aim accuracy critical?

A. It reads lane lines at a distance

B. It detects objects only inches away

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

D. It self-corrects and aim is irrelevant

16. When several ADAS systems fail together with lost-communication codes, the best first move is to:

A. Replace the forward camera

B. Replace the most expensive sensor

C. Investigate a shared bus, gateway, or power/ground cause

D. Clear the codes and release

17. A voltage-drop test on an ADAS ground must be performed:

A. With the circuit de-energized

B. With the circuit loaded and operating

C. With the battery disconnected

D. By visual inspection only

18. A new forward camera, correctly installed, mounted, and configured on correct glass, still fails lane features. The most likely omission is:

A. The required calibration to establish the new camera's reference

B. A 12-volt battery replacement

C. A rear-axle alignment

D. A brake bleed

19. Excessive metallic paint on a bumper fascia in front of a radar can:

A. Change the vehicle's ride height

B. Distort the windshield glass

C. Reprogram the gateway

D. Attenuate the radar signal

20. Which feature relies on the forward-facing camera?

A. Adaptive cruise control

B. Rear cross-traffic alert

C. Traffic sign recognition

D. Blind spot warning

21. A composite-vehicle parameter question should be answered using:

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

B. The technician's memory of a real vehicle

C. An average of industry values

D. An assumption the feature is always active

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

A. An internal radar hardware failure

B. A likely normal, self-resolving blockage condition

C. A gateway communication fault

D. A camera optical distortion

23. Why must a forward camera be recalibrated after windshield replacement?

A. The camera loses its software

B. Replacing the glass disturbs the camera's position and aim

C. New glass is always tinted

D. The wipers must be re-timed

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

A. Disconnect the gateway

B. Fully charge the battery

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

D. Remove the rear bumper

25. A dynamic calibration will not complete on an unmarked road. The reason is:

A. The radar frequency changed

B. The camera cannot establish its reference without clear lane markings

C. The gateway disabled the camera

D. Ultrasonic interference blocked it

26. Which two features both rely on the rear corner radars?

A. Adaptive cruise and automatic emergency braking

B. Lane keeping and traffic sign recognition

C. Park assist and surround-view display

D. Blind spot warning and rear cross-traffic alert

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

A. A distorted windshield

B. A thrust-angle error

C. A painted ultrasonic sensor

D. The radar module or its internal bus interface

28. The Doppler effect allows radar to measure:

A. An object's closing speed

B. An object's color

C. An object's temperature

D. The windshield's clarity

29. A replaced ADAS module that does not function for the vehicle's options most likely still needs:

A. A brake bleed

B. A windshield replacement

C. Programming, configuration, initialization, and calibration

D. A wheel alignment only

30. Parking sensors false-alerting after a bumper repaint most likely indicate:

A. Excessive paint over the sensor faces

B. A failed forward radar

C. A distorted windshield

D. A discharged key fob

31. A static-calibration bay must have a level floor because:

A. The geometric relationship between vehicle and target depends on it

B. A slope raises the supply voltage

C. A slope changes the radar frequency

D. A level floor reprograms the camera

32. Which is the gateway module's primary function?

A. Aiming the forward radar

B. Measuring windshield clarity

C. Routing and translating communication between networks

D. Detecting close-range obstacles

33. A vehicle has 120 minutes for 50 questions. The average time per question is about:

A. 1.5 minutes

B. 3 minutes

C. 4 minutes

D. 2.4 minutes

34. A feature defined to default to ON after an ignition cycle reactivates each morning. The technician should:

A. Replace the control switch

B. Reprogram the module

C. Disconnect the fuse

D. Explain the behavior is normal and defined

35. Most camera and radar complaints trace to:

A. A truly failed sensor requiring replacement

B. The gateway exclusively

C. View/blockage, aim/calibration, network, or normal limits

D. Self-healing faults

36. A near-zero CAN-H to CAN-L resistance reading indicates:

A. Healthy termination

B. A missing terminator

C. An open circuit

D. A short across the bus

37. Why is functional verification required beyond a clean scan?

A. A misaimed sensor can complete and pass a scan

B. The scan recalibrates the sensors

C. Scans only work on hybrids

D. Verification updates the navigation maps

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

A. Windshield replacement

B. Collision repair disturbing the radar

C. A ride-height change

D. Refilling the washer fluid reservoir

39. A radar feature misjudges objects laterally after a bumper repair disturbed its mounting. The correct action is to:

A. Replace the radar module

B. Replace the windshield

C. Bleed the brakes

D. Correct the mounting and perform the required aiming/calibration

40. Sensor fusion is used because:

A. Each sensor's strengths cover another's weaknesses

B. It lets a single sensor do everything

C. It reduces modules on the bus

D. It welds sensors together

41. A vehicle's forward features all fail together; 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. Determine whether the shared camera needs recalibration or a software update

B. Replace the rear ultrasonic sensors

C. Replace the key fob battery

D. Check the tire pressure sensors

42. A pre-repair scan is performed to:

A. Recalibrate the sensors

B. Document existing fault codes and establish a baseline

C. Update navigation maps

D. Set climate preferences

43. Which tool transfers a vehicle reference point straight down to the floor?

A. A timing light

B. A plumb bob

C. A compression tester

D. A vacuum gauge

44. When every module reports losing communication with one specific module, suspect:

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

B. That all reporting modules failed

C. Shorted terminating resistors

D. A distorted windshield

45. A camera that washes out only under low-sun glare, with everything else verified, indicates:

A. An intermittent module failure

B. A normal visibility limitation

C. Radar interference

D. A gateway dropout

46. A procedure requires static then dynamic calibration. Completing only the static portion means:

A. The vehicle is fully calibrated

B. Dynamic is optional once static succeeds

C. The radar frequency must be reset

D. The calibration is incomplete

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

A. A misaimed corner radar after the repair

B. A discharged key fob

C. An outdated navigation map

D. A failed cabin camera

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

A. Execute, then research whether it was needed

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

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

D. Replace the sensor, then check for a complaint

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

A. Replace each affected sensor

B. Replace the gateway

C. Recalibrate all cameras first

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

50. An ADAS repair is confirmed complete when:

A. The calibration shows a completion message

B. The fault codes are cleared

C. A post-repair scan plus functional verification both pass

D. The vehicle starts normally

Answer Key & Full Answer Explanations

1. C — Lane keeping, sign recognition, and high beams failing together most efficiently trace to the shared forward camera, its view, aim, or calibration. Three simultaneous module failures, a corner radar fault, or ultrasonic obstruction do not explain all three. Shared sensors explain grouped failures.

2. C — ADAS stands for Advanced Driver Assistance Systems. These assist the driver through warnings or interventions rather than replacing the driver. The name captures their assistive purpose.

3. A — A ~60-ohm reading indicates two intact 120-ohm terminators in parallel. A short reads near zero, a missing terminator reads about 120, and an open reads very high. The value confirms healthy termination and wiring.

4. C — A communicating camera on correct, clear glass reinstalled after a bracket repair needs the required camera calibration. Replacing the camera or windshield or reprogramming would not address the disturbed reference. Any camera disturbance triggers recalibration.

5. D — The forward radar provides adaptive cruise with distance and closing-speed data. Ultrasonic, driver-monitoring, and corner radar serve other functions. Distance and closing speed are exactly what cruise needs.

6. B — The best first action for a mud-induced blocked condition is to inspect and clear the fascia in front of the radar. Replacing, reprogramming, or calibrating skips the obvious cause. Blockage is a normal protective response.

7. B — Ride height must be correct because incorrect ride height misaims body-mounted sensors. It does not change radar frequency, erase software, or disable the gateway. Geometry is a prerequisite to calibration.

8. C — 1,500 mm ÷ 25.4 ≈ 59 inches. Correct conversion places the target accurately, since an error mislocates it. Calibration specs frequently mix units.

9. B — A blind spot complaint is investigated at the rear corner radar, which covers the adjacent-lane zones. The forward radar, camera, and front ultrasonic sensors serve other functions. The affected feature identifies the radar.

10. D — A clean post-repair scan is necessary but not sufficient without functional verification. It is not always sufficient, not a calibration substitute, and not hybrid-only. A misaimed sensor can pass a scan.

11. D — Ultrasonic sensors handle close-range, low-speed parking detection. They do not measure long-range Doppler speed, read markings, or require highway speed. Short range suits parking.

12. C — Before replacing an unresponsive module, confirm it has power, ground, and a bus connection. Recalibrating, reprogramming, or replacing immediately risks discarding a good part. A powerless module appears dead but may be fine.

13. A — Static calibration is calibration with the vehicle stationary using fixed targets. It is not a driving, target-free, or reprogramming-only procedure. The stationary-plus-targets signature defines it.

14. B — A camera complaint only in heavy fog that clears in good weather is most likely a normal visibility limitation. A module failure, radar interference, or gateway dropout are not supported. The camera cannot see through fog by design.

15. C — A forward radar's aim is critical 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.

16. C — The best first move with multiple failures and lost-communication codes is to investigate a shared bus, gateway, or power/ground cause. Replacing the camera or priciest sensor, or clearing codes, ignores the pattern. The simplest shared cause usually explains all symptoms.

17. B — A voltage-drop test on a ground must be performed with the circuit loaded and operating. A de-energized, battery-disconnected, or visual approach would not reveal a load failure. Current must flow for the drop to appear.

18. A — A correctly installed, mounted, configured new camera on correct glass that still fails most likely lacks the required calibration to establish its reference. A battery, alignment, or brake bleed would not aim it. A new sensor must be calibrated.

19. D — Excessive metallic paint in front of a radar can attenuate the radar signal. It does not change ride height, distort the windshield, or reprogram the gateway. Refinish work directly affects radar transmission.

20. C — Traffic sign recognition relies on the forward-facing camera. Adaptive cruise and blind spot use radar, and rear cross-traffic uses corner radar. Sign reading is a camera capability.

21. A — A composite-vehicle parameter question is answered using the value defined in the reference. Real-vehicle memory, industry averages, or assumptions are unreliable. The reference is the single source of truth.

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

23. B — Recalibration after windshield replacement is required because replacing the glass disturbs the camera's position and aim. The camera does not lose software, tint is not the issue, and wiper timing is irrelevant. Even tiny changes require recalibration.

24. C — Before testing a park-assist system that can steer, ensure the area around and inside the vehicle is clear. Disconnecting the gateway, charging the battery, or removing the bumper do not address the actuation hazard. Any system that can move the vehicle needs a cleared area.

25. B — A dynamic calibration will not complete on an unmarked road because the camera cannot establish its reference without clear lane markings. Radar frequency, the gateway, and ultrasonic interference are not involved. Clear markings are essential to dynamic camera calibration.

26. D — Blind spot warning and rear cross-traffic alert both rely on the rear corner radars. Cruise and braking use the forward radar, lane and sign features use the camera, and parking/surround-view use ultrasonic and cameras. The corner radars serve the rear-side features.

27. D — A radar with good power, ground, and intact bus wiring that still cannot communicate points to the radar module or its internal bus interface. A windshield, thrust-angle error, or painted sensor would not cause a communication loss. Once the external circuit checks out, the module is the suspect.

28. A — 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.

29. C — A replaced module that does not function for the vehicle's options most likely still needs programming, configuration, initialization, and calibration. A brake bleed, windshield, or alignment alone would not complete the setup. Electronic setup and calibration are both required.

30. A — Parking false alerts after a repaint most likely indicate excessive paint over the sensor faces. A forward radar, windshield, or key fob would not cause this. Bumper refinishing is a classic ultrasonic fault source.

31. A — A level floor is required because the geometric relationship between vehicle and target depends on it. A slope does not raise voltage, change radar frequency, or reprogram the camera. Level geometry is the foundation of static calibration.

32. C — The gateway's primary function is routing and translating communication between networks. It does not aim radar, measure clarity, or detect obstacles. Its central role makes it key to multi-system diagnosis.

33. D — 120 minutes ÷ 50 questions = 2.4 minutes per question. This tight budget is why reference navigation speed matters. Triage protects that time.

34. D — A feature reactivating each morning per the defined default calls for explaining the behavior is normal and defined. Replacing the switch, reprogramming, or pulling the fuse are inappropriate. Defined defaults are not faults.

35. C — Most camera and radar complaints trace to view/blockage, aim/calibration, network, or normal limits rather than a failed sensor, a gateway-only cause, or self-healing. Sorting the failure type precedes replacement. This is the disciplined approach.

36. D — A near-zero CAN-H to CAN-L reading indicates a short across the bus. Healthy termination reads about 60, a missing terminator about 120, and an open very high. Near-zero specifically signals a short.

37. A — 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.

38. D — Refilling washer fluid 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.

39. D — A radar misjudging objects laterally after a disturbed mounting requires correcting the mounting and performing the required aiming/calibration. Replacing the radar or windshield or bleeding brakes would not restore aim. Correct mounting, then recalibrate.

40. A — Sensor fusion is used because each sensor's strengths cover another's weaknesses. It does not let one sensor do everything, primarily reduce modules, or weld sensors. Fusion lets radar measure distance while a camera classifies.

41. A — 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, the key fob, and tire pressure sensors are unrelated. The shared camera is the common denominator.

42. B — A pre-repair scan documents existing fault codes and establishes a baseline. It does not recalibrate, update maps, or set climate. The baseline distinguishes pre-existing issues from anything introduced later.

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

44. A — When every module reports losing one specific module, suspect that single named module or its power, ground, or bus connection. All reporting modules failing, shorted terminators, or distorted glass are far less likely. The relationship map points to the shared element.

45. B — A camera washing out only under low-sun glare, with everything verified, indicates a normal visibility limitation. A module failure, radar interference, or gateway dropout are not supported. Glare is a designed limitation of optical sensing.

46. D — Completing only the static portion of a static-then-dynamic procedure means the calibration is incomplete. Dynamic is not optional, the vehicle is not fully calibrated, and radar frequency is not reset. The full procedure must be performed.

47. A — 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.

48. B — 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.

49. D — 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 — An ADAS repair is confirmed complete 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.