PRACTICE EXAM 26

1. A vehicle has lane keeping, traffic sign recognition, and automatic high beams all failing together. Which is the MOST efficient first hypothesis?

A. The high-beam relay has failed independently

B. The traffic sign database is corrupted

C. The lane-marking paint is faded on local roads

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

2. Of the following, which is the PRIMARY input the forward radar provides to adaptive cruise control?

A. The color of the lead vehicle

B. The distance to and closing speed of the lead vehicle

C. The lane marking position

D. The ambient temperature

3. A radar reports a blocked condition after off-road driving. Which is the BEST first action?

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

B. Replace the radar module

C. Reprogram the gateway

D. Perform a dynamic calibration

4. Which factor is the MOST critical reason a forward camera must be recalibrated after windshield replacement?

A. The new glass is always a different color

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

C. The camera loses its software during removal

D. The wipers must be re-timed

5. Among these, which is the GREATEST risk of releasing a vehicle with a miscalibrated forward collision system?

A. Slightly reduced fuel economy

B. A dashboard warning lamp staying on

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

D. Increased tire wear

6. Which measurement is the MOST definitive for confirming a high-resistance connection on an ADAS power feed?

A. A de-energized resistance check

B. A voltage-drop test under load

C. A visual inspection of the connector

D. A key-off continuity test

7. A vehicle shows several modules on one bus segment offline while others respond. Which is the MOST logical fault location?

A. The shared bus segment or its gateway connection

B. Each offline module independently

C. The forward camera alone

D. The tire pressure sensors

8. Which is the BEST description of why high-speed CAN uses a twisted pair with differential signals?

A. To increase the supply voltage

B. To eliminate the need for terminators

C. To reject electrical noise and keep safety-critical data reliable

D. To convert digital signals to analog

9. When multiple ADAS systems fail together with lost-communication codes, which is the BEST first diagnostic move?

A. Replace the forward camera

B. Replace the most expensive sensor

C. Clear the codes and road test

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

10. Which is the PRIMARY purpose of a pre-repair scan?

A. To recalibrate the sensors

B. To document existing fault codes and establish a baseline

C. To update navigation maps

D. To set climate preferences

11. A lifted truck with oversized tires has a forward-collision complaint. Which action is MOST important before calibration?

A. Reprogramming the gateway

B. Restoring correct ride height and geometry

C. Replacing the forward radar

D. Cleaning the ultrasonic sensors

12. Which tool set is the MOST appropriate for establishing static calibration geometry?

A. Compression tester and timing light

B. Scan tool and battery charger

C. Tape measure, level, laser, square, string, and plumb bob

D. Torque wrench and feeler gauge

13. Which is the BEST reason a static calibration requires a clean, non-reflective background?

A. To keep the scan tool connected

B. To increase supply voltage

C. To change the radar's frequency

D. To prevent confusing or misleading the camera during calibration

14. A blind spot warning complaint is being diagnosed. Which radar is the MOST relevant to investigate?

A. The forward long-range radar

B. The rear corner radar

C. The driver-monitoring sensor

D. The front ultrasonic sensors

15. Which is the MOST accurate statement about a new, never-installed forward camera?

A. It still requires calibration to establish its reference to the vehicle

B. It arrives pre-aimed to every vehicle

C. It is exempt from calibration because it is new

D. It only needs a software update

16. Which is the BEST first response to a radar reporting a blocked condition after a snowstorm?

A. Inspect for and clear packed snow or ice on the fascia

B. Replace the radar module

C. Reprogram the gateway

D. Perform a wheel alignment

17. Which is the PRIMARY characteristic that makes radar suited to poor-weather operation?

A. It reads signs better than a camera

B. It detects objects only inches away

C. It requires no aiming

D. Radio waves pass through fog, rain, and snow

18. A camera complaint appears only in heavy fog and clears in good weather. Which is the MOST accurate interpretation?

A. The camera module is failing

B. The gateway drops messages in fog

C. This is likely a normal visibility limitation

D. The radar is interfering

19. Which is the BEST measurement to confirm 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

20. When every module reports losing communication with one specific module, which is the MOST efficient hypothesis?

A. All the reporting modules failed

B. The terminating resistors are shorted

C. The windshield is distorted

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

21. Which is the GREATEST concern when bumper refinishing is performed near a forward radar?

A. The tire pressure changes

B. The windshield tint changes

C. The wheel alignment resets

D. Excessive or metallic paint attenuating the radar signal

22. Which is the BEST description of dynamic calibration?

A. The sensor learns its reference by driving under specified road conditions

B. The sensor is calibrated against fixed targets while stationary

C. The sensor is calibrated on a bench off the vehicle

D. The sensor requires no defined conditions

23. A parking-sensor false-alert complaint began after a bumper repaint. Which is the MOST likely cause?

A. Excessive paint over the ultrasonic sensor faces

B. A failed forward radar

C. A distorted windshield

D. A discharged key fob

24. Which is the PRIMARY reason vehicle ride height must be correct before calibrating forward sensors?

A. It changes the radar's frequency

B. It erases the camera's software

C. Incorrect ride height misaims body-mounted sensors

D. It disables the gateway

25. Which is the BEST final step to confirm a safety-critical ADAS repair?

A. Functional verification, including a road test where needed

B. A completion message from the scan tool

C. Clearing the fault codes

D. A normal engine start

26. Which is the MOST likely cause when forward collision braking activates with no obstacle present after a bumper repair?

A. A painted rear ultrasonic sensor

B. A failed tire pressure sensor

C. A dead key fob

D. A misaimed forward radar producing false detections

27. Which best describes the PRIMARY weakness of radar compared with a camera?

A. Poor ability to classify or identify what an object is

B. Inability to measure distance

C. Inability to operate in darkness

D. Inability to measure closing speed

28. A forward camera communicates, the glass is clear and correct, the bracket is correct, and ride height is correct, yet forward features fail together. Which is the BEST next step?

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

29. Which is the MOST appropriate first action when several systems fail and the scan tool cannot reach one module?

A. Verify that module has power, ground, and a bus connection

B. Replace the module immediately

C. Recalibrate the camera

D. Reprogram the gateway

30. Which is the BEST reason to research a vehicle's service history before ADAS diagnosis?

A. To find the driver's radio presets

B. To check the fuel economy

C. To read the maintenance schedule

D. Prior repairs often disturb sensor aim and explain current faults

31. Which is the PRIMARY function of the gateway module?

A. To aim the forward radar

B. To route and translate communication between networks

C. To measure windshield clarity

D. To detect close-range obstacles

32. A dynamic calibration will not complete on a particular road. Which is the MOST likely culprit?

A. The shop floor is not level

B. The calibration target is misplaced

C. Faded or missing lane markings

D. The tire pressure system is disabled

33. Which is the BEST characterization of an "incorrect" calibration failure mode?

A. The calibration times out

B. The calibration completes but the sensor is misaimed

C. The calibration reports an error and aborts

D. The calibration cannot be initiated

34. Which is the MOST important reason to perform a post-repair scan plus functional verification?

A. A misaimed sensor can complete and pass a scan, so function must be confirmed

B. The scan recalibrates the sensors

C. It updates the navigation maps

D. It sets the climate control

35. Which is the PRIMARY sensor for traffic sign recognition?

A. The rear corner radar

B. The ultrasonic sensors

C. The forward-facing camera

D. The driver-monitoring camera

36. Which is the BEST description of why a forward radar's aim is so critical?

A. It reads lane lines at a distance

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

C. It must be aimed from inside the cabin

D. It detects objects only inches away

37. A vehicle's ultrasonic parking sensors fail to detect after a repaint. Which is the MOST likely cause?

A. A failed forward radar

B. Excessive paint or contamination on the sensor faces

C. A distorted windshield

D. A dead key fob

38. Which is the BEST reason to confirm a module has power and ground before replacing it?

A. A powerless or disconnected module appears dead but may not be failed

B. New modules never need configuration

C. Replacement is always faster than testing

D. Power and ground do not affect modules

39. Which is the MOST relevant geometric measurement when calibrating a forward sensor on a vehicle with a rear alignment issue?

A. The windshield rake angle

B. The thrust angle relative to the geometric centerline

C. The camera's field-of-view width

D. The radar's frequency band

40. Which is the PRIMARY reason ultrasonic sensors are limited to short range?

A. They are software-limited for safety

B. They share the radar's frequency band

C. Sound pulses attenuate quickly over distance

D. They only work above highway speed

41. A vehicle has multiple ADAS systems failing intermittently together. Which root-cause category is MOST consistent?

A. Four independent sensor failures

B. A distorted windshield

C. A shared power, ground, or network problem

D. A painted ultrasonic sensor

42. Which is the BEST action when a forward radar has good power, ground, and intact bus wiring but still cannot communicate?

A. Clear the fascia

B. Perform a wheel alignment

C. Replace the windshield

D. Suspect the radar module or its internal bus interface

43. Which is the MOST appropriate basis for answering a composite-vehicle parameter question?

A. The technician's memory of a similar real vehicle

B. An average of typical industry values

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

D. An assumption that the feature is always active

44. Which is the BEST first step when diagnosing a parking complaint on a system that fuses ultrasonic and camera data?

A. Replace the ultrasonic sensors

B. Determine which sensors actually serve the specific complaint

C. Reprogram the gateway

D. Replace the surround-view cameras

45. Which is the GREATEST reason functional verification matters more than a completion message for active systems?

A. Completion messages are only valid on hybrids

B. The scan recalibrates the system

C. Calibration must be done three times

D. A misaimed sensor can pass completion yet fail to protect the driver

46. Which is the PRIMARY reason a replaced ADAS module often needs programming and configuration beyond calibration?

A. To charge its internal battery

B. To clean its sensor face

C. To load correct software and match the vehicle's options

D. To aim it at the road

47. Which is the MOST accurate statement about the relationship between most radar complaints and a failed radar?

A. Most complaints require immediate radar replacement

B. Most complaints trace to blockage, misalignment, or network issues rather than a failed radar

C. Most complaints are gateway-only

D. Most complaints self-heal

48. Which is the BEST description of the L4 Composite Vehicle Type 1 Reference?

A. An electronic pop-up document available during the test for many questions

B. A printed booklet handed out only at the test center

C. A document available only before the test

D. A reference used for only one or two questions

49. Which is the MOST appropriate response when a customer reports a feature that reactivates after each ignition cycle, matching the reference's defined default?

A. Replace the control switch

B. Reprogram the module

C. Disconnect the feature's fuse

D. Explain the behavior is normal and defined

50. Which single principle BEST guides diagnosis of multiple simultaneous ADAS faults?

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

Answer Key & Full Answer Explanations

1. D — Lane keeping, sign recognition, and high beams failing together most efficiently trace to the shared forward camera or its view, aim, or calibration. An independent relay, a corrupted database, or faded paint each explains only one symptom, not all three. The shared sensor is the common denominator.

2. B — The forward radar's primary input to adaptive cruise is the distance to and closing speed of the lead vehicle. Color, lane position, and temperature are not what radar provides for gap control. Distance and closing speed are exactly what cruise needs.

3. A — 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, correctable cause. Blockage is a normal protective response.

4. B — The most critical reason to recalibrate after windshield replacement is that replacing the glass disturbs the camera's exact position and aim. Glass color, software loss, and wiper timing are not the issue. Even a tiny positional change requires recalibration.

5. C — The greatest risk of a miscalibrated forward collision system is that the driver trusts a system that may fail to detect a real hazard. Reduced economy, a warning lamp, and tire wear are minor by comparison. A trusted but wrong safety system is uniquely dangerous.

6. B — A voltage-drop test under load is the most definitive way to confirm a high-resistance connection. De-energized resistance, visual inspection, and key-off continuity can pass while the connection fails under load. Current must flow for the drop to appear.

7. A — Several modules offline on one segment while others respond most logically locates the fault in the shared bus segment or its gateway connection. Independent module failures, the camera alone, or tire pressure sensors do not fit the segment pattern. The affected-versus-unaffected pattern localizes the fault.

8. C — The best description is that the twisted-pair, differential design rejects electrical noise to keep safety-critical data reliable. It does not raise voltage, remove the need for terminators, or convert to analog. Noise immunity is the purpose of differential CAN.

9. D — 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 the priciest sensor, or clearing codes, ignores the pattern. The simplest shared cause usually explains all symptoms.

10. B — The primary purpose of a pre-repair scan is to document existing fault codes and establish a baseline. It does not recalibrate, update maps, or set climate. The baseline distinguishes pre-existing issues from anything introduced later.

11. B — The most important action before calibrating a lifted truck with oversized tires is restoring correct ride height and geometry. Reprogramming, replacing the radar, or cleaning sensors would not correct the aim. Geometry is a prerequisite to calibration.

12. C — The most appropriate geometry tools are a tape measure, level, laser, square, string, and plumb bob. Engine-performance and fastener tools do not position calibration targets. These simple tools build the calibration's accuracy.

13. D — A clean, non-reflective background is required to prevent confusing or misleading the camera during calibration. It does not affect scan-tool connection, voltage, or radar frequency. The bay environment is part of the procedure.

14. B — A blind spot complaint makes the rear corner radar the most relevant unit. The forward radar, driver-monitoring sensor, and front ultrasonic sensors serve other functions. The affected feature identifies the radar.

15. A — The most accurate statement is that a new camera still requires calibration to establish its reference to the vehicle. It does not arrive pre-aimed, is not exempt, and needs more than a software update. New parts need calibration too.

16. A — The best first response to a snow-induced blocked condition is to inspect for and clear packed snow or ice on the fascia. Replacing, reprogramming, or aligning skips the obvious cause. Blockage is a correctable, often-normal condition.

17. D — The primary characteristic suiting radar to poor weather is that radio waves pass through fog, rain, and snow. Sign reading is a camera strength, radar is not inches-only, and it does require aiming. Weather penetration is radar's signature advantage.

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

19. C — The best measurement to confirm supply is voltage at the supply pin with the key on. Key-off resistance, continuity to ground, and bus-terminator voltage do not verify live supply. Match the measurement to the question.

20. D — 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 glass distortion are less likely. The relationship map points to the shared element.

21. D — The greatest concern with refinishing near a forward radar is excessive or metallic paint attenuating the radar signal. Tire pressure, windshield tint, and alignment are unrelated. Refinish work directly affects radar transmission.

22. A — The best description of dynamic calibration is that the sensor learns its reference by driving under specified road conditions. Fixed targets while stationary is static, a bench procedure is different, and defined conditions are required. Motion and road conditions are its signature.

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

24. C — The primary reason ride height must be correct is that incorrect ride height misaims body-mounted sensors. It does not change radar frequency, erase software, or disable the gateway. Calibrating at the wrong height locks in the error.

25. A — The best final confirmation of a safety-critical repair is functional verification, including a road test where needed. A completion message, cleared codes, or a normal start are not sufficient. A misaimed sensor can pass a scan, so function must be confirmed.

26. D — The most likely cause of false collision braking after a bumper repair is a misaimed forward radar producing false detections. A rear sensor, tire pressure sensor, or key fob would not cause false braking. Repairs disturbing the radar's mounting cause false detections.

27. A — Radar's primary weakness compared with a camera is poor ability to classify or identify what an object is. It does measure distance, operate in darkness, and measure closing speed. Poor classification is why radar is fused with the camera.

28. 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.

29. A — The most appropriate first action when the scan tool cannot reach a module is to verify it has power, ground, and a bus connection. Replacing immediately, recalibrating, or reprogramming risks discarding a good part. A powerless or disconnected module appears dead but may be fine.

30. D — The best reason to research service history is that prior repairs often disturb sensor aim and explain current faults. Radio presets, fuel economy, and the maintenance schedule are not diagnostic leads. History targets prior work that disturbs sensors.

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

32. C — The most likely culprit for a dynamic calibration not completing on a road is faded or missing lane markings. A level floor and target placement belong to static calibration, and TPMS status is irrelevant. Dynamic calibration depends on road conditions.

33. B — The "incorrect" failure mode is best characterized as the calibration completing but the sensor being misaimed. Timing out is incomplete, reporting an error is unsuccessful, and not initiating is a separate issue. The incorrect mode is the most dangerous because it can pass.

34. A — The most important reason for a post-repair scan plus functional verification is that a misaimed sensor can complete and pass a scan, so function must be confirmed. The scan does not recalibrate, update maps, or set climate. Verification closes the loop.

35. C — The primary sensor for traffic sign recognition is the forward-facing camera. The corner radar, ultrasonic sensors, and driver-monitoring camera serve other functions. Sign reading is a camera capability.

36. B — A forward radar's aim is critical because a small angular error becomes a large miss far ahead. It does not read lane lines, mount in the cabin, or detect inches-away objects. Beam geometry magnifies small aim errors.

37. B — The most likely cause of ultrasonic sensors failing to detect after a repaint is excessive paint or contamination on the sensor faces. A forward radar, windshield, or key fob would not cause this. Bumper refinishing commonly disables ultrasonic sensors.

38. A — The best reason to confirm power and ground before replacing a module is that a powerless or disconnected module appears dead but may not be failed. New modules can need configuration, testing is not always slower, and power and ground do affect modules. Verify the basics before condemning.

39. B — The most relevant geometric measurement with a rear alignment issue is the thrust angle relative to the geometric centerline. Windshield rake, camera field of view, and radar frequency are unrelated to tracking direction. Forward sensors are referenced to the thrust line.

40. C — Ultrasonic sensors are short-range primarily because sound pulses attenuate quickly over distance. They are not software-limited, do not share radar's band, and do not require highway speed. Short range is inherent to sound-based sensing.

41. C — Intermittent simultaneous failures are most consistent with a shared power, ground, or network problem. Four independent failures, glass distortion, or a painted sensor would not produce this pattern. Shared electrical and network faults cause widespread intermittent symptoms.

42. D — The best action when a radar has good power, ground, and intact wiring but still cannot communicate is to suspect the radar module or its internal bus interface. Clearing the fascia, aligning, or

replacing glass would not restore communication. Once the external circuit checks out, the module is the suspect.

43. C — The most appropriate basis for a composite-vehicle parameter question is the value defined in the Composite Vehicle Type 1 Reference. Memory of a real vehicle, industry averages, or assumptions are unreliable. The reference is the single source of truth.

44. B — The best first step on a fused parking system is to determine which sensors actually serve the specific complaint. Replacing the ultrasonic sensors or surround-view cameras, or reprogramming, presumes the cause. Identify the responsible sensors before acting.

45. D — Functional verification matters more than a completion message because a misaimed sensor can pass completion yet fail to protect the driver. Completion is not hybrid-only, the scan does not recalibrate, and a three-times rule does not exist. Confirmed function is the standard.

46. C — A replaced module often needs programming and configuration beyond calibration to load correct software and match the vehicle's options. It is not about charging a battery, cleaning a face, or aiming. Electronic setup and calibration are different required jobs.

47. B — Most radar complaints trace to blockage, misalignment, or network issues rather than a failed radar. Immediate replacement, a gateway-only cause, or self-healing are incorrect generalizations. Sorting the failure type before replacing is the disciplined approach.

48. A — The L4 reference is best described as an electronic pop-up document available during the test for many questions. It is not printed-only, pre-test-only, or limited to one or two questions. Its on-screen availability shapes reference strategy.

49. D — The most appropriate response to a feature reactivating after each ignition cycle matching the defined default is to explain the behavior is normal and defined. Replacing the switch, reprogramming, or pulling the fuse are inappropriate. Defined defaults are not faults.

50. D — The single best guiding principle for multiple simultaneous faults is to find the single shared cause that explains all the symptoms. Replacing the priciest sensor, isolating each system, or clearing codes ignores the pattern. Multiple faults usually share one root.