PRACTICE EXAM 3: A4 SIMULATION — SUSPENSION AND STEERING

1. A vehicle equipped with electric power steering has been brought in with a complaint of complete loss of power steering assist. Scan tool data shows the EPS module is not communicating on the CAN bus. The MOST likely cause is:

A. A worn power steering pulley

B. CAN bus communication fault, failed EPS module, or open circuit in the EPS module power or ground

C. Air in the clutch hydraulic system

D. A worn input shaft bearing

2. The proper procedure for diagnosing an EPS CAN bus communication fault is to:

A. Replace the EPS module as the most direct repair

B. Replace the steering rack as a precaution

C. Apply compressed air to the wiring

D. Use a scan tool to verify CAN bus communication, check for network DTCs, inspect bus wiring, and verify module power and ground

3. A vehicle equipped with EPS has been brought in with a complaint of intermittent loss of power assist. Scan tool data shows the assist intermittently dropping out during operation. The MOST likely cause is:

A. A failed power steering pump

B. A worn power steering pulley

C. An intermittent electrical fault in the EPS motor circuit, marginal connection at the EPS module, or intermittent torque sensor signal

D. Air in the clutch hydraulic system

4. The proper purpose of an EPS steering angle sensor is to:

A. Generate hydraulic pressure for the steering system

B. Drive the steering pump during operation

C. Filter contaminants from the steering fluid

D. Measure the position and rate of steering wheel rotation, providing input for stability control and lane-keeping systems

5. A vehicle equipped with EPS has been brought in with a complaint that the steering wheel feels notchy or sticks at certain positions. Scan tool data is normal. The MOST likely cause is:

A. A worn or damaged EPS motor, worn motor brushes, or worn steering rack components

B. A failed power steering pump

C. A worn power steering pulley

D. Air in the clutch hydraulic system

6. The proper procedure for verifying EPS motor operation is to:

A. Apply 12 volts directly to the motor

B. Replace the motor as a precaution

C. Visually inspect for visible damage only

D. Measure motor resistance, verify the EPS module commands, observe motor operation under varied conditions, and verify proper assist response

7. A vehicle equipped with EPS has been brought in for steering angle sensor calibration after a steering rack replacement. The proper procedure for steering angle sensor calibration is to:

A. Apply compressed air to the sensor

B. Center the steering wheel mechanically, perform the manufacturer-specified calibration procedure with a scan tool, and verify the calibration through scan tool data

C. Replace the sensor as a precaution

D. Visually estimate the centering

8. A vehicle equipped with lane-keeping assist has been brought in with a complaint that the lane-keeping system is providing erratic steering input. The MOST likely cause is:

A. A worn power steering pulley

B. A failed power steering pump

C. A failed lane camera, dirty camera lens, miscalibrated camera, or fault in the lane-keeping module

D. Air in the clutch hydraulic system

9. The proper procedure for verifying lane camera calibration is to:

A. Park on a level surface, perform the manufacturer-specified camera calibration procedure with the proper targets, and verify proper operation through a road test

B. Apply compressed air to the camera

C. Replace the camera as a precaution

D. Visually estimate the alignment

10. A vehicle equipped with EPS exhibits a complaint of steering wander at highway speeds. Alignment is within specification and components are in good condition. The MOST likely cause is:

A. A failed power steering pump

B. A worn power steering pulley

C. Air in the clutch hydraulic system

D. A miscalibrated steering angle sensor, fault in the EPS module's center position learn, or marginal torque sensor signal

11. The proper procedure for diagnosing EPS-related steering wander is to:

A. Replace the EPS module as the most direct repair

B. Replace the steering rack as a precaution

C. Verify alignment, inspect components, retrieve EPS DTCs, monitor scan data, and verify steering angle sensor calibration

D. Replace the transmission fluid as the only step

12. A vehicle equipped with EPS has been brought in with a complaint that the steering effort feels too light at highway speeds. Scan tool data is normal. The MOST likely cause is:

A. A worn power steering pulley

B. A vehicle speed sensor signal fault, miscalibrated steering effort tuning, or EPS module software issue

C. A failed power steering pump

D. Air in the clutch hydraulic system

13. The proper purpose of speed-sensitive EPS assist is to:

A. Generate hydraulic pressure for the steering system

B. Drive the steering pump during operation

C. Filter contaminants from the steering fluid

D. Provide more assist at low speeds for parking and less assist at high speeds for stability and feedback

14. A vehicle equipped with EPS has been brought in with the following findings: complaint of EPS warning light illuminated, stored DTC for torque sensor circuit, and scan tool data showing erratic torque sensor signal. The MOST likely cause is:

A. A failed torque sensor or open circuit in the torque sensor wiring, producing erratic signal

B. A worn power steering pulley

C. Air in the clutch hydraulic system

D. A failed power steering pump

15. The proper procedure for verifying EPS torque sensor signal is to:

A. Apply 12 volts directly to the sensor

B. Replace the sensor as a precaution

C. Monitor scan tool data for torque sensor signal during steering input, verify signal range and response, and compare to specification

D. Visually inspect for visible damage only

16. A vehicle equipped with EPS has been brought in with a complaint of pull during straight-line driving. Alignment is within specification. The MOST likely cause is:

A. A worn power steering pulley

B. A miscalibrated steering angle sensor, EPS module compensation fault, or unequal torque sensor reading

C. A failed power steering pump

D. Air in the clutch hydraulic system

17. The proper procedure for diagnosing EPS-related pull is to:

A. Verify alignment is within specification, retrieve EPS DTCs, monitor scan data for steering angle and torque sensor values, and verify proper EPS calibration

B. Replace the EPS module as the most direct repair

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

18. A vehicle equipped with active steering (variable steering ratio) has been brought in with a complaint that the steering ratio feels inconsistent during operation. The MOST likely cause is:

A. A worn power steering pulley

B. A failed power steering pump

C. Air in the clutch hydraulic system

D. A failed active steering actuator, worn active steering components, or fault in the active steering control module

19. The proper purpose of active steering (variable steering ratio) is to:

A. Generate hydraulic pressure for the steering system

B. Drive the steering pump during operation

C. Vary the steering ratio based on vehicle speed, providing quicker response at low speeds and more stability at high speeds

D. Filter contaminants from the steering fluid

20. A vehicle equipped with EPS has been brought in with the following findings: complaint of harsh or grinding feel during steering input, stored DTC for EPS motor position sensor, and scan tool data showing motor position discontinuity. The MOST likely cause is:

A. A worn power steering pulley

B. A failed motor position sensor or worn motor that produces position errors detectable by the EPS module

C. A failed power steering pump

D. Air in the clutch hydraulic system

21. The proper procedure for verifying EPS motor position sensor operation is to:

A. Apply 12 volts directly to the sensor

B. Replace the sensor as a precaution

C. Visually inspect for visible damage only

D. Monitor scan tool data for motor position during steering input, verify signal continuity and proper response, and compare to specification

22. A vehicle equipped with EPS has been brought in for steering rack replacement. After installation, the customer reports that the EPS warning light is illuminated. The MOST likely cause is:

A. The EPS module requires recalibration after the rack replacement, or the steering angle sensor has not been zeroed

B. A worn power steering pulley

C. A failed power steering pump

D. Air in the clutch hydraulic system

23. The proper procedure for completing an EPS rack replacement is to:

A. Apply compressed air to the rack

B. Install the rack, perform the manufacturer-specified EPS calibration procedure, clear stored DTCs, and verify proper operation through a road test

C. Replace the EPS module as a precaution

D. Replace the transmission fluid as the only step

24. A vehicle equipped with EPS has been brought in with a complaint of complete loss of EPS assist. The EPS warning light is illuminated. The technician finds that the EPS module is receiving battery voltage and proper ground. The MOST likely cause is:

A. A worn power steering pulley

B. Air in the clutch hydraulic system

C. A failed power steering pump

D. A failed EPS motor, open circuit in the EPS motor wiring, or internal failure of the EPS module

25. The proper procedure for diagnosing complete EPS assist loss is to:

A. Replace the EPS module as the most direct repair

B. Replace the steering rack as a precaution

C. Verify EPS module power and ground, retrieve stored DTCs, measure motor resistance, verify torque sensor signal, and verify proper assist commands

D. Replace the transmission fluid as the only step

26. A vehicle equipped with EPS has been brought in for an alignment complaint. After alignment service, the customer reports that the steering wheel is off-center despite the alignment being within specification. The MOST likely cause is:

A. The steering angle sensor was not recalibrated after the alignment, requiring the manufacturer-specified recalibration procedure

B. A worn power steering pulley

C. A failed power steering pump

D. Air in the clutch hydraulic system

27. The proper procedure for verifying steering angle sensor calibration after alignment is to:

A. Apply compressed air to the sensor

B. Replace the sensor as a precaution

C. Center the steering wheel, perform the manufacturer-specified calibration procedure, verify the calibration through scan tool data, and confirm proper operation

D. Visually estimate the centering

28. A vehicle has been brought in with a complaint of vibration in the steering wheel during operation. The technician finds that all alignment angles are within specification, components are in good condition, and tires are properly balanced. The MOST likely cause is:

A. A worn power steering pulley

B. A defective tire (out-of-round, separated tread, or internal damage), wheel runout exceeding specification, or a defective wheel

C. A failed power steering pump

D. Air in the clutch hydraulic system

29. The proper procedure for verifying wheel runout is to:

A. Apply compressed air to the wheel

B. Replace the wheel as a precaution

C. Visually inspect for visible damage only

D. Mount a dial indicator on the wheel, rotate the wheel through one full revolution, and read the maximum runout against the manufacturer's specification

30. A vehicle equipped with all-wheel-drive has been brought in with a complaint of pull during operation. Alignment is within specification, tires are equal in tread depth, and components are in good condition. The MOST likely cause is:

A. An AWD-related issue including unequal tire diameter beyond AWD tolerance, AWD coupling fault, or AWD-related drivetrain bind

B. A failed power steering pump

C. A worn power steering pulley

D. Air in the clutch hydraulic system

31. The proper procedure for diagnosing AWD-related pull is to:

A. Replace the AWD coupling as the most direct repair

B. Replace the steering rack as a precaution

C. Replace the transmission fluid as the only step

D. Verify all four tires have equal diameter within AWD tolerance, retrieve any AWD DTCs, monitor AWD operation through scan data, and verify proper AWD function

32. A vehicle has been brought in with a complaint of clunking noise from the steering during steering input. The vehicle is equipped with a steering coupling between the steering column and the steering gear. The MOST likely cause is:

A. A failed power steering pump

B. A worn or damaged steering coupling, intermediate shaft U-joint, or steering shaft bushing

C. A worn power steering pulley

D. Air in the clutch hydraulic system

33. The proper procedure for inspecting a steering coupling is to:

A. Apply compressed air to the coupling

B. Replace the coupling as a precaution

C. Manipulate the steering column with the engine off and steering wheel stationary, observe for any visible play or noise in the coupling, and compare to specification

D. Visually inspect for visible damage only

34. A vehicle has been brought in for a four-wheel alignment. The technician finds that the rear thrust angle is significantly out of specification, but the rear suspension components show no visible wear. The MOST likely cause is:

A. Frame or unibody damage, improper rear suspension installation, or a previous rear-end collision repair affecting the rear axle position

B. A worn power steering pulley

C. A failed power steering pump

D. Air in the clutch hydraulic system

35. The proper procedure for diagnosing thrust angle errors not attributable to suspension wear is to:

A. Apply compressed air to the suspension

B. Replace the rear suspension as a precaution

C. Inspect the frame or unibody for damage, verify proper installation of all rear suspension components, and consider previous collision repair history

D. Replace the transmission fluid as the only step

36. A vehicle has been brought in with a complaint of steering wheel pull to the left during straight-line driving. The technician swaps the front tires from side to side. After the swap, the pull changes direction (now pulls to the right). The MOST likely cause is:

A. A failed power steering pump

B. A defective tire (radial pull) on what was originally the right side, now on the left

C. A worn power steering pulley

D. Air in the clutch hydraulic system

37. The proper procedure for diagnosing a tire-related pull is to:

A. Swap the front tires from side to side, road test, and observe whether the pull direction changes

B. Replace the tires as a precaution

C. Replace the steering rack as a precaution

D. Replace the transmission fluid as the only step

38. A vehicle equipped with EPS has been brought in for a battery replacement. After the battery replacement, the customer reports that the EPS warning light is illuminated. The MOST likely cause is:

A. A worn power steering pulley

B. A failed power steering pump

C. The EPS module has lost its calibration data with the battery disconnect, requiring relearn or recalibration per the manufacturer's procedure

D. Air in the clutch hydraulic system

39. The proper procedure for completing an EPS service after battery replacement is to:

A. Apply compressed air to the EPS module

B. Verify any required relearn or calibration procedures per the manufacturer's specification, perform the procedures, clear stored DTCs, and verify proper EPS operation

C. Replace the EPS module as a precaution

D. Replace the transmission fluid as the only step

40. A vehicle equipped with EPS has been brought in with a complaint that the EPS warning light is intermittently illuminated. The MOST likely cause is:

A. An intermittent fault in the EPS system: intermittent torque sensor signal, intermittent CAN bus communication, or marginal connection at the EPS module

B. A worn power steering pulley

C. A failed power steering pump

D. Air in the clutch hydraulic system

PRACTICE EXAM 3: A4 SIMULATION — ANSWER KEY, EXPLANATIONS, AND TASK REMEDIATION

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1. B — CAN bus communication fault, failed EPS module, or open circuit in the EPS module power or ground. With the EPS module not communicating on the CAN bus, the issue is in the module's communication or power circuit. CAN bus fault, failed module, or power/ground issues prevent proper communication. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

2. D — Use a scan tool to verify CAN bus communication, check for network DTCs, inspect bus wiring, and verify module power and ground. EPS CAN bus diagnosis requires comprehensive systematic approach. Each step provides different diagnostic information about the communication network. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

3. C — An intermittent electrical fault in the EPS motor circuit, marginal connection at the EPS module, or intermittent torque sensor signal. Intermittent EPS dropouts indicate intermittent issues in the assist circuit. Each cause produces transient symptoms that match the customer complaint. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

4. D — Measure the position and rate of steering wheel rotation, providing input for stability control and lane-keeping systems. The steering angle sensor measures both position and rotation rate. This data is used by stability control, lane-keeping, and other systems that require knowledge of steering input. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

5. A — A worn or damaged EPS motor, worn motor brushes, or worn steering rack components. Notchy or sticky steering with normal scan data indicates mechanical issues in the EPS motor or rack. Worn motor components or rack components produce the notchy feel during operation. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

6. D — Measure motor resistance, verify the EPS module commands, observe motor operation under varied conditions, and verify proper assist response. EPS motor verification requires multiple checks: resistance, command verification, operational observation, and assist verification. Each

step isolates different aspects of motor operation. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

7. B — Center the steering wheel mechanically, perform the manufacturer-specified calibration procedure with a scan tool, and verify the calibration through scan tool data. Steering angle sensor calibration requires mechanical wheel centering, scan tool calibration procedure, and verification. Without proper calibration, the sensor reports incorrect angle data. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

8. C — A failed lane camera, dirty camera lens, miscalibrated camera, or fault in the lane-keeping module. Erratic lane-keeping input indicates the system cannot reliably detect lane markings. Camera failure, contamination, miscalibration, or module fault all produce erratic operation. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

9. A — Park on a level surface, perform the manufacturer-specified camera calibration procedure with the proper targets, and verify proper operation through a road test. Lane camera calibration requires precise positioning, proper calibration procedure with manufacturer targets, and verification. Each step is critical for proper lane detection. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

10. D — A miscalibrated steering angle sensor, fault in the EPS module's center position learn, or marginal torque sensor signal. EPS-related wander with normal alignment and components indicates the EPS system is not correctly identifying center position or torque input. The result is wander as the system continuously self-corrects. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

11. C — Verify alignment, inspect components, retrieve EPS DTCs, monitor scan data, and verify steering angle sensor calibration. EPS-related wander diagnosis requires comprehensive approach including alignment, components, DTCs, scan data, and calibration verification. Each step addresses different potential causes. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

12. B — A vehicle speed sensor signal fault, miscalibrated steering effort tuning, or EPS module software issue. Light steering at high speeds indicates the EPS is providing too much assist at speed. The vehicle speed signal, effort calibration, or module software each affect speed-sensitive assist scaling. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

13. D — Provide more assist at low speeds for parking and less assist at high speeds for stability and feedback. Speed-sensitive EPS provides variable assist matched to driving conditions. Low-speed assist enables easy parking; reduced high-speed assist provides stability and proper steering feel. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

14. A — A failed torque sensor or open circuit in the torque sensor wiring, producing erratic signal. Erratic torque sensor signal with corresponding DTC and warning light is the diagnostic signature of torque sensor failure or wiring open. The EPS module cannot determine driver input correctly. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

15. C — Monitor scan tool data for torque sensor signal during steering input, verify signal range and response, and compare to specification. Torque sensor verification requires scan tool monitoring during steering input. The signal must respond properly across the torque range and match specification. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

16. B — A miscalibrated steering angle sensor, EPS module compensation fault, or unequal torque sensor reading. EPS-related pull with normal alignment indicates the EPS system is producing unequal assist between left and right turns. Sensor calibration, module compensation, or torque sensor issues each produce this pattern. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

17. A — Verify alignment is within specification, retrieve EPS DTCs, monitor scan data for steering angle and torque sensor values, and verify proper EPS calibration. EPS-related pull diagnosis requires alignment verification, DTC retrieval, scan data monitoring, and calibration verification. Each step addresses different potential causes. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

18. D — A failed active steering actuator, worn active steering components, or fault in the active steering control module. Inconsistent active steering ratio indicates the system cannot maintain proper ratio control. Actuator, component, or module failures produce inconsistent operation. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

19. C — Vary the steering ratio based on vehicle speed, providing quicker response at low speeds and more stability at high speeds. Active steering varies the steering ratio based on speed. Quick ratio at low speed enables maneuverability; slower ratio at high speed provides stability. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

20. B — A failed motor position sensor or worn motor that produces position errors detectable by the EPS module. Motor position discontinuity is the diagnostic signature of position sensor or motor failure. The EPS module monitors position and detects errors that produce harsh or grinding feel. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

21. D — Monitor scan tool data for motor position during steering input, verify signal continuity and proper response, and compare to specification. Motor position sensor verification requires scan tool monitoring during steering input. Signal continuity and proper response indicate sensor health.

ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.

22. A — The EPS module requires recalibration after the rack replacement, or the steering angle sensor has not been zeroed. Steering rack replacement requires EPS recalibration to learn the new rack's center position. Without recalibration, the EPS warning light illuminates. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

23. B — Install the rack, perform the manufacturer-specified EPS calibration procedure, clear stored DTCs, and verify proper operation through a road test. EPS rack replacement procedure requires installation, calibration per specification, DTC clearing, and road test verification. Each step is required for proper post-service operation. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

24. D — A failed EPS motor, open circuit in the EPS motor wiring, or internal failure of the EPS module. With normal power and ground but complete assist loss, the issue is in the assist-generating chain. Failed motor, motor wiring open, or module internal failure prevent assist generation. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

25. C — Verify EPS module power and ground, retrieve stored DTCs, measure motor resistance, verify torque sensor signal, and verify proper assist commands. Complete EPS assist loss diagnosis requires comprehensive systematic approach. Each step isolates a different potential cause in the assist chain. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

26. A — The steering angle sensor was not recalibrated after the alignment, requiring the manufacturer-specified recalibration procedure. Post-alignment off-center steering with proper alignment indicates the steering angle sensor needs recalibration. The sensor reports an offset position to the EPS module without recalibration. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

27. C — Center the steering wheel, perform the manufacturer-specified calibration procedure, verify the calibration through scan tool data, and confirm proper operation. Steering angle sensor calibration verification requires wheel centering, calibration procedure, scan tool verification, and operational confirmation. Each step ensures proper calibration. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

28. B — A defective tire (out-of-round, separated tread, or internal damage), wheel runout exceeding specification, or a defective wheel. Vibration with normal alignment, balance, and components localizes the cause to tire or wheel defects. Each defect type produces vibration that other diagnostic methods do not detect. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

29. D — Mount a dial indicator on the wheel, rotate the wheel through one full revolution, and read the maximum runout against the manufacturer's specification. Wheel runout verification requires dial indicator measurement during full rotation. The maximum reading must be within specification for the wheel to be serviceable. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

30. A — An AWD-related issue including unequal tire diameter beyond AWD tolerance, AWD coupling fault, or AWD-related drivetrain bind. AWD-related pull with normal alignment, equal tread depth, and good components indicates AWD-specific issues. Tire diameter mismatch, coupling fault, or drivetrain bind each affect AWD operation. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

31. D — Verify all four tires have equal diameter within AWD tolerance, retrieve any AWD DTCs, monitor AWD operation through scan data, and verify proper AWD function. AWD-related pull diagnosis requires AWD-specific verification. Tire diameter, DTCs, scan data, and AWD function together identify the specific AWD issue. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

32. B — A worn or damaged steering coupling, intermediate shaft U-joint, or steering shaft bushing. Steering clunk during steering input is the diagnostic signature of slack in the steering shaft components. Coupling wear, U-joint wear, or bushing wear each allow movement during steering input. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

33. C — Manipulate the steering column with the engine off and steering wheel stationary, observe for any visible play or noise in the coupling, and compare to specification. Steering coupling inspection requires manipulation with the wheel stationary, observation of any play, and comparison to specification. The coupling must transmit motion without play. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

34. A — Frame or unibody damage, improper rear suspension installation, or a previous rear-end collision repair affecting the rear axle position. Thrust angle errors without component wear indicate structural or installation issues. Frame damage, improper installation, or collision repair history are the most likely causes. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

35. C — Inspect the frame or unibody for damage, verify proper installation of all rear suspension components, and consider previous collision repair history. Thrust angle errors not attributable to wear require structural inspection. Frame, installation, and history evaluation together identify the underlying cause. *ASE Task Reference: A4 Domain C — Wheel Alignment Diagnosis. Review subsection 4.3.*

36. B — A defective tire (radial pull) on what was originally the right side, now on the left. When swapping front tires changes pull direction, the cause is a defective tire that produces radial pull.

The pull follows the tire to whichever side it is mounted on. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

37. A — Swap the front tires from side to side, road test, and observe whether the pull direction changes. Tire-related pull diagnosis uses the swap test. If the pull changes direction with the swap, the tire is the cause; if the pull stays the same, the cause is elsewhere. *ASE Task Reference: A4 Domain D — Wheel and Tire Diagnosis. Review subsection 4.4.*

38. C — The EPS module has lost its calibration data with the battery disconnect, requiring relearn or recalibration per the manufacturer's procedure. Battery disconnect can cause EPS modules to lose calibration data. The manufacturer-specified relearn or recalibration procedure restores proper operation. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

39. B — Verify any required relearn or calibration procedures per the manufacturer's specification, perform the procedures, clear stored DTCs, and verify proper EPS operation. Post-battery EPS service requires verification of required procedures, completion of those procedures, DTC clearing, and operational verification. Each step is required for proper EPS operation. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*

40. A — An intermittent fault in the EPS system: intermittent torque sensor signal, intermittent CAN bus communication, or marginal connection at the EPS module. Intermittent EPS warning indicates intermittent system faults. Torque sensor, CAN bus, or connection issues each produce intermittent symptoms that defy single-point diagnosis. *ASE Task Reference: A4 Domain A — Steering Systems Diagnosis and Repair. Review subsection 4.1.*