PRACTICE EXAM 6: ASE L4 SIMULATION (50 QUESTIONS)

1. A scan tool reveals that five modules on a single CAN bus are reporting lost communication codes. A resistance measurement across the bus wires reads 40 ohms. The most accurate interpretation of these combined findings is:

A. A healthy bus with a separate unrelated module-level fault in each affected unit

B. A short between CAN-H and CAN-L combined with the expected cascade of U-codes

C. The affected modules have all failed internally by coincidence on the same day

D. Normal readings that do not indicate any actual fault in the vehicle's system

2. The Electronic Power Steering Module on a composite-architecture vehicle receives a torque-intervention request during active lane keep assistance. The request originates from which source?

A. The ADAS Central Module over the public ADAS CAN bus communication

B. The forward-facing camera directly through a dedicated hardwired signal

C. The steering angle sensor through a private steering column interface

D. The Gateway Module after polling the ultrasonic system parking state

3. A pre-repair scan shows a history code for lost communication with the forward radar module along with current DTCs for the same condition. The most productive interpretation is:

A. The history code indicates a resolved past issue with no current relevance

B. Only the current code matters and the history code should be ignored

C. A recurring intermittent condition warranting supply, ground, and CAN bus investigation

D. Normal operation that occurs frequently on all ADAS-equipped vehicles today

4. A technician is explaining to an apprentice why voltage drop testing is more diagnostically valuable than continuity testing for marginal connections. The most accurate explanation is that voltage drop testing:

A. Uses a higher test voltage than continuity testing provides in all cases

B. Requires specialized scope equipment that basic multimeters cannot supply

C. Is the only test that can be performed on modern automotive vehicles safely

D. Is performed with the circuit energized under load, revealing resistance continuity tests miss

5. A customer reports that after disconnecting the battery for several hours during unrelated service, multiple ADAS features "don't work like they used to." The most productive investigation is:

A. Checking OEM service information for modules requiring relearn or initialization after battery loss

B. Replacing every affected module with new units one at a time for elimination

C. Performing a full static calibration sequence on every ADAS sensor on the vehicle

D. Delivering the vehicle with a note telling the customer to drive normally for a week

6. An ADAS repair has been completed and the technician is about to deliver the vehicle. The post-repair scan shows no current codes. Which action is most appropriate next?

A. Delivering the vehicle immediately since the scan tool showed no faults stored

B. Keeping the vehicle overnight to see if any codes appear during shop downtime

C. Performing a static calibration of every ADAS sensor regardless of what was repaired

D. Conducting operational verification including a road test exercising the affected features

7. A fuse supplying switched ignition voltage to multiple ADAS modules opens after a recent aftermarket trailer wiring installation. The most likely cause is:

A. Normal operation — fuses often open during the first use after any service

B. A short or excessive load introduced by the aftermarket trailer wiring work

C. Internal failure of every ADAS module on the affected fuse simultaneously

D. The main vehicle battery requires immediate replacement as the root cause

8. A vehicle exhibits a pattern where adaptive cruise control works on one test drive but fails on the next, with no clear operating-condition difference between them. Freeze frame data from the intermittent DTC captures battery voltage at 11.8 volts at the moment of fault. The most accurate interpretation is:

A. Normal battery voltage behavior that does not affect any ADAS systems

B. The scan tool has miscommunicated with the vehicle during the fault event

C. Low supply voltage during ADAS operation is triggering the fault — investigate the charging system

D. The vehicle must be road tested for multiple additional sessions before any action

9. Technician A says that pre-repair and post-repair scans are only required for collision repair work. Technician B says they should be performed on every significant ADAS-related repair regardless of cause. Who is correct?

A. Both technicians are correct under different circumstances entirely

B. Technician A is correct and Technician B is wrong in all cases

C. Neither technician is correct in this scenario given the context

D. Technician B is correct and Technician A is wrong

10. A customer's vehicle arrives with a specific complaint that forward collision warning chimes randomly in normal driving. The pre-repair scan shows no stored codes. The enable criteria for a related code require sustained highway speed. The most productive next action is:

A. A test drive under sustained highway conditions while monitoring scan tool data

B. Clearing all codes and delivering the vehicle to the customer for longer observation

C. Replacing the forward radar module as the most likely source of the random chime

D. Reprogramming the ADAS Central Module with the most current firmware version

11. A radar module replacement has been completed and the scan tool shows successful programming and coding. Before delivering the vehicle, the technician notices the scan tool still reports a "calibration required" code. The most accurate interpretation is:

A. The module replacement was unsuccessful and requires installation of another new unit

B. The scan tool is misreporting and the code can be safely cleared for delivery

C. Calibration has not yet been performed — this is the expected post-replacement state

D. The vehicle's battery requires immediate replacement to clear the stored code

12. A technician observes a bus waveform on the oscilloscope showing CAN-H rising to 3.5 volts during dominant bits while CAN-L falls to 1.5 volts during the same bits. The most accurate interpretation is:

A. The bus is defective and the waveform should be identical on both wires

B. Healthy CAN bus operation with correct differential signaling behavior

C. A short to ground affecting one wire and not the other at the measurement point

D. Abnormal termination requiring immediate correction before any further diagnosis

13. A forward camera has been replaced on a vehicle and the scan tool reports that programming, coding, and initialization have all completed successfully. Lane keep assistance still does not function correctly during a test drive. The most productive next action is:

A. Replacing the forward camera a second time with another new unit assembly

B. Reprogramming the Electronic Power Steering Module with current software

C. Delivering the vehicle since all scan tool steps showed success for the repair

D. Performing the OEM-specified camera calibration that has not yet been completed

14. OEM position statements regarding ADAS repair typically have which relationship to shop liability?

A. Deviation from position statements exposes the shop to significant liability in disputes

B. Position statements are only relevant at dealerships and not independent shops

C. Position statements are suggestions that carry no weight in legal proceedings

D. Following position statements increases shop liability during collision repair work

15. The Gateway Module on a typical ADAS-equipped vehicle has which architectural role that affects scan tool diagnostics directly?

A. It houses the ADAS Central Module processing for all driving automation tasks

B. It hosts the warning chime that sounds during forward collision warning events

C. It serves as the interface between internal networks and the external OBD-II connector

D. It directly commands every ADAS actuator during intervention events for safety

16. A customer reports that two features — lane keep assistance and automatic emergency braking — both stopped working simultaneously. Other ADAS features continue to operate normally. The most productive starting point considers which shared component?

A. The ultrasonic parking sensors and the rear bumper cover mounting conditions

B. The ADAS Central Module or the communication pathway between sensors and outputs

C. The Telematics Control Module cellular connectivity and GPS antenna function

D. The four-wheel alignment and steering angle sensor positional zero point

17. A bidirectional test commanded through the scan tool activates the Electronic Power Steering Module's lane keep assist request. The EPS module responds correctly. The most accurate interpretation of this successful test is:

A. Every component in the entire lane keep assist pathway has been fully verified

B. The forward camera must be functioning perfectly for the test to have succeeded

C. The problem must lie with the ADAS Central Module since EPS responded correctly

D. The output side from EPS through the steering motor is verified — the upstream logic is still to be tested

18. A CAN bus resistance reading of 120 ohms with the ignition off most likely indicates:

A. The bus is operating normally with both terminators correctly installed

B. A direct short between CAN-H and CAN-L somewhere on the bus run

C. One terminator is isolated from the measurement point — either a break in the bus or a missing module

D. A complete failure of every module on the bus simultaneously requiring replacement

19. A scan tool data stream from the forward camera shows detected lane position oscillating rapidly between left and right lane positions on a straight, empty highway with clear markings. The most likely cause is:

A. An obstruction or contamination affecting the camera's forward view interpretation

B. Normal behavior that always occurs when lane markings are clearly visible to cameras

C. The Electronic Power Steering Module has failed and must be replaced immediately

D. A completely failed ADAS Central Module requiring extensive reprogramming work

20. A technician is diagnosing a complaint where traffic sign recognition works during daytime but fails at night. The most productive investigation considers which combination of factors?

A. The forward camera's sensitivity to radar interference from other vehicles

B. Camera view impairment, infrared illumination of signs, or windshield contamination

C. The Gateway Module's routing of TSR messages across the public CAN bus

D. The ACC switch inputs on the steering wheel and their electrical connection path

21. On a composite-architecture vehicle, the forward camera supports LKA, LDW, TSR, and HBA simultaneously. A failure of the forward camera module would most likely produce which observed customer pattern?

A. Only lane keep assistance failing while the other three features work correctly

B. Only traffic sign recognition failing while steering-related features work fine

C. Only blind spot warning failing while camera-dependent features continue to work

D. All four camera-dependent features failing together in a single observable pattern

22. A driver monitoring camera installed behind the rearview mirror on a vehicle is receiving a complaint of false drowsiness warnings. A pre-service inspection reveals an aftermarket sunshade covering the upper windshield area where the camera is mounted. The most productive first action is:

A. Removing the sunshade to restore the driver monitoring camera's view of the driver

B. Replacing the driver monitoring camera as a likely cause of the false warnings

C. Reprogramming the Gateway Module to address the intermittent camera warnings

D. Performing a dynamic calibration drive to compensate for the sunshade placement

23. A customer reports that the surround view display now shows a distorted or misaligned seam between the front and left-side camera views. The left exterior mirror was replaced during a recent body shop repair. The most likely cause is:

A. The Gateway Module has failed during the mirror replacement procedure

B. Non-OEM paint applied to the mirror housing has affected the camera lens

C. The left-side surround view camera requires calibration after the mirror replacement

D. Normal operation that surround view always exhibits with any camera-equipped mirror

24. Lane keep assistance provides correct steering input most of the time but occasionally steers in the wrong direction when passing through construction zones with temporary lane markings. The most accurate interpretation is:

A. An internal failure of the forward camera requires replacement with a new module

B. The Electronic Power Steering Module requires reprogramming with current software

C. A complete ADAS Central Module reprogramming will address the construction zone issue

D. A feature limitation where conflicting or temporary markings can confuse the camera

25. A forward camera calibration has been attempted three times under identical shop conditions, with each attempt failing at approximately 15 minutes into the dynamic drive portion. The most productive investigation considers:

A. Replacing the forward camera since three attempts have not succeeded at calibration

B. Driving conditions during each attempt — speed range, lane markings, weather, traffic

C. Reprogramming the Electronic Power Steering Module to support dynamic calibration

D. Performing a static calibration only and skipping the required dynamic portion

26. A vehicle equipped with a forward camera has had its windshield replaced with OEM glass. A protective film remains on a portion of the new windshield. The most productive action before attempting calibration is:

A. Removing all protective films and residue from the camera's forward view area

B. Proceeding with the calibration since OEM glass was used in the replacement

C. Replacing the forward camera as a precaution against film-related interference

D. Performing a four-wheel alignment to adjust the camera's geometric reference

27. The driver monitoring camera on a vehicle commonly faces which environmental challenge that affects its ability to observe the driver?

A. Bright ambient sunlight falling on the steering wheel area during the day

B. Normal dashboard warning lights illuminating the driver's face during operation

C. Road vibrations causing the camera mount to loosen over time on most vehicles

D. Reflective sunglasses or tinted eyewear blocking the infrared imaging signal

28. A scan tool reports that forward camera initialization failed during a post-replacement procedure. Programming and coding completed successfully. The most productive investigation considers:

A. Replacing the forward camera with a second new unit as a precaution

B. Proceeding directly to calibration since initialization is optional on most vehicles

C. Reviewing OEM service information for specific initialization requirements and sequence

D. Performing a dynamic calibration drive to complete initialization while driving

29. The composite vehicle's forward-facing camera heater activates under which combination of conditions according to the reference document?

A. Only during the vehicle's highway driving at sustained speeds above 55 mph

B. At approximately 50°F or colder ambient temperature, or when front/rear defrost is on

C. Only during rainy or snowy weather as detected by an external rain sensor

D. Whenever the vehicle's ignition is switched on regardless of any other conditions

30. A forward camera that fails only in direct sunlight when driving eastward during morning hours is most likely experiencing:

A. Temporary sun-glare sensitivity that can blind camera operation under specific conditions

B. A complete internal camera failure requiring replacement with a new module

C. Electronic Power Steering Module interference with the forward camera's data output

D. The ADAS Central Module's rejection of all camera data during daylight operation

31. A radar module's target detection range specification depends most directly on which radar parameter?

A. The color of the vehicle's paint in the surrounding environment during the drive

B. The type of bumper cover material mounted over the radar in the vehicle's grille

C. The driver's preference settings entered through the infotainment menu interface

D. The radar's operating frequency band and the antenna gain specification

32. A customer's adaptive cruise control works correctly for several minutes, then disables itself without warning. The pre-repair scan shows a history code for intermittent forward radar communication. The most productive investigation considers:

A. Replacing the forward radar module immediately based on the history code presence

B. Reprogramming the ADAS Central Module with the current firmware release available

C. The forward radar's supply voltage, ground integrity, and CAN bus connections under load

D. Delivering the vehicle without further investigation since the code is only history

33. On the composite vehicle, the four corner radar modules communicate over a private CAN bus. The primary node on that bus is designated as:

A. The ADAS Central Module which serves as the hub for all private bus communications

B. The left rear corner radar module which aggregates data from all four corner radars

C. The right front corner radar module which handles the longest communication distance

D. The Gateway Module which routes private bus data into the public ADAS CAN network

34. A technician measures resistance across a private CAN bus on the composite vehicle and reads 30 ohms instead of the expected 60 ohms. The most likely cause of this reading is:

A. A short between CAN-H and CAN-L or an additional parallel conduction path

B. Normal operation for a bus with three or more active modules connected together

C. One terminator has been disconnected, leaving only one 120-ohm terminator active

D. All the terminators on the bus have somehow failed simultaneously requiring replacement

35. A forward radar module has been replaced and the scan tool shows successful programming. Adaptive cruise control is enabled and tested on a test drive. The ACC does not respond to vehicles ahead. The most likely cause is:

A. The replacement radar is defective and requires exchange with another new unit

B. The Electronic Brake Control Module has failed simultaneously with the radar work

C. Software corruption in the ADAS Central Module requires complete reprogramming

D. Static and/or dynamic calibration has not been performed on the new module yet

36. A corner radar module replacement has been completed with programming, coding, and initialization verified. Before the vehicle is returned to the customer, the required remaining step is:

A. Scheduling the customer for a follow-up appointment to complete the work in phases

B. Complete reprogramming of every other ADAS module to match the new corner radar

C. Performing the OEM-specified calibration procedure for that specific corner radar

D. A standard oil change service to reset the vehicle's maintenance reminder system

37. A customer reports that automatic emergency braking has been triggering when driving past metal roadside guardrails. The forward radar was calibrated three months ago and no recent service has occurred. The most productive investigation considers:

A. Replacing the forward radar module as a precaution against calibration drift

B. Possible calibration drift since initial service, contamination, or mounting disturbance

C. Reprogramming the Electronic Brake Control Module with the current firmware release

D. The customer's driving habits which may need adjustment for rural road conditions

38. A radar calibration performed with a target positioned at 3.5 meters instead of the OEM-specified 3.0 meters is most likely to result in:

A. Silent miscalibration that reports success but produces degraded real-world performance

B. Immediate calibration failure aborting the procedure at the scan tool's initial screen

C. Enhanced radar performance from the additional reference distance in the calibration

D. Automatic compensation by the scan tool's software that detects the distance variance

39. Blind spot warning on the right side of a vehicle has begun producing false alerts during dry, clear weather. Corner radar calibrations were completed correctly last month. The most productive first investigation is:

A. Replacing the right rear corner radar module as a precaution against internal failure

B. Reprogramming the ADAS Central Module with the most current software available

C. Performing a four-wheel alignment to correct the thrust angle reference precisely

D. Inspecting the right rear area for aftermarket modifications, accessories, or debris affecting radar

40. Non-OEM bumper covers may degrade forward radar performance because they:

A. Contain mandatory amplifier circuits that interfere with radar electronics in all cases

B. Produce electromagnetic interference at the specific 77 GHz radar operating frequency

C. May not meet the radar transparency specification required for the signal frequency

D. Always physically block the radar module from being installed in the vehicle

41. A radar module's bidirectional self-test reports all functions passing through the scan tool. The customer's ACC complaint persists during actual driving. The most accurate interpretation is:

A. The radar is fully confirmed healthy and the issue must be in the driver's technique

B. Self-test confirms basic function — the problem may be in calibration or downstream pathways

C. The scan tool's self-test is unreliable and should never be used in ADAS diagnosis

D. The radar should be replaced immediately based on the real-world complaint persistence

42. On the composite vehicle, a technician removes one corner radar module for bench testing. After reconnecting the module, the private CAN bus returns to normal operation. The most accurate observation is:

A. The removed module's terminator had been restored to the bus, returning it to proper resistance

B. The bus will always work without any terminators present on the communication lines

C. Corner radars do not contain terminators and do not affect bus resistance

D. The Gateway Module provides terminators for the private bus regardless of corner radar state

43. A forward radar calibration on a vehicle has been attempted with the fuel tank showing 1/8 capacity. The OEM procedure specifies the tank must be at least half full. The most likely outcome of proceeding is:

A. The scan tool will detect the fuel level and abort the calibration procedure immediately

B. The calibration will complete with enhanced accuracy due to the reduced vehicle weight

C. Automatic compensation by the ADAS Central Module will correct for the fuel level

D. Silent miscalibration — the procedure will complete but the vehicle ride height affects accuracy

44. A customer reports that the forward radar was calibrated at an independent shop three months ago. The vehicle now exhibits AEB triggering on stationary roadside objects. The customer brings the vehicle to a different shop. The most professional response from the second shop is:

A. Declining to work on the vehicle since another shop performed the previous service

B. Delivering the vehicle with a note blaming the previous shop for any ADAS issues

C. Investigating the current symptoms, verifying preconditions, and offering recalibration if appropriate

D. Replacing the forward radar module without any diagnostic investigation as a starting point

45. A forward radar calibration is performed on an unlevel shop floor. The scan tool shows successful completion. The vehicle is returned to the customer. The most likely long-term outcome is:

A. Gradual improvement of the radar's performance over the next several weeks of driving

B. Silent miscalibration producing degraded ADAS performance that the customer will discover

C. Complete radar failure within one week of the vehicle leaving the shop's parking area

D. Normal ADAS operation with no detectable consequences from the calibration procedure

46. A customer reports that the rear parking sensors have stopped working after the vehicle's rear bumper cover was replaced at a body shop. Other ADAS features continue to work normally. The most productive first investigation is:

A. Physical inspection of the ultrasonic sensors for paint coating, position, or damage

B. Replacing every ultrasonic sensor in the rear bumper as a precaution against failure

C. Reprogramming the Ultrasonic Control Module with the most current software release

D. Complete replacement of the rear bumper cover again with another new OEM unit

47. A single ultrasonic sensor has been identified as internally failed based on scan tool data. Supply voltage and ground at the sensor connector are verified normal. The correct next step is:

A. Replacing the entire Ultrasonic Control Module along with every sensor on the bumper

B. Complete reprogramming of the ADAS Central Module with the current firmware release

C. Replacing the individual failed sensor and verifying operation through the scan tool data

D. Performing a dynamic calibration drive cycle to reset the ultrasonic system parameters

48. A customer's parking assist chimes continuously in an empty, open parking lot. The ultrasonic sensors and bumper cover appear physically clean upon inspection. The most productive next investigation is:

A. Replacing every ultrasonic sensor as a precaution against internal contamination

B. Reviewing scan tool data for individual sensor performance to identify any reporting issues

C. Reprogramming the Ultrasonic Control Module with the current software release available

D. Performing a dynamic calibration drive cycle to reset all ultrasonic parameters completely

49. On the composite vehicle, the Ultrasonic Control Module sends aggregated detection data to which destination?

A. Directly to the driver monitoring camera for cross-referencing purposes at all times

B. A dedicated private CAN bus exclusively shared with the Gateway Module only

C. The ADAS Central Module over the public ADAS CAN bus connection network

D. The Electronic Brake Control Module directly for immediate braking response actions

50. A customer reports intermittent parking assist failures during winter driving in freezing conditions. The sensors appear clean upon inspection in the warm shop. The most likely cause is:

A. Ice accumulation on the sensor transducer faces that melts before arriving at the shop

B. Internal failure of every ultrasonic sensor simultaneously during each cold event

C. Complete failure of the Ultrasonic Control Module requiring replacement with new unit

D. The ADAS Central Module requires reprogramming for cold-weather operating conditions

PRACTICE EXAM 6: ANSWER KEY AND EXPLANATIONS

1. B — A resistance reading of 40 ohms (below the healthy 60 ohms) combined with lost-communication codes across multiple modules indicates a short between CAN-H and CAN-L. The short disables bus communication, which produces the cascade of U-codes as affected modules cannot reach each other. Both findings together paint a coherent picture of a single root cause.

2. A — The ADAS Central Module is the decision-making hub that issues steering intervention requests to the Electronic Power Steering Module over the public ADAS CAN bus. The EPS module then translates the request into commanded current to the steering motor. The ADAS Central Module issues requests rather than directly commanding the actuator — an important architectural distinction.

3. C — A history code paired with a current code for the same condition indicates an ongoing intermittent fault that has recurred after initial resolution. This pattern warrants investigation of the affected circuit's supply, ground, and communication integrity under load — not dismissal as resolved or as normal operation.

4. D — Voltage drop testing is performed with the circuit energized and under operating load, which reveals resistance that only manifests when current is actually flowing. Continuity testing uses very low current and cannot detect the resistance that causes real-world circuit failures under load, making voltage drop the more sensitive diagnostic tool.

5. A — Battery disconnection can cause various modules to lose learned data and require initialization or relearn procedures before they function correctly. Checking OEM service information for specific relearn requirements is the productive first step and avoids unnecessary parts replacement or speculative calibration on modules that simply need a relearn procedure.

6. D — A clean scan tool does not prove that ADAS features work correctly under real-world conditions. Operational verification through a road test that exercises the affected features is required to confirm the repair is genuinely complete. Scan-tool-only verification is insufficient for any significant ADAS repair.

7. B — Aftermarket trailer wiring installations frequently introduce shorts or excessive loads onto existing circuits, which causes fuses protecting those circuits to open. This is the statistically most likely cause when a fuse opens shortly after aftermarket electrical work, and it points to inspecting the newly-added wiring before assuming module or battery failure.

8. C — Freeze frame data capturing battery voltage at 11.8 volts during fault conditions points directly to low supply voltage triggering the ADAS module to abandon operation. The charging system, battery condition, or parasitic draw affecting voltage under load must be investigated. Low voltage during calibration or operation is a well-documented cause of ADAS fault codes.

9. D — Technician B is correct. Pre-repair and post-repair scans should be performed on every significant ADAS-related repair, not just collision work. OEM position statements from multiple manufacturers now require this documentation for any ADAS-related service, and it protects the shop regardless of the specific repair category.

10. A — A complaint of random forward collision warning chimes with no stored codes is likely because the enable criteria for the relevant diagnostic monitor have not been met during in-shop testing. A test drive under sustained highway conditions while monitoring scan tool data will either reproduce the fault or reveal what the system is observing that triggers the warning.

11. C — A "calibration required" code on a newly-replaced radar module that has been programmed and coded is the expected state before calibration has been performed. The code will clear once OEM-specified calibration is completed successfully. This is not a fault requiring module replacement or code clearing, it's a correct status indication.

12. B — A CAN bus with CAN-H rising to 3.5 volts during dominant bits while CAN-L simultaneously falls to 1.5 volts is displaying correct differential signaling behavior. This mirrored-signal pattern is the expected waveform for a healthy CAN bus, and the differential between the two wires is what receivers read to extract data.

13. D — After confirmed programming, coding, and initialization, a forward camera that still does not produce correct feature behavior has not been calibrated to the vehicle's reference frame. Calibration is a separate and required step; skipping it leaves the camera functioning but lacking the geometric reference needed for correct feature operation.

14. A — OEM position statements define the standard of care expected of technicians performing ADAS-related repairs, and deviation exposes the shop to significant liability in insurance and legal disputes. Following them is the safe professional default; position statements are neither suggestions nor irrelevant outside dealer networks.

15. C — The Gateway Module serves as the interface between the vehicle's internal CAN networks and the external OBD-II diagnostic connector. This architectural role means that scan tool access to any vehicle module routes through the Gateway; a failed Gateway can cause diagnostic communication problems even when the individual modules are functional.

16. B — Simultaneous failure of two ADAS features that depend on different sensors but are both orchestrated by the ADAS Central Module points to the ADAS Central Module itself or to the communication pathway that coordinates sensor inputs with output module responses. Shared upstream logic, not sensor-specific hardware, is the productive starting investigation.

17. D — A successful bidirectional test of the EPS module's lane keep assist response verifies only the output side of the lane keep pathway — from EPS through the steering motor. It does not verify the upstream chain (forward camera detection, ADAS Central Module decision-making, request routing), so the remaining components must still be investigated to fully verify feature function.

18. C — A CAN bus resistance of 120 ohms indicates that one terminator is isolated from the measurement point, which typically means either a break in the bus between the measurement point and one terminator, or that a module containing a terminator has been removed. A healthy bus reads 60 ohms (both terminators in parallel).

19. A — Lane position oscillation on a straight highway with clear markings indicates the forward camera is having trouble interpreting its forward view. An obstruction, contamination, or mild mechanical disturbance of the camera is the most common cause; the camera cannot settle on a stable interpretation of where the vehicle is within the lane.

20. B — Traffic sign recognition that works in daylight but fails at night points to the camera's ability to see signs in the dark — typically impaired by windshield contamination that scatters low light, insufficient infrared illumination of the signs, or camera view issues that become apparent only in dim conditions.

21. D — A forward camera failure would affect all the features that depend on the camera (LKA, LDW, TSR, HBA) simultaneously. A partial pattern (only one or two features failing while others work) rules out complete camera failure and points to feature-specific pathways instead. Multi-feature simultaneous failure is the signature of shared-sensor faults.

22. A — A sunshade covering the upper windshield area blocks the driver monitoring camera's view of the driver. Removing the physical obstruction is the fast, cost-free first step — electronic diagnosis or calibration cannot compensate for a camera whose view is physically blocked by an accessory.

23. C — Exterior mirror replacement disturbs the mounting of the surround view camera housed in the mirror. The Surround View Module's stitching of the composite image depends on accurate camera calibration, and a newly mounted camera position must be calibrated to the vehicle's reference frame to produce seamless image edges.

24. D — Temporary construction zone lane markings conflicting with permanent markings below them can confuse camera-based lane detection. This is a documented feature limitation rather than a malfunction; the camera attempts to track what it sees, and conflicting or ambiguous references produce occasional errors that a correctly calibrated system cannot always avoid.

25. B — Dynamic calibration failures at a consistent 15-minute mark typically point to driving conditions that cannot sustain the calibration's requirements — speed range violations, inadequate lane markings in that section of road, or weather changes. Reviewing the actual drive conditions during each attempt is more productive than speculative module replacement.

26. A — Protective films left on replacement windshields in the camera's viewing area produce a "view obstructed" condition that prevents calibration from completing. Removing any films, adhesive residue, or debris from the camera's forward view area is the required first step before calibration will succeed.

27. D — Driver monitoring cameras depend on infrared imagery, and reflective sunglasses or tinted eyewear can block or scatter the infrared signal the camera uses to observe the driver's face and eyes. This is a common cause of false drowsiness or distraction warnings, and it is a known limitation of infrared-based driver monitoring.

28. C — Failed initialization after successful programming and coding means the OEM's specific initialization sequence has not completed as expected. Reviewing the OEM service information for the specific requirements (ignition cycling sequences, driving parameters, specific bidirectional commands) is the productive step; proceeding to calibration or replacing the camera does not address the incomplete initialization.

29. B — The composite vehicle's forward-facing camera heater activates at approximately 50°F or colder ambient temperature, and also when either the front or rear defrost is activated. This dual-activation logic is a reference-sourced detail that is commonly tested on the exam and directly reflects the reference document.

30. A — Forward cameras have known sensitivity to direct sun glare that temporarily blinds the camera. Eastward morning driving puts the sun directly in the camera's field of view at a low angle, and this can produce transient camera failure that resolves as the sun angle changes. This is a feature limitation, not a hardware fault.

31. D — Radar detection range is primarily a function of the radar's operating frequency band and antenna gain specification. Higher frequencies and larger antennas generally allow longer effective range; the vehicle paint color, bumper cover material (assuming OEM radar-transparency specs), and driver preferences do not affect fundamental radar range capability.

32. C — Intermittent forward radar communication points to a marginal electrical condition — supply voltage drops, ground path resistance, or CAN bus issues that manifest only under certain operating conditions. These are investigated through load testing and connection verification rather than module replacement or software reprogramming.

33. B — The composite vehicle designates the left rear corner radar module as the primary node on the private corner radar CAN bus. It aggregates data from all four corner radars and forwards the fused result to the ADAS Central Module over the public ADAS CAN bus.

34. A — A private CAN bus resistance of 30 ohms (below the expected 60 ohms) indicates a short between CAN-H and CAN-L or an additional unwanted parallel conduction path has been added. Normal CAN bus design uses two 120-ohm terminators in parallel to produce 60 ohms; any reading substantially lower indicates extra conduction.

35. D — A newly-replaced radar that is programmed and coded but still does not respond to target vehicles is awaiting calibration. Static and/or dynamic calibration is the required final step after every radar replacement, and the feature will not function correctly until calibration is completed per OEM specification.

36. C — Every corner radar module replacement requires subsequent OEM-specified calibration before the vehicle is returned. Programming, coding, and initialization establish that the module is functional and recognized; calibration establishes geometric alignment to the vehicle's reference frame, which is a separate and mandatory step.

37. B — AEB triggering on stationary roadside fixtures months after calibration points to calibration drift, physical disturbance of the radar mount (from vibration or minor impact), or contamination in the radar zone. Investigation of these factors is productive before module replacement, customer-blame, or reprogramming.

38. A — Target placement 50 centimeters off the OEM-specified 3-meter distance does not trigger any error detection in most scan tool calibration routines, so the procedure will complete with silently incorrect data. The radar ends up calibrated to a reference point that does not match its actual operating geometry, producing degraded real-world performance.

39. D — False BSW alerts in clear weather on one side of the vehicle, with recent calibrations confirmed correct, point to external interference or physical disturbance in the affected area. Aftermarket accessories, debris, bike racks, or trailer equipment near the corner radar can produce false detections without any scan tool-visible fault.

40. C — Non-OEM bumper covers may not meet the radar transparency specification required for the 77 GHz frequency band. The materials can attenuate signal or introduce distortion, which degrades detection performance even when the radar module itself is functioning correctly. This is why many OEM position statements specify OEM parts in radar zones.

41. B — A radar self-test passing confirms basic module functions but does not verify the calibration state or the downstream pathways that translate radar detections into feature responses. A persistent real-world complaint after a passed self-test means the problem lies in calibration parameters or in the broader ADAS signal chain, not the radar's basic operation.

42. A — A bus returning to normal operation after reconnecting a removed module demonstrates that the module's internal terminator is part of the bus's proper termination. Corner radar modules on the composite vehicle each contain a 120-ohm terminator, and removing one module disturbs the bus resistance until that module is restored.

43. D — Fuel tank level below OEM-specified minimum changes the vehicle's ride height slightly, which changes the angle at which the radar views the world. The scan tool cannot detect fuel level, so the calibration completes with silently incorrect parameters. This is a classic silent miscalibration scenario.

44. C — Professional practice when inheriting a vehicle with potential calibration issues is to investigate the current symptoms, verify preconditions, and offer recalibration if appropriate. Declining the work, blaming the previous shop, or replacing parts without diagnosis are all inappropriate; the customer's safety concerns require professional investigation.

45. B — A calibration performed on an unlevel shop floor is silently miscalibrated despite scan tool success. The floor slope changes the vehicle's pitch, and the radar's view angle is calibrated to this incorrect geometry. The customer experiences degraded ADAS performance that the scan tool cannot detect, and recalibration on a verified level surface is required to resolve the issue.

46. A — Bumper cover replacement at a body shop commonly affects ultrasonic sensors — paint overcoating the transducer faces, sensors installed at incorrect angles, or damage during removal. Physical inspection is the fast, productive first step that often resolves the complaint without any electronic diagnosis or parts replacement.

47. C — A single internally failed ultrasonic sensor with verified supply and ground is replaced individually, and post-replacement verification uses scan tool data review to confirm the new sensor reports plausible echoes. No system-wide intervention is required for a routine single-sensor replacement.

48. B — Scan tool data review reveals which specific sensor or sensors are reporting abnormal echoes that trigger the continuous chime. This targeted investigation identifies the root cause more efficiently than speculative replacement, reprogramming, or calibration — the issue is typically one or two specific sensors, and the scan tool points directly to them.

49. C — The composite vehicle's Ultrasonic Control Module sends aggregated detection data to the ADAS Central Module over the public ADAS CAN bus, not through a dedicated private bus, direct hardwire, or to the EBCM. This is the standard communication pathway for ultrasonic systems on modern ADAS vehicles.

50. A — Intermittent parking assist failures during freezing conditions that resolve in warm shop conditions strongly suggest ice accumulation on the sensor transducer faces. The ice attenuates ultrasonic signal during the cold event and melts when the vehicle is brought inside, producing exactly the intermittent, condition-dependent pattern the customer describes.