PRACTICE EXAM 25: ASE A4 SIMULATION (40 QUESTIONS)

STEERING SYSTEMS DIAGNOSIS AND REPAIR (Questions 1–12)

1. A clockspring must be installed on a vehicle. The technician should:

A. Mechanically center the clockspring per the manufacturer procedure with road wheels pointing straight ahead

B. Install the clockspring with the steering wheel first before performing the centering procedure during service

C. Connect the battery before centering the clockspring to verify electrical function during the installation procedure

D. Rotate the clockspring to its full clockwise stop before installing the steering wheel on the splined shaft

2. Technician A says SRS service begins with disconnecting the negative battery cable. Technician B says the capacitor discharge time must be waited before airbag removal. Who is correct?

A. Technician A only

B. Technician B only

C. Both Technicians A and B

D. Neither Technician A nor B

3. A power steering pump whining complaint with fluid at minimum level is MOST commonly caused by:

A. Worn internal pump components requiring complete pump replacement during this service visit today

B. Low fluid allowing air ingestion — top off fluid and perform complete bleeding procedure after adding fluid

C. A failed relief valve in the pump requiring replacement of the valve assembly during the service today

D. Contaminated fluid affecting pump performance — requires complete fluid flush during the service visit today

4. A hydraulic power steering rack has internal bypass. This is indicated by:

A. High fluid pressure at the pump outlet during static testing of the system during the service today

B. Low fluid level in the reservoir requiring top-off to specification during the service visit today

C. External fluid leakage visible at the rack and pinion during the inspection service today

D. The pump reaches relief pressure but the rack cannot reach the same pressure at full lock during test

5. A DTC for "EPS supply voltage low" with battery testing good at rest typically requires:

A. Voltage drop testing on the EPS power and ground circuits under maximum load during the service procedure

B. Replacement of the EPS control module because the voltage loss damaged internal components during operation

C. Replacement of the battery because a good resting voltage does not indicate adequate CCA for operation

D. Disconnecting the battery for 30 minutes to reset the EPS module memory during the service procedure today

6. A recirculating ball gearbox's sector shaft over-center preload is measured with:

A. The pitman arm installed and torqued to specification during the preload measurement procedure during service

B. The pitman arm removed and the steering wheel at the center position of travel during the measurement

C. The steering wheel at full lock with the pitman arm installed during the preload measurement procedure today

D. The gearbox disassembled from the vehicle on a workbench during the over-center preload measurement

7. A steering damper with active external leakage and oil drips requires:

A. Cleaning the damper body and monitoring at the next service interval during the service visit today

B. Replacement of only the damper seal to restore sealing without complete damper replacement during service

C. Replacement of the damper — active leakage indicates seal failure beyond acceptable service tolerance

D. The damper is operating within normal specification — slight leakage is typical for in-service steering dampers

8. An intermediate shaft is being reinstalled after service. The shaft was NOT reference-marked before removal. The likely consequence is:

A. The shaft will install correctly because modern intermediate shafts have only one valid orientation during service

B. The U-joint needle bearings will bind from incorrect phasing during the installation of the shaft during service

C. The steering feel will be slightly different but acceptable for normal vehicle operation during service today

D. The shaft may install 180° out of phase — the steering wheel will be at six o'clock with road wheels straight

9. A power steering pump pressure test reads 1,250 psi at relief. Specification is 1,200 psi. What is the correct interpretation?

A. The reading is within normal tolerance — 50 psi above specification is acceptable for modern pumps during service

B. The pressure exceeds specification — the relief valve has stuck in the closed position requiring replacement today

C. The pump is producing excessive pressure from internal wear — requires replacement during the service visit today

D. The reading exceeds acceptable tolerance by a wide margin — the relief valve requires immediate adjustment

10. A 2022 vehicle with rack-mounted EPS has a "torque sensor signal implausible" DTC. The correct repair is:

A. Replace only the torque sensor as a separately serviceable component of the rack assembly during service today

B. Replace the rack and pinion assembly — the torque sensor is integrated and not individually serviceable

C. Clear the DTC and road test the vehicle — the signal may have been stored from a previous transient condition

D. Recalibrate the steering angle sensor — this will clear the torque sensor DTC during the service visit today

11. After battery replacement on an EPS-equipped vehicle, the EPS warning light stays on with reduced assist. The correct action is:

A. Replace the EPS control module because the voltage loss damaged the internal components during operation today

B. Replace the battery with a new unit — the replacement battery is likely defective causing the EPS warning today

C. Perform the manufacturer-specified EPS initialization procedure after battery service during the visit today

D. Disconnect the battery for 30 minutes to force the EPS module to automatically reset during the service visit

12. A clockspring failure is MOST commonly indicated by:

A. Reduced power steering assist during parking-lot steering maneuvers at slow speeds during operation today

B. Slow power steering fluid leakage from the rack and pinion bellows boot area during normal operation today

C. Increased steering effort during highway cruising at highway speeds during normal vehicle operation today

D. An inoperative horn and illuminated SRS warning light on the dashboard during normal operation of vehicle

SUSPENSION SYSTEMS DIAGNOSIS AND REPAIR (Questions 13–24)

13. A MacPherson strut suspension uses:

A. The strut as the upper locator of the knuckle — no separate upper control arm is present in the design

B. An upper control arm to locate the top of the knuckle during normal driving operation on the vehicle

C. Two control arms per side — one upper and one lower for locating the knuckle during normal operation

D. A torsion bar for spring function — no coil spring is included in the MacPherson strut design during service

14. A load-carrying ball joint on SLA suspension with coil spring on the lower control arm is:

A. The upper ball joint because it locates the top of the knuckle assembly to the frame during operation

B. Neither joint because the spring isolates the load from the joints during normal service of the vehicle

C. The lower ball joint because the spring rests on the lower control arm transferring the weight load

D. Both joints equally sharing the vehicle load regardless of spring mounting location during the operation

15. A stabilizer bar end link failure most commonly produces:

A. Squeaking noise during suspension articulation at parking speeds on the vehicle during normal driving today

B. Clunking noise over small bumps during straight-line driving on normal road surfaces during operation

C. Reduced steering effort during highway driving at highway speeds during normal vehicle operation today

D. Excessive tire wear on both front tires across the tread blocks during normal driving on the vehicle

16. An air suspension system must be disabled before lifting because:

A. The compressor may be damaged from running during the lifting procedure without disabling the system

B. The air springs will burst if the vehicle is lifted without first disabling the air system during service today

C. The battery will be drained by continuous compressor running during the vehicle lift time during service

D. The ride height sensors report extreme droop and the system may release or inflate air during lift today

17. U-bolts on a leaf spring should be torqued:

A. In a crisscross pattern to specification per the manufacturer's specified torque sequence during service

B. To double the specification to ensure the spring pack does not shift during driving on the vehicle today

C. With an impact wrench until they stop rotating for maximum clamping force during operation of the vehicle

D. Hand-tight to allow the spring pack to settle before final torque at the service interval later during visit

18. A torsion bar installed in the wrong orientation will likely:

A. Function normally — torsion bars are symmetric and can install in either direction during the service today

B. Produce incorrect ride height but otherwise function normally during normal service operation of the vehicle

C. Fracture eventually from loading in the reversed direction — torsion bars are heat-treated for one-direction loading

D. Produce a harsher ride but not fail during normal service operation of the vehicle during driving today

19. A wear-indicator ball joint has its grease fitting receded flush with the housing surface at curb height. This indicates:

A. The ball joint is within acceptable wear limits and does not require replacement during this service visit today

B. The wear indicator is defective and the joint must be inspected using alternate methods during the service today

C. The joint requires additional grease to extend its service life before any replacement is needed during service

D. The ball joint has reached its wear limit and requires replacement before continuing service on the vehicle today

20. Adaptive dampers must be replaced:

A. Only on the side showing the fault code to save cost and minimize service labor time during the visit today

B. As a pair on the same axle to maintain matched damping characteristics across both wheels during service

C. Along with all four dampers on the vehicle to ensure matched performance characteristics during the service

D. Only after confirming the fault is not caused by a wiring harness or connector failure during the service today

21. A coil spring has a visible crack in one coil. The correct repair is:

A. Weld the cracked coil and reinforce with welded material to restore the spring's original strength in service

B. Replace the cracked spring and the opposite spring on the same axle as a matched pair for the service

C. Install a spring insert to maintain ride height without full spring replacement during the service visit today

D. Monitor the crack during future service intervals and replace only if the crack progresses further during service

22. Subframe centering pins are used during subframe service to:

A. Align the subframe to its design position during mounting bolt torque application to the body during service

B. Prevent corrosion between the subframe and body during the installation phase of the service during visit today

C. Carry electrical current for the vehicle body ground during the reassembly for safety purposes during service

D. Lubricate the subframe bushings during the installation of the assembly to the body during service today

23. A leaf spring U-bolt that has come loose after torque-to-specification installation requires:

A. Retorqueing the existing U-bolt to the original specification value during the service visit today for correction

B. Applying thread locker to the U-bolt and retorqueing to compensate for the initial looseness during service

C. Overtorqueing the U-bolt beyond specification by 25% to ensure it does not loosen again during service

D. Replacing the U-bolt with a new torque-to-yield U-bolt — TTY fasteners are single-use and cannot be reused

24. A shock absorber bounce test produces 3 complete rebound cycles before the vehicle settles. This indicates:

A. The shock absorbers are operating within normal specifications — 3 cycles is typical during the service check

B. The shock absorbers have failed internally and cannot control spring oscillation — replacement is required today

C. The shock absorbers are over-damped and will produce a harsh ride during normal driving conditions today

D. The shock absorbers require oil addition through the fill port to restore damping function during the service today

WHEEL ALIGNMENT DIAGNOSIS, ADJUSTMENT, AND REPAIR (Questions 25–35)

25. Camber pull direction goes toward the:

A. Less-positive side — the side with less positive camber produces the pull during straight driving today

B. Rear of the vehicle because camber affects rear toe adjustment during normal driving operation today

C. More-positive side — the side with more positive camber produces the pull during highway driving

D. Front of the vehicle because camber affects the front toe setting during the normal service procedures

26. Caster pull direction goes toward the:

A. Less-caster side — the side with less positive caster produces the pull during highway driving today

B. More-caster side — the side with more positive caster produces the pull at highway speed conditions

C. Side with more negative camber because caster and camber interact during normal driving conditions today

D. Rear of the vehicle because caster affects the rear alignment during the normal service procedures today

27. Excessive toe-in at the front wheels produces:

A. Inside-edge wear with smooth feel across the tread — no feathering pattern present on tire surface today

B. Center tread wear with both shoulders showing significantly less wear pattern across tire during service

C. Cupped or scalloped wear around the tire circumference from worn shock absorbers causing tire wear

D. Outside-edge wear with feathering ramping up from outside toward inside across the tread surface today

28. Included angle (SAI + Camber) is used to diagnose:

A. Tire wear patterns from excessive camber at the front wheels during highway driving conditions today

B. Bent steering knuckles — matching included angles side-to-side indicate a straight knuckle during service

C. Excessive caster imbalance between the left and right front wheels during alignment service procedures today

D. Rear toe asymmetry creating a thrust angle affecting the vehicle during normal driving conditions today

29. The correct modern alignment sequence is:

A. Rear toe first to center thrust line, then front caster, front camber, and front toe last during the service

B. Front toe first to center the steering wheel, then front camber, caster, and rear toe during the service today

C. Front caster and camber first, then front toe, then rear toe and rear camber last during the service today

D. Rear camber first, then rear toe, then front toe, front caster, and front camber last in the sequence today

30. Setback is:

A. The angle between the rear axle thrust line and the vehicle geometric centerline measurement during service

B. The side-to-side camber difference between the left and right front wheels during alignment service on rack

C. The fore-aft offset between the two wheels on the same axle measurement during alignment service on rack

D. The angle between the steering axis and vertical viewed from the front during the alignment service on rack

31. Thrust angle is:

A. The fore-aft offset between wheels on the same axle measurement during alignment service on rack today

B. The angle between SAI and camber at the front wheels during the alignment rack service procedure today

C. The angle between the steering wheel and the road wheels during alignment rack service procedure today

D. The angle between the rear axle thrust line and the vehicle geometric centerline measurement during alignment

32. Tire conicity is identified by:

A. Swapping the front tires side-to-side — the pull direction reverses when the tire is moved to opposite side

B. Measuring the tire tread depth at each shoulder and comparing the wear pattern observed during service today

C. Performing a wheel balance to detect the cone-shaped tread pattern on the tire surface during service today

D. Inspecting the tire sidewall for bulging or damage indicating internal tire construction failure during service

33. A vehicle with lane-keep assist has had an alignment. The steering wheel was re-centered. Which calibration is required?

A. Only the tire pressure monitoring system requires reset after the alignment service is completed during service

B. Only the electronic stability control module requires a relearn during road test at highway speed conditions

C. The steering angle sensor and typically the ADAS forward camera require calibration during the service procedure

D. No calibration is needed because the forward camera was not physically disturbed during the service procedure today

34. Before beginning any alignment measurements, the technician must perform:

A. A caster sweep to record initial caster values before any other alignment angle is measured during the service

B. Wheel runout compensation on each wheel to correct for clamp offset errors before any measurement is taken

C. A road test to evaluate steering feel before beginning the alignment procedure at the service location today

D. Front toe adjustment to approximately zero to establish a measurement baseline reference point during service

35. A FWD vehicle with torsion beam rear suspension has a rear toe reading out of specification on one side only. The correct repair is:

A. Install aftermarket adjustable torsion beam mounts to provide rear toe adjustment capability during service today

B. Adjust the front toe to compensate for the rear asymmetry and document on the printout during service

C. Rotate the tires to equalize wear patterns caused by the out-of-specification rear toe during service today

D. Inspect the torsion beam and trailing arm for bent or damaged condition — replace damaged components

WHEEL AND TIRE DIAGNOSIS AND SERVICE (Questions 36–40)

36. A direct TPMS sensor has stopped reporting data. The vehicle is 8 years old. The MOST likely cause is:

A. The TPMS sensor battery has reached end of life — typical life is 5–10 years on direct TPMS sensors today

B. The TPMS module has lost programming and requires reprogramming with the vehicle VIN during service

C. The wheel speed sensor at that corner is affecting the TPMS direct sensor communication during service today

D. The tire pressure is at a threshold value causing the sensor to deactivate during service today at the shop

37. A torque-to-yield axle nut should be:

A. Reused if it is not visibly damaged from the initial service to save cost during the repair visit today

B. Torqued to 50% beyond specification to ensure adequate clamping force in service during operation today

C. Replaced with a new nut whenever it is removed — TTY fasteners stretch during initial torque applications

D. Coated with anti-seize compound before installation to prevent corrosion during normal service operation today

38. The maximum safe pressure for seating a tire bead during mounting is:

A. Whatever pressure is needed to seat the beads completely against the wheel during the service procedure today

B. Forty psi for standard passenger tire applications on passenger vehicle wheels during mount procedure today

C. Sixty psi for standard passenger tire applications on passenger vehicle wheels during mounting procedure today

D. The maximum pressure listed on the tire sidewall during normal operating conditions of use during service today

39. A wheel-and-tire assembly on a balancer shows weights at both the inner and outer rim edges at 180° apart. This indicates:

A. The assembly is within acceptable residual balance tolerance and no additional correction is needed during service

B. The assembly has only static imbalance that can be corrected at a single plane position during service today

C. The assembly has radial runout requiring match-mounting to reduce the combined runout during service today

D. The assembly has dynamic imbalance requiring weights at both rim edges for proper correction during service

40. A tire sidewall reads "P225/60R17 98H." The "R" represents:

A. Radial construction — the tire is built with radial-ply construction as its internal structure design today

B. Aspect ratio — the sidewall height as a percentage of section width during normal service and operation today

C. Load index — maximum load capacity at rated inflation pressure during normal service and operation today

D. Wheel diameter — the tire is designed to fit a specific wheel diameter in inches during the installation service

Practice Exam 25: Answer Key and Explanations

1. A — Clocksprings must be mechanically centered per the manufacturer's specified procedure with road wheels pointing straight ahead before steering wheel installation. This positions the internal ribbon cable at the middle of its travel range. Installing the wheel first, connecting the battery first, or rotating to a hard stop all risk damaging the ribbon cable during normal steering operation.

2. C — Both technicians are correct. SRS service always begins with disconnecting the negative battery cable — this is the first non-negotiable step. The specified capacitor discharge time must also be waited before airbag removal because the SRS module's backup capacitor can fire the airbag for several minutes after power is removed. Both steps are required in sequence.

3. B — Low fluid with whining is the classic signature of air ingestion into the system. The low fluid level allows the pump to draw air along with the fluid, producing the whining noise. The correct repair is topping off fluid and performing a complete bleeding procedure to remove all trapped air. This addresses the actual root cause.

4. D — Internal rack bypass is definitively identified when the pump can build specification pressure at its outlet (with shut-off valve closed) but the rack cannot reach the same pressure at full lock. This confirms fluid is leaking past the rack piston internally. The pump is healthy; the rack must be replaced.

5. A — EPS modules are highly sensitive to supply voltage. A P0562 DTC with good resting battery voltage points to high-resistance connections that only reveal themselves under load. Voltage drop testing on the EPS power and ground circuits under maximum current flow is the correct diagnostic step before condemning modules or batteries.

6. B — Sector shaft over-center preload is always measured with the pitman arm removed and the steering wheel at the center position. Installing the pitman arm transfers linkage loads through the gear, producing false readings. Pitman removed + wheel centered is the only correct setup for this measurement. Heavily tested A4 fundamental.

7. C — Active external leakage with visible oil drips down the damper body confirms seal failure and internal fluid loss. The damper can no longer generate consistent damping force. Slight dampness is normal weepage; active drips require replacement. Seal replacement is not a manufacturer-approved repair for most modern dampers.

8. D — Most intermediate shafts can physically install in two orientations 180° apart. Without reference-marking before removal, the shaft often installs out of phase, putting the steering wheel at the six o'clock position when the road wheels point straight. Reference-marking before disassembly is a mandatory habit that prevents this.

9. A — A reading of 1,250 psi vs. 1,200 psi specification is within normal tolerance. Relief pressure readings are expected to vary slightly around the specification value; 50 psi above spec is well within

acceptable range. Recognizing normal test values is as important as identifying abnormal readings — not every variance indicates a fault.

10. B — On modern rack-mounted EPS systems, the torque sensor is integrated into the rack assembly as a non-serviceable component. When the sensor produces invalid signals, rack replacement is the correct repair. Separate sensor replacement isn't available; clearing the DTC without repair returns the fault; SAS recalibration doesn't address torque sensor issues.

11. C — After battery replacement on an EPS-equipped vehicle, the manufacturer-specified EPS initialization procedure is typically required to restore full assist. The system loses certain learned values during power loss and operates in reduced-assist mode until the procedure is performed. This is one of the most commonly missed post-battery-service steps.

12. D — Clockspring failure directly affects circuits routed through the clockspring — primarily the horn, airbag squib, and steering wheel controls. When the clockspring fails, the horn goes dead and the SRS warning light illuminates. It does not affect hydraulic assist, rack sealing, or highway steering effort, which are separate systems.

13. A — MacPherson strut suspension uses the strut as the upper locator of the knuckle, eliminating the upper control arm. This is the defining architectural feature of MacPherson designs. The lower control arm, coil spring around the strut, and upper strut mount with bearing are all standard components of the MacPherson strut design.

14. C — In SLA suspensions, the load-carrying ball joint is on the same side of the knuckle as the spring. When the spring rests on the lower control arm, the lower ball joint carries the vehicle's weight through the spring load path. The upper ball joint is the follower. This identification determines correct inspection technique.

15. B — Failed stabilizer bar end links produce bilateral clunking over small bumps during straight-line driving. The noise diminishes during cornering (when the link is loaded and tension-quiet) and returns during straight driving over bumps. This specific symptom profile distinguishes end links from other failure modes.

16. D — Air suspension systems must be disabled before lifting because ride height sensors report extreme droop when wheels are off the ground. The system may respond by releasing air (dropping the

vehicle too far) or commanding inflation (overextending the air springs). Disabling prevents these unwanted and potentially damaging responses.

17. A — U-bolts must be torqued in a crisscross (diagonal) pattern per manufacturer specification. This ensures even clamping force across the spring pack. Sequential torque, impact tightening, over-torque, or hand-tight with later retorque all produce uneven or inadequate clamping. Crisscross pattern torque in stages is the correct industry-standard practice.

18. C — Torsion bars are heat-treated for one-direction loading. Installation reversed or on the wrong side eventually causes fracture from reversed stress patterns. Manufacturer markings for left/right orientation must be respected — this is a safety issue, not just a performance issue. Always verify orientation before installation.

19. D — On wear-indicator ball joints, when the grease fitting recedes flush with or below the housing surface at curb height, the joint has reached its wear limit and requires replacement. Only an indicator projecting above the housing indicates acceptable wear. Inspection must be at curb height with the joint loaded for valid reading.

20. B — Adaptive dampers must be replaced in pairs on the same axle to maintain matched damping characteristics. Asymmetric damping from one new and one old damper cannot be compensated by the control module and produces unpredictable handling. Wiring should be verified first, but the standard replacement practice is pairs.

21. B — A cracked coil spring must be replaced, and the opposite spring on the same axle must also be replaced as a matched pair. Mismatched spring rates cause uneven ride height and compromised handling. Welding, spring inserts, and monitoring-for-failure are all unsafe practices — pair replacement is the industry standard.

22. A — Subframe centering pins align the subframe to its design position during mounting bolt torque application. The pins ensure the subframe doesn't sit a few millimeters off design position, which would make alignment uncorrectable through normal adjustment range. Pins lock position while bolts are torqued to specification.

23. D — Leaf spring U-bolts marked as torque-to-yield must be replaced with new units whenever they are disturbed or loose. Once loosened, a TTY U-bolt cannot maintain proper clamping force even when

retorqued. Retorqueing old U-bolts, thread locker, and overtorque are all unsafe practices. New U-bolts is the only acceptable repair.

24. B — A properly functioning shock produces ONE complete rebound cycle before settling. Three cycles indicates failed damping — the shock cannot control spring oscillation. Shock absorbers are sealed units; they cannot be refilled with oil. The multi-cycle bounce is the specific failure pattern that indicates replacement is required.

25. C — Camber pull direction goes toward the MORE-positive side. The side with more positive camber causes the tire to roll more on its outside edge, creating a pulling force in that direction. This is the opposite of caster pull direction. Memorize: camber → more-positive side; caster → less-caster side.

26. A — Caster pull direction goes toward the LESS-caster side. The side with less caster has weaker self-centering force, causing the vehicle to pull toward that side. This is opposite to camber pull direction, which is why the two are commonly confused. This is a core A4 rule that appears frequently on the real exam.

27. D — Excessive toe-in causes the tires to scrub outward as they roll, producing outside-edge wear with feathered sawtooth patterns. Running a hand across the tread feels catchy in one direction, smooth in the other. Toe-in wears the outside edges with feathering; toe-out wears the inside edges with feathering.

28. B — Included angle (SAI + Camber) is used to diagnose bent steering knuckles. Matching included angles side-to-side confirm the knuckles are straight. When included angles differ by more than 0.5°, a knuckle is typically bent. SAI is built into the knuckle casting and cannot be adjusted, making this a reliable diagnostic test.

29. A — The correct modern alignment sequence is rear toe first (to center the thrust line), then front caster, then front camber, then front toe with the steering wheel centered. This order exists because front toe is set relative to the thrust line — setting it before rear toe would require redoing it. This sequence is industry-standard.

30. C — Setback is the fore-aft offset between the two wheels on the same axle. Significant setback typically indicates collision damage that has shifted a subframe or bent a control arm. Setback is distinct from thrust angle (rear axle direction), camber difference, or SAI (front viewed angle). Fore-aft wheel offset is the specific definition.

31. D — Thrust angle is the angle between the rear axle's thrust line (the direction the rear axle is pointing) and the vehicle's geometric centerline. A non-zero thrust angle causes the vehicle to crab. This is specifically a rear-axle measurement and is distinct from setback, SAI, or front-rear geometry relationships.

32. A — Tire conicity is identified by swapping the front tires side-to-side and observing whether the pull direction reverses. If the pull changes direction, a tire is causing the pull through its inherent lead direction from manufacturing. Alignment-caused pulls remain constant regardless of tire position. This is the definitive diagnostic test.

33. C — When the steering wheel is re-centered during alignment, the SAS's learned zero-point is invalidated. On lane-keep-assist-equipped vehicles, the forward camera also typically requires calibration because the lane-keep system uses the SAS reference. Both the steering angle sensor and ADAS camera typically require calibration after this service.

34. B — Wheel runout compensation is the mandatory first step before any alignment measurement. Without compensation, every reading is offset by a fraction of a degree due to the clamp's offset from the wheel's rotation axis. Skipping this step invalidates the entire alignment; it must be done before initial measurements or adjustments.

35. D — Torsion beam rear suspensions typically have no rear toe adjustment. When one side reads out of spec, the beam or trailing arm is bent — requiring component replacement, not adjustment. Installing aftermarket adjustment, compensating at the front, or tire rotation all miss the actual problem. The bent component is the underlying cause.

36. A — Direct TPMS sensor batteries have a typical service life of 5–10 years. On an 8-year-old vehicle with a sensor reporting "not communicating," battery failure is the most likely cause. Replacement and relearn restore function. Module programming, wheel speed sensors, and pressure thresholds are less common causes of this specific symptom.

37. C — Torque-to-yield axle nuts are single-use fasteners designed to stretch during their initial torque cycle to achieve precise preload. Reusing a TTY nut cannot produce proper clamping force because the stretch has already occurred. Always install a new TTY nut per specification — this is non-negotiable regardless of cost savings.

38. B — The maximum safe pressure for seating tire beads during mounting is 40 psi for standard passenger tire applications. Exceeding this risks sudden bead failure that can cause catastrophic injury. If beads won't seat at 40 psi or less, dismount and investigate — don't over-pressurize. This is a documented shop safety requirement.

39. D — Weights at both inner and outer rim edges 180° apart is the classic signature of dynamic (two-plane) imbalance. The offset mass distribution along the wheel's axis creates a wobbling force couple that modern balancers correct with weights at each rim edge simultaneously. Static imbalance alone requires only single-plane correction.

40. A — The "R" in a tire size code indicates radial construction — the tire is built with radial-ply construction as its internal structure design. This is the standard construction type for modern passenger tires. Other letters (D for diagonal/bias, B for belted bias) indicate different construction types but are increasingly rare on passenger vehicles.