

# PRACTICE EXAM 11: ASE L4 SIMULATION (50 QUESTIONS)

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1. Technician A says that a scan tool's "all systems scan" will automatically detect and repair any ADAS module faults during the scan session. Technician B says an "all systems scan" only identifies fault codes and does not perform repairs. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

2. A technician is preparing to diagnose a vehicle with ADAS-related complaints. The most productive first action is:

- A. Replacing the ADAS Central Module as a starting point for diagnosis
- B. Clearing all stored codes before any diagnostic work begins on the vehicle
- C. Reprogramming every ADAS module on the vehicle with current firmware
- D. Performing a pre-repair scan to document the vehicle's starting condition

3. Technician A says that the ADAS Central Module on the composite vehicle receives both constant battery voltage and switched ignition voltage. Technician B says the ADAS Central Module receives power only from the Gateway Module's switched output. Who is correct?

- A. Technician A only
- B. Technician B only

- C. Both technicians are correct
- D. Neither technician is correct

4. Technician A says pre-repair and post-repair scans should be performed on every significant ADAS-related repair. Technician B says these scans help document what the repair accomplished and protect the shop from liability concerns. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

5. Technician A says a CAN bus resistance reading of 120 ohms indicates a healthy bus with both terminators in parallel. Technician B says a healthy CAN bus with both 120-ohm terminators in parallel measures approximately 60 ohms. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

6. Technician A says voltage drop testing is performed with the circuit energized under operating load. Technician B says voltage drop testing uses the same low-current test signal as a continuity test. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

7. Enable criteria for a specific DTC must be satisfied before the diagnostic monitor can run and set the code. These criteria are:

- A. Only the specific voltage range specified without any other factors applying
- B. Only the sustained speed range specified without any other factors applying
- C. Only the engine temperature range specified without any other factors applying
- D. The specific conditions the OEM has defined for that particular monitor

8. Technician A says freeze frame data captured when a DTC is stored includes operating conditions at the moment of the fault. Technician B says freeze frame data helps the technician understand what the vehicle was doing when the code was set. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

9. Technician A says OEM position statements define the standard of care expected during ADAS service work. Technician B says OEM position statements are marketing recommendations without any legal significance. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

10. Technician A says a single blown fuse always indicates that the affected circuit needs to be completely rewired. Technician B says a blown fuse should lead to investigation of what caused the fuse to open before simply replacing it. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

11. Technician A says the Gateway Module directly commands ADAS actuators during intervention events. Technician B says the Gateway Module is responsible for running ADAS algorithms on the vehicle. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

12. Technician A says J2534 pass-through programming requires OEM software subscriptions for each specific brand being programmed. Technician B says J2534 hardware alone, without any OEM software, can program any vehicle brand. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

13. Technician A says a pre-repair scan establishes the vehicle's starting diagnostic condition before work begins. Technician B says pre-repair scan documentation protects the shop from pre-existing issues the customer might later attribute to the current repair. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

14. Technician A says battery voltage of 12.0 volts is sufficient for performing an ADAS calibration procedure. Technician B says battery voltage should be maintained above 12.6 volts throughout the calibration procedure. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

15. Technician A says ADAS features will eliminate all driver responsibility for safe vehicle operation. Technician B says ADAS features guarantee the vehicle will never be involved in any collision. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

16. Technician A says a U-code in the DTC format typically relates to network communication faults. Technician B says a U-code typically relates to engine powertrain faults on the vehicle. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

17. Technician A says a CAN bus resistance measurement of 40 ohms indicates a short between CAN-H and CAN-L or an additional parallel conduction path. Technician B says CAN bus resistance measurements below the healthy 60-ohm value indicate additional parallel resistance on the bus. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

18. Technician A says the composite vehicle's forward-facing camera lens can be cleaned with lens cleaner during routine service. Technician B says the composite vehicle's forward camera lens cannot be cleaned — camera replacement is required when contaminated. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

19. Technician A says a single forward camera failure affects only lane keep assistance and no other features on the vehicle. Technician B says a forward camera failure affects only traffic sign recognition and no other features. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

20. Technician A says windshield replacement on a vehicle with a forward camera typically requires camera calibration per OEM position statements. Technician B says windshield replacement has no effect on forward camera mounting or subsequent operation. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

21. Technician A says surround view camera systems typically use very wide-angle lenses covering approximately 180 degrees or more. Technician B says surround view cameras require their wide-angle coverage to stitch together a seamless composite overhead image. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

22. Technician A says driver monitoring cameras typically use visible-spectrum imaging with dashboard LEDs for nighttime illumination. Technician B says driver monitoring cameras typically use near-infrared imaging with infrared illuminators invisible to the human eye. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

23. Technician A says the composite vehicle's forward camera heater activates only when the vehicle's engine is running. Technician B says the composite vehicle's forward camera heater never activates during any normal operation. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

24. Technician A says lane keep assistance provides active steering input while lane departure warning only alerts the driver. Technician B says lane keep assistance and lane departure warning are identical features with no operational differences. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

25. Technician A says bumper cover replacement involving a surround view camera typically requires subsequent camera calibration. Technician B says exterior mirror replacement on a vehicle with surround view cameras typically requires calibration of the camera in that mirror. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

26. Technician A says traffic sign recognition operates independently of the forward camera's view of the road. Technician B says traffic sign recognition depends on the forward camera's ability to see and interpret roadside signs. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

27. Technician A says a failed camera heater in cold weather can cause intermittent camera fogging or icing, disabling camera-dependent features. Technician B says camera heaters are non-functional components that have no effect on camera operation. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

28. Technician A says reflective sunglass lenses can cause false drowsiness warnings from driver monitoring systems. Technician B says prescription glasses with certain coatings can also interfere with infrared-based driver monitoring imaging. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

29. Technician A says a replacement forward camera, once installed, functions correctly without any programming, coding, or calibration. Technician B says a replacement forward camera requires only calibration and does not need programming or coding. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

30. Technician A says automatic high beam control operates only when the vehicle is stationary. Technician B says automatic high beam control uses the forward camera to detect headlights of oncoming vehicles and taillights of preceding vehicles. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

31. Technician A says automotive radar modules commonly operate in the 76 to 81 GHz band, often called 77 GHz radar. Technician B says automotive radar modules commonly operate in the 2.4 GHz band used by consumer Wi-Fi equipment. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

32. Technician A says the forward radar on the composite vehicle has a maximum detection range of approximately 40 meters. Technician B says the forward radar on the composite vehicle has a maximum detection range of approximately 250 meters. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

33. Technician A says non-OEM bumper covers may not meet the radar transparency specification required for 77 GHz radar operation. Technician B says non-OEM paint in the radar zone can attenuate radar signal and degrade detection performance. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

34. Technician A says the left rear corner radar on the composite vehicle serves as the primary node on the private corner radar CAN bus. Technician B says the ADAS Central Module serves as the primary node on the corner radar private CAN bus. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

35. Technician A says each corner radar module on the composite vehicle contains a 120-ohm terminating resistor. Technician B says the two 120-ohm terminators in parallel produce the expected 60-ohm bus resistance when healthy. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

36. Technician A says silent miscalibration produces an obvious scan tool error message during the calibration procedure. Technician B says silent miscalibration is the scenario where the procedure completes successfully but real-world ADAS performance is degraded. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

37. Technician A says radar calibration is optional when the OEM service information specifies that calibration is required. Technician B says radar calibration is automatic after any module replacement without any technician intervention. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

38. Technician A says a vehicle's ride height has no effect on radar calibration accuracy during the procedure. Technician B says vehicle ride height — affected by loading, fuel level, and tire pressure — directly affects radar calibration accuracy. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

39. Technician A says forward radar calibration requires specific preconditions be verified before beginning the procedure. Technician B says forward radar calibration can proceed regardless of whether preconditions are met, because the scan tool compensates automatically. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

40. Technician A says AEB is always 100% accurate and will never trigger on non-threat objects like roadside fixtures. Technician B says AEB systems in current vehicles never produce false activations under any circumstances. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

41. Technician A says adaptive cruise control requires only the driver monitoring system to function. Technician B says adaptive cruise control's primary sensor for distance measurement is the forward radar module. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

42. Technician A says blind spot warning typically relies on rear corner radar sensing of vehicles in adjacent lanes. Technician B says rear cross-traffic alert typically relies on the same rear corner radars to detect approaching vehicles when backing up. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

43. Technician A says that on the composite vehicle, removing one corner radar module from its private bus causes the bus resistance to read approximately 120 ohms at another accessible point. Technician B says removing a corner radar from the bus has no effect on bus resistance measurements. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

44. Technician A says a corner radar that passes its bidirectional self-test must be working perfectly in every real-world condition. Technician B says a passed self-test replaces the need for any calibration procedure. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

45. Technician A says radar calibration drift cannot be corrected once it has developed on the vehicle. Technician B says radar calibration drift can often be corrected through recalibration on a verified level surface with all preconditions met. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

46. Technician A says ultrasonic sensors operate at frequencies above normal human hearing range, typically 40 to 50 kHz. Technician B says the ultrasonic frequency range allows pulses that do not disturb occupants or pedestrians. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

47. Technician A says ice or snow accumulation on ultrasonic transducer faces attenuates signal and can cause false activations during winter driving. Technician B says ultrasonic sensors are completely unaffected by ice, snow, or any environmental contamination. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

48. Technician A says painting over ultrasonic sensor transducer faces has no effect on sensor operation. Technician B says paint on the transducer face actually improves ultrasonic signal transmission from the sensor. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

49. Technician A says the composite vehicle's Ultrasonic Control Module communicates with the ADAS Central Module through a dedicated private CAN bus only for these two modules. Technician B says the composite vehicle's Ultrasonic Control Module communicates with the ADAS Central Module over the public ADAS CAN bus. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

50. Technician A says a single failed ultrasonic sensor can typically be replaced individually without replacing all other sensors. Technician B says individual ultrasonic sensor replacement should be followed by scan tool verification that the replacement sensor reports plausible values. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both technicians are correct
- D. Neither technician is correct

# PRACTICE EXAM 11: ANSWER KEY AND EXPLANATIONS

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1. B — Technician B only. A scan tool's all-systems scan identifies stored fault codes across all vehicle modules but does not perform repairs. It is a diagnostic reading tool, not a repair tool — the technician must still analyze the codes and perform appropriate diagnostic and repair work based on what the scan reveals.
2. D — Performing a pre-repair scan to document the vehicle's starting condition is the correct first action for any ADAS-related diagnostic work. This establishes the diagnostic baseline, protects the shop from responsibility for pre-existing issues, and guides the subsequent investigation based on documented evidence rather than speculation.
3. A — Technician A only. The composite vehicle's ADAS Central Module receives both constant battery voltage (for standby memory and wake functions) and switched ignition voltage (for active operation). This dual-supply arrangement is standard for ADAS modules, and the Gateway Module does not provide power to the ADAS Central Module.
4. C — Both technicians are correct. Pre-repair and post-repair scans should be performed on every significant ADAS-related repair per OEM position statements, and the scan documentation serves multiple purposes: establishing repair scope, verifying completion, and protecting the shop from liability attributed to pre-existing conditions.
5. B — Technician B only. A healthy CAN bus with both 120-ohm terminators in parallel measures approximately 60 ohms across CAN-H and CAN-L. A reading of 120 ohms instead would indicate that only one terminator is present in the measurement path — typically because a module containing a terminator has been disconnected or a break exists in the bus.
6. A — Technician A only. Voltage drop testing is performed with the circuit energized under operating load, which is what makes it diagnostically sensitive for marginal connections. Continuity testing uses very low current and cannot detect the resistance that only manifests when actual load current is flowing through the circuit.
7. D — Enable criteria are the specific conditions the OEM has defined for a particular diagnostic monitor to run. These conditions vary by code and may involve voltage, speed, temperature, time elapsed, or other parameters in combination. Understanding the full set of enable criteria for a specific code is essential for verifying whether a monitor has actually run.
8. C — Both technicians are correct. Freeze frame data captures operating conditions at the moment a DTC was stored — vehicle speed, RPM, voltage, temperature, and other parameters. This

snapshot helps the technician understand what the vehicle was doing when the code was set, narrowing diagnostic possibilities and guiding the investigation.

9. A — Technician A only. OEM position statements define the standard of care expected during ADAS service work and carry significant legal weight in insurance disputes and litigation. They are not marketing material — deviation from position statements creates genuine liability exposure for the shop.
10. B — Technician B only. A blown fuse indicates excessive current flow, which is typically caused by a short or overload somewhere in the protected circuit. Investigation of the cause is required before replacement — simply replacing the fuse without addressing the underlying cause will result in repeated fuse failures or, worse, circuit damage.
11. D — Neither technician is correct. The Gateway Module routes messages between the vehicle's internal CAN networks and the OBD-II connector; it does not directly command ADAS actuators or run ADAS algorithms. Those functions belong to the ADAS Central Module and output modules, not the Gateway.
12. A — Technician A only. J2534 pass-through programming requires both J2534-compliant hardware and an OEM software subscription for each brand being programmed. The hardware is brand-independent, but the software comes from each OEM's service portal — the hardware alone cannot program any vehicle without the corresponding brand-specific software.
13. C — Both technicians are correct. A pre-repair scan establishes the vehicle's starting diagnostic condition and creates documentation that protects the shop from liability for pre-existing issues. Both purposes are fundamental to professional ADAS service practice, and the scan serves both functions simultaneously.
14. B — Technician B only. ADAS calibration requires battery voltage above 12.6 volts throughout the procedure to prevent voltage-drop-induced calibration errors or silent miscalibration. A reading of 12.0 volts is below this minimum and would likely produce either calibration failure or silently incorrect parameters — a battery support unit is required.
15. D — Neither technician is correct. ADAS features assist the driver but do not eliminate driver responsibility for safe vehicle operation, and no ADAS system guarantees the vehicle will avoid collisions. Both statements overstate what current ADAS technology provides, and customer communication should clearly set realistic expectations.
16. A — Technician A only. U-codes in the OBD-II DTC format relate to network communication and data bus faults, not powertrain issues. Powertrain faults are P-codes, body faults are B-codes, and chassis faults are C-codes. U-codes dominate network troubleshooting, particularly loss-of-communication codes between modules.
17. C — Both technicians are correct. A CAN bus resistance of 40 ohms (below the healthy 60 ohms) indicates a short between CAN-H and CAN-L or an additional parallel conduction path. The

underlying principle is that bus resistance below the parallel-terminator expected value indicates extra conduction — both statements describe the same condition.

18. B — Technician B only. The composite vehicle's forward-facing camera lens cannot be cleaned per the reference document; contamination requires camera replacement. Cleaning attempts damage the optical coating and create worse problems than the original contamination. This is a reference-sourced detail that is commonly tested.
19. D — Neither technician is correct. A forward camera failure affects all camera-dependent features simultaneously — lane keep assistance, lane departure warning, traffic sign recognition, and automatic high beam all share the camera as their common input. A partial failure pattern isolated to one feature would not result from the camera itself failing.
20. A — Technician A only. Windshield replacement on ADAS-equipped vehicles with forward cameras requires calibration per virtually every major OEM's position statement. The camera bracket is bonded to the windshield, so glass service inevitably disturbs the camera's mounting position and requires subsequent calibration to restore correct operation.
21. C — Both technicians are correct. Surround view cameras use very wide-angle lenses (approximately 180 degrees or more) to capture everything immediately around their mounting location. This wide coverage is required so the Surround View Module can stitch four overlapping views into a seamless composite overhead image during low-speed maneuvering.
22. B — Technician B only. Driver monitoring cameras use near-infrared imaging paired with infrared LED illuminators invisible to the human eye. This approach allows the camera to observe the driver's face in darkness without producing visible glare that would distract the driver — visible-spectrum imaging with dashboard LEDs would create exactly that distraction.
23. D — Neither technician is correct. The composite vehicle's forward camera heater activates at approximately 50°F or colder ambient temperature, or when the front or rear defrost is activated — regardless of engine operation. It does activate during normal operation when these conditions are met, so both statements misrepresent the heater's actual behavior.
24. A — Technician A only. Lane keep assistance provides active steering input through the Electronic Power Steering Module, while lane departure warning only issues audible and visual alerts to the driver. The two features are distinct — LDW warns, LKA actively intervenes — and they can fail independently of each other in real-world operation.
25. C — Both technicians are correct. Surround view cameras are mounted in bumper covers and exterior mirrors, so replacement of either location disturbs the camera's mounting position and requires subsequent calibration. The Surround View Module's seamless stitching depends on accurate camera calibration from each of the four camera positions.
26. B — Technician B only. Traffic sign recognition depends entirely on the forward camera's ability to see and interpret roadside signs. Without a clear camera view of the road ahead, the system

cannot detect, read, or respond to signs. TSR and forward camera operation are directly linked and not independent systems.

27. A — Technician A only. A failed camera heater in cold weather can cause camera fogging or icing that disables camera-dependent features until conditions warm. Camera heaters are functional components that serve a specific purpose — maintaining clear lens visibility in cold weather — and their failure has observable operational consequences.
28. C — Both technicians are correct. Reflective sunglass lenses and prescription glasses with anti-reflective or certain other coatings can both interfere with the infrared imaging that driver monitoring systems use. Both scenarios produce false warnings because the imaging system cannot cleanly observe the driver's eyes through the interfering eyewear.
29. D — Neither technician is correct. A replacement forward camera typically requires programming (loading software), coding (configuring for the specific vehicle), initialization (OEM-specified setup routines), and calibration (establishing geometric reference). Skipping any of these steps leaves the module incomplete, and neither statement reflects the correct full sequence.
30. B — Technician B only. Automatic high beam control uses the forward camera to detect headlights of oncoming vehicles and taillights of preceding vehicles, then decides whether to switch between high and low beams. The feature operates while driving (not stationary) and requires the camera's real-time forward view to function correctly.
31. A — Technician A only. Automotive radar modules commonly operate in the 76 to 81 GHz band, often called 77 GHz radar. This frequency range provides the resolution, antenna size, and range capabilities required for ADAS applications. The 2.4 GHz band is used for Wi-Fi and does not serve automotive radar purposes.
32. D — Neither technician is correct. The composite vehicle's forward radar has a maximum detection range of approximately 160 meters. Neither 40 meters (too short, typical of parking radar) nor 250 meters (longer than the composite vehicle specifies) matches the reference value that is specific to this architecture.
33. C — Both technicians are correct. Non-OEM bumper covers may not meet the radar transparency specification for the 77 GHz band, and non-OEM paint in the radar zone can attenuate signal and degrade detection performance. Both cover material and paint composition affect radar operation, and OEM position statements typically require OEM parts in radar zones.
34. A — Technician A only. 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 the four corner radars and forwards the fused result to the ADAS Central Module over the public ADAS CAN bus — the ADAS Central Module is not the private bus's primary node.
35. C — Both technicians are correct. Each corner radar module on the composite vehicle contains a 120-ohm terminating resistor, and when two are active in parallel across the bus, they produce the

standard 60-ohm resistance reading. Both facts describe the same architectural design and are essential for diagnosing bus resistance readings.

36. B — Technician B only. Silent miscalibration is the scenario where the calibration procedure completes successfully on the scan tool but real-world ADAS performance is degraded. The scan tool cannot detect the unmet precondition that produced the incorrect parameters, so no error message appears — the miscalibration is "silent" to the tool but evident during actual driving.
37. D — Neither technician is correct. When OEM service information requires calibration, it is a mandatory step that must be performed manually by the technician per OEM procedure. Calibration is not optional after a required trigger event, and it is never automatic — it requires specific scan tool procedures, target placement, and precondition verification.
38. B — Technician B only. Vehicle ride height directly affects radar calibration accuracy because the radar's aim angle depends on the vehicle's pitch relative to the ground. Loading, fuel level, and tire pressure all influence ride height, and unverified ride height is one of the most common sources of silent miscalibration.
39. A — Technician A only. Forward radar calibration requires specific preconditions (battery voltage, tire pressure, vehicle loading, floor slope, fuel level, target placement) to be verified before the procedure begins. The scan tool does not detect or compensate for most precondition violations — they must be verified and corrected by the technician.
40. D — Neither technician is correct. AEB systems are not 100% accurate and do produce occasional false activations on non-threat objects like overhead signs, guardrails, or roadside fixtures. These false activations are documented limitations of current radar-based AEB technology, and customer communication should acknowledge this reality rather than oversell system reliability.
41. B — Technician B only. Adaptive cruise control's primary sensor for distance measurement is the forward radar module. The driver monitoring system does not provide distance data and is not required for ACC to function — ACC relies on the forward radar for target range and closing-rate information during highway operation.
42. C — Both technicians are correct. Blind spot warning relies on rear corner radar sensing of vehicles in adjacent lanes, and rear cross-traffic alert uses the same rear corner radars to detect approaching cross-traffic during backing maneuvers. Both features share the corner radar hardware and its private communication bus on the composite vehicle.
43. A — Technician A only. Removing a corner radar module from the private bus removes its internal 120-ohm terminator, leaving only one terminator on the bus. Resistance measurement at another accessible point then reads approximately 120 ohms instead of the healthy 60 ohms. This is a standard diagnostic pattern, not a null-effect scenario.
44. D — Neither technician is correct. A passed bidirectional self-test confirms basic module-internal function but does not verify real-world operation under all conditions, and it does not replace the

need for calibration. Calibration establishes the module's geometric reference to the vehicle, which is a separate step that self-test cannot perform or confirm.

45. B — Technician B only. Radar calibration drift can often be corrected through recalibration on a verified level surface with all preconditions met. Drift typically develops from subtle mounting disturbances or environmental factors, and recalibration restores the correct geometric reference. Drift is not a permanent condition requiring module replacement.
46. C — Both technicians are correct. Ultrasonic sensors operate at frequencies above normal human hearing range (typically 40 to 50 kHz), and this ultrasonic frequency range allows pulses that do not disturb occupants or pedestrians. Both facts together describe the key design characteristics that make ultrasonic sensors practical for parking assist applications.
47. A — Technician A only. Ice or snow accumulation on ultrasonic transducer faces attenuates signal and can cause false activations during winter driving. The contamination blocks or distorts the ultrasonic energy the transducer must transmit and receive, and this is a well-documented environmental interaction — ultrasonic sensors are not immune to environmental contamination.
48. D — Neither technician is correct. Paint on ultrasonic sensor transducer faces attenuates the signal and degrades or disables sensor operation — it has a significant negative effect, and it never improves signal transmission. OEM procedures require sensor removal before painting specifically because of this known degradation.
49. B — Technician B only. The composite vehicle's Ultrasonic Control Module communicates with the ADAS Central Module over the public ADAS CAN bus, not through a dedicated private bus. The public bus carries communication from multiple ADAS modules including ultrasonic data, and a private bus between just these two modules is not part of the architecture.
50. C — Both technicians are correct. A single failed ultrasonic sensor can typically be replaced individually without replacing other sensors, and the replacement should be followed by scan tool verification that the new sensor reports plausible values. Both statements describe correct professional practice for routine ultrasonic sensor replacement.