# PRACTICE EXAM 6: ASE A4 SIMULATION (40 QUESTIONS)

**STEERING SYSTEMS DIAGNOSIS AND REPAIR (Questions 1–12)**

1. Each of the following can cause loss of power steering assist EXCEPT:

A. A slipping serpentine belt at the power steering pump pulley

B. A low fluid level in the reservoir of the power steering system

C. A failed pressure relief valve stuck in the open position

D. A worn wheel bearing on the driver's side front wheel hub

2. A clockspring failure is most likely to cause which symptom?

A. Heavy steering effort during parking-lot maneuvers at low speed

B. An inoperative horn and SRS warning light illuminated on the dash

C. Slow power steering fluid leakage from the rack bellows boot

D. Reduced EPS motor current during normal highway driving conditions

3. The LEAST likely cause of a clunking noise from the steering column is:

A. Fluid contamination in the power steering reservoir and lines

B. A loose steering wheel retaining nut on the steering shaft

C. Worn U-joint needle bearings in the intermediate shaft assembly

D. A worn upper column bearing allowing shaft radial movement

4. The collapsible section of an intermediate shaft is designed to:

A. Allow rotation through an angular offset between the column and gear

B. Prevent driveline vibration from transmitting to the steering wheel rim

C. Absorb crash energy by shortening during a frontal collision event

D. Compensate for thermal expansion during engine warm-up cycles

5. A power steering system is being bled after a rack replacement. The correct procedure begins with:

A. Engine off, slowly turning the steering wheel lock-to-lock several times

B. Engine running at 2,500 RPM while cycling steering to full lock position

C. Disconnecting the return line and catching the fluid in a container

D. Removing the reservoir cap and applying a vacuum pump to the system

6. Which power steering component most directly limits the maximum system pressure?

A. The flow control valve inside the pump housing assembly

B. The rack pressure spring adjustment at the gear assembly

C. The return line restriction from the gear to the reservoir inlet

D. The pressure relief valve integrated into the pump assembly

7. A recirculating ball gearbox has developed excessive free play at the steering wheel. The best diagnostic test is:

A. A power steering pressure test with gauge and shut-off valve

B. A road test at highway speed to evaluate self-centering behavior

C. A dry park test with an assistant rocking the steering wheel

D. A scan tool check for any EPS-related diagnostic trouble codes

8. A 2021 sedan with rack-mounted EPS arrives with no assist and a scan tool DTC for "EPS supply voltage low." The battery tests good at 12.6 volts at rest. What should be checked NEXT?

A. The EPS control module for internal failure requiring replacement

B. Voltage drop on the EPS power feed and ground circuits under load

C. The steering angle sensor calibration using the manufacturer scan tool

D. The serpentine belt tensioner for proper function at engine idle

9. Each of the following is correct SRS service practice EXCEPT:

A. Disconnecting the negative battery cable before any airbag service

B. Waiting the specified capacitor discharge time after battery disconnect

C. Storing a removed airbag face-up on a flat surface during service

D. Testing airbag squib circuits with a conventional digital multimeter

10. A power steering hose inspection reveals which finding requires replacement?

A. Visible cracks or splits in the outer rubber cover along the hose

B. Slight dampness around a crimped metal end fitting after service

C. A spot of oxidation on the metal end fitting where it is crimped

D. Surface stains or discoloration of the hose near the exhaust manifold

11. A steering damper on a pickup truck is typically mounted between the axle and:

A. The frame rail at the front bumper support of the vehicle

B. The drag link or tie rod connecting the steering gear to the knuckle

C. The power steering pump bracket at the engine mounting location

D. The transmission crossmember at the rear of the powertrain assembly

12. A vehicle with electrohydraulic power steering (EHPS) has a compressor-style pump that stops running when the engine is shut off during stop/start operation. What is the most likely cause?

A. The EHPS pump motor has failed and cannot maintain fluid pressure

B. The hydraulic reservoir is below minimum level causing pump cavitation

C. The 12V power feed to the pump is interrupted during engine stop mode

D. The vehicle speed signal has been lost disabling variable assist output

**SUSPENSION SYSTEMS DIAGNOSIS AND REPAIR (Questions 13–24)**

13. Each of the following is a function of a suspension bushing EXCEPT:

A. Allowing controlled pivoting of the control arm through its travel range

B. Isolating road vibration from transmitting into the vehicle chassis

C. Locating the control arm precisely at the pivot point under load

D. Carrying the primary vertical weight load of the vehicle body

14. A MacPherson strut assembly includes each of the following components EXCEPT:

A. An upper control arm connecting the knuckle to the chassis shell

B. A coil spring mounted concentrically around the strut body assembly

C. An upper strut mount with integrated thrust bearing for steering

D. A shock absorber built into the strut body assembly itself

15. A ball joint is being inspected with the vehicle on a two-post lift with the wheels hanging free. This inspection setup is correct for:

A. A load-carrying lower ball joint on an SLA suspension system

B. A load-carrying lower ball joint on a MacPherson strut system

C. A follower ball joint on an SLA suspension with the spring on the lower arm

D. Any ball joint regardless of load-carrying or follower position

16. A stabilizer bar end link is worn. The most likely symptom is:

A. Excessive body roll during cornering at highway speeds above 60 mph

B. Clunking noise over small bumps during straight-line driving only

C. Squeaking noise during suspension articulation at parking speeds

D. Uneven tire wear pattern on both front tires across the tread

17. A vehicle has developed a sag at the right rear corner over two weeks. The vehicle uses air suspension. The compressor runs for several minutes on startup and restores ride height. What is the most likely cause?

A. The compressor output pressure is below manufacturer specification

B. The ride height sensor at the right rear is reporting incorrect position

C. The air suspension control module has failed and needs replacement

D. A slow air leak in the right rear air spring or its plumbing system

18. A leaf spring rear axle has developed excessive axle wrap during hard acceleration. The most likely cause is:

A. A weak or cracked main leaf in the rear spring pack assembly

B. Worn rear shock absorbers allowing excessive body motion cycles

C. Improperly torqued U-bolts reducing spring pack clamping force

D. A failed stabilizer bar bushing on the rear axle assembly

19. Each of the following is a correct practice for adaptive damper service EXCEPT:

A. Replacing dampers in pairs on the same axle for matched characteristics

B. Verifying wiring harness integrity before condemning the damper unit

C. Exposing the damper to strong external magnetic fields during handling

D. Running a scan tool calibration procedure after damper replacement

20. A coil spring is being compressed using a spring compressor. Which practice is correct?

A. Use any available spring compressor rated for heavier-duty applications

B. Engage the compressor in the plane specified by the manufacturer

C. Stand directly in the spring's potential release path during compression

D. Compress the spring until the coils fully contact each other at the bottom

21. A pickup truck with torsion bar front suspension has ride height 1 inch below specification on both sides equally. What is the correct action?

A. Replace both torsion bars with new bars and set to factory specification

B. Adjust ride height with the vehicle on a two-post lift for better access

C. Adjust both torsion bar preload bolts with the vehicle at curb weight

D. Swap the torsion bars left-to-right to equalize ride height between sides

22. Each of the following can cause clunking from the front suspension EXCEPT:

A. A properly torqued front lower ball joint with minimal stud play

B. Worn stabilizer bar end links on both sides of the vehicle

C. Loose strut-to-knuckle mounting bolts at the assembly interface

D. Worn control arm pivot bushings with cracked rubber visible

23. A worn subframe mounting bushing on a unibody vehicle most likely causes:

A. A consistent whining noise from the front of the vehicle at idle

B. Excessive body roll during normal cornering at highway speeds

C. Steering wheel shimmy at speeds between 55 and 65 mph

D. Alignment that drifts out of specification over time between services

24. A MacPherson strut has been replaced on one side of a vehicle. Which additional practice is correct?

A. Replacing only the failed strut without additional component service

B. Replacing the opposite strut as a pair to maintain matched damping

C. Replacing the rear shocks at the same time regardless of condition

D. Replacing the control arm bushings during every strut replacement

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

25. Each of the following is a primary alignment angle EXCEPT:

A. Camber at the front wheels of the vehicle

B. Steering axis inclination at the front of the vehicle

C. Caster at the front wheels of the vehicle

D. Toe at the front or rear wheels of the vehicle

26. A vehicle with excessive positive camber at both front wheels will most likely exhibit:

A. Inside-edge tire wear with a smooth feel across the tread blocks

B. Center tread wear with minimal shoulder wear on either edge

C. Feathered sawtooth wear pattern across both front tire treads

D. Outside-edge tire wear with a smooth feel across the tread blocks

27. The LEAST likely cause of a steering wheel off-center when driving straight is:

A. Worn front wheel bearings allowing excessive wheel movement

B. Asymmetric front toe adjustment between left and right tie rods

C. A non-zero thrust angle from asymmetric rear toe settings

D. A bent or improperly reindexed steering wheel on the splined shaft

28. A vehicle has cross-caster of 1.5° with the right side more positive than the left. What is the expected effect on vehicle behavior?

A. The vehicle will pull strongly toward the right side of the road

B. The cross-caster has no effect on the vehicle's directional stability

C. The vehicle will pull toward the left, the less-caster side of vehicle

D. The steering wheel will be off-center by the cross-caster amount

29. Each of the following is required before performing a wheel alignment EXCEPT:

A. Verifying the ride height is within manufacturer specification

B. Inspecting tie rod ends and ball joints for play or wear

C. Confirming tire pressures are at the placard-specified values

D. Replacing all four tires with new matching-brand tires

30. A technician measures SAI at 12.0° on the left and 12.2° on the right. Camber on both sides reads within specification. What does the SAI comparison confirm?

A. The steering knuckles are bent and require replacement on both sides

B. The steering knuckles are within tolerance and not damaged by impact

C. The vehicle has collision damage affecting the front suspension system

D. The alignment machine requires recalibration before continuing service

31. A vehicle's alignment shows rear toe of +0.20° left and +0.05° right. Total rear toe is +0.25° within specification, but which condition exists?

A. The rear alignment is fully in specification with no corrections needed

B. The thrust angle is non-zero and the vehicle will crab or track offset

C. The front toe will self-correct to compensate for the rear asymmetry

D. The steering wheel will center despite the asymmetric rear toe settings

32. Each of the following can cause vehicle pull EXCEPT:

A. Asymmetric camber between left and right front wheels on the vehicle

B. A dragging brake caliper on one front wheel of the vehicle

C. Unequal tire pressure between the left and right front tires

D. Symmetric front toe-in equal on both sides at specification

33. The correct sequence for adjusting alignment angles is:

A. Rear toe first to set thrust line, then front caster, camber, toe in order

B. Front toe first to center steering wheel, then camber, caster, rear toe

C. Front caster and camber first, then front toe, then rear toe and camber

D. Rear camber first, then rear toe, then front toe before front caster

34. A vehicle has no factory adjustment for front camber. Camber reads 1.0° more positive than specification on one side. The correct action is:

A. Leave the camber out of specification and document on the printout

B. Reduce tire pressure on the affected side to compensate for the reading

C. Install an aftermarket adjustment kit or repair the underlying cause

D. Rotate the tires to equalize wear from the out-of-specification condition

35. A vehicle's alignment is complete. Before releasing to the customer, what final step is required?

A. A road test to verify tracking and steering wheel position during driving

B. A power steering fluid level check with the engine running at idle

C. A tire pressure recheck of all four tires at the manufacturer specification

D. A replacement of all four stabilizer bar end links for preventive service

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

36. Each of the following is an acceptable wheel bearing inspection finding on a modern Gen 3 hub assembly EXCEPT:

A. No perceptible play when rocking the tire at the 12 and 6 o'clock positions

B. Smooth rotation with no roughness when spinning the wheel by hand

C. No growling noise during a road test at varying highway speed ranges

D. Visible grease seeping from the inboard seal of the hub assembly unit

37. A direct TPMS sensor has been replaced on one wheel. Which step is required before returning the vehicle to service?

A. Driving the vehicle at highway speed for 30 continuous minutes

B. Disconnecting the battery for 30 minutes to reset the TPMS module

C. Performing the vehicle-specific TPMS relearn or programming procedure

D. Inflating all four tires to 50 psi to trigger the sensor recognition

38. A tire shows inside-edge wear that is feathered with tread blocks ramped up on the outside edge. What is the cause?

A. Excessive toe-out causing the tire to scrub inward as it rolls on road

B. Excessive negative camber causing flat wear on the inside edge only

C. Under-inflation causing both shoulders to wear more than center tread

D. Worn shock absorbers causing cupped pattern around tire circumference

39. A wheel-and-tire assembly is being balanced. The balancer recommends 0.5 oz at the inner and 0.5 oz at the outer position, 180° apart. What does this indicate?

A. The assembly is balanced within acceptable specification for service

B. The assembly has radial runout requiring match-mount correction only

C. The assembly has dynamic imbalance requiring weights at both rim edges

D. The balancer needs recalibration before completing the balance service

40. A passenger vehicle tire has the marking "P215/65R17 99T." The "17" represents:

A. The tire's aspect ratio as a percentage of section width in millimeters

B. The wheel diameter in inches that the tire is designed to fit around

C. The maximum speed rating in hundreds of kilometers per hour sustained

D. The tire's load index specifying maximum load at rated pressure levels

## Practice Exam 6: Answer Key and Explanations

1. D — A worn wheel bearing causes noise and wheel play but has no effect on power steering assist. Assist loss originates in the hydraulic or electric power-steering circuit itself — belt, fluid, relief valve, pump, or EPS hardware. Always map symptoms to the correct system before diagnosing; bearings and steering assist are independent paths.

2. B — The clockspring is the electrical link from the steering column to the steering-wheel-mounted airbag, horn, and controls. When it fails, the horn goes dead, steering-wheel buttons stop working, and the SRS warning light illuminates with a stored DTC. It does not affect hydraulic assist, rack sealing, or EPS motor current.

3. A — Fluid contamination in the power steering system produces whining, assist loss, or seal damage — not clunking from the column. Clunking originates in mechanical slack: loose wheel nuts, worn

intermediate shaft joints, or worn upper column bearings. Clunking is a mechanical-play symptom, not a hydraulic one.

4. C — The collapsible section of the intermediate shaft absorbs crash energy by progressively shortening during a frontal collision, limiting rearward steering wheel intrusion into the driver. It works in series with the collapsible column. U-joints (not the collapsible section) handle angular offset; vibration and thermal expansion are not its purpose.

5. A — The manual bleeding procedure begins with the engine OFF, slowly turning the wheel lock-to-lock multiple times. This draws air out of the rack and into the reservoir without pressurizing the system. Only after this step is complete is the engine started for the next stage. Engine-running bleeds can trap air under pressure.

6. D — The pressure relief valve is specifically designed to cap maximum system pressure (typically 1,000–1,500 psi) by dumping flow when the cap is reached. The flow control valve regulates volume, not maximum pressure. Return restrictions and rack spring adjustments have different functions in the hydraulic circuit.

7. C — The dry park test with an assistant rocking the steering wheel while the technician inspects each joint is the cornerstone of linkage and gearbox free-play diagnosis. Pressure testing evaluates hydraulic function; road tests are subjective; scan tools don't apply to mechanical recirculating-ball gearboxes. The dry park test localizes the wear source.

8. B — A DTC for EPS supply voltage low with a good resting battery voltage points to high circuit resistance under load. EPS motors can draw 80+ amps during parking maneuvers, and even small resistance in the power or ground circuit causes voltage drop the module interprets as supply fault. Voltage drop testing is the correct next step.

9. D — Conventional digital multimeters can source enough current to potentially trigger an airbag deployment. Only manufacturer-approved scan tools or certified airbag testers may probe SRS circuits. Battery disconnect, capacitor wait time, and face-up storage are all correct SRS practices — only the DMM test is prohibited.

10. A — Visible cracks or splits in the outer rubber cover indicate the hose is aging and at risk of sudden rupture. Slight dampness at fittings is typical weepage, surface oxidation on fittings is cosmetic, and

discoloration near exhaust heat is normal. Cracks mean the hose reinforcement is compromised and replacement is required.

11. B — A steering damper is mounted horizontally between a fixed point on the axle and a moving point on the steering linkage — typically the drag link or tie rod on solid-axle trucks. This placement allows the damper to resist high-velocity steering motion (shimmy, bump steer) without impeding normal steering input.

12. C — EHPS pumps are electrically driven; when the engine shuts off during stop/start mode, the 12V power feed to the pump is typically interrupted unless the vehicle is designed to keep it active. If the system doesn't maintain pump power during engine-off intervals, assist is briefly lost until restart. This is a power-supply architecture issue.

13. D — Bushings allow pivoting, isolate vibration, and locate control arms precisely — but they do NOT carry the vehicle's vertical weight load. That function is handled by the springs (coil, leaf, torsion, air). Bushings see cornering and braking loads through the pivot, not the sprung weight of the vehicle body.

14. A — The MacPherson strut design eliminates the upper control arm — the strut itself serves as the upper locator of the knuckle. This is the whole point of the architecture: combining spring, damper, and upper structural locator into a single compact assembly. An upper control arm belongs to SLA designs, not MacPherson.

15. C — A follower (non-load-carrying) ball joint on an SLA with the spring on the lower arm can be inspected with the wheels hanging free, because the joint is naturally unloaded in that position. Load-carrying joints require the pry-bar-under-control-arm technique to unload them before inspection. Inspection setup is joint-type specific.

16. B — Failed stabilizer 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 is the distinctive signature of end-link failure and one of the most common front-end complaints.

17. D — Overnight sag with a several-minute compressor run to restore height indicates a slow air leak in the air spring or its plumbing. The leak is small enough that the spring holds overnight but not

indefinitely; the compressor refill time directly reflects how much air has escaped. Leak testing at that corner locates the source.

18. A — Axle wrap on leaf-spring suspensions occurs when the axle rotates under acceleration torque because the springs cannot resist the twist. This typically results from a weak or cracked main leaf, which normally provides most of the wrap resistance. U-bolts and shocks play supporting roles, but the main leaf is the primary anti-wrap structure.

19. C — MR dampers must be protected from strong external magnetic fields during handling and storage — exposure can affect the iron particle alignment inside the damper or damage the internal coil. Pair replacement, wiring verification, and post-replacement calibration are all correct practices; the magnetic exposure is the prohibited practice.

20. B — Spring compressors must be engaged in the specific geometric plane the manufacturer specifies; improper engagement allows the spring to slip or twist during compression, potentially releasing with fatal force. Using any-available compressors, standing in the release path, and coil-clashing compression are all unsafe practices.

21. C — Torsion bar ride height adjustment must be performed with the vehicle on the ground at curb weight so the suspension is in its normal loaded position. Adjustment on a lift with wheels hanging produces incorrect preload settings. Replacement is unnecessary unless adjustment range is exhausted; swapping sides causes eventual bar fracture.

22. A — A properly torqued ball joint with minimal stud play is in correct condition and will not cause clunking — that's the baseline of normal operation. Worn end links, loose strut-to-knuckle bolts, and worn control arm bushings all produce clunking noises because they allow mechanical play that generates impact sounds under load.

23. D — Worn subframe bushings allow the subframe to shift under dynamic loads, producing alignment that drifts between services even though static alignment looks correct on the rack. The symptom is subtle — no obvious noise or handling complaint at low mileage — but becomes evident as the alignment gradually moves out of spec over time.

24. B — Struts should always be replaced in pairs on the same axle. Asymmetric damping (new on one side, worn on the other) produces unpredictable handling and different dynamic alignment between

sides, which can be dangerous in emergency maneuvers. Rear shocks and control arm bushings are replaced based on their own condition, not automatically.

25. B — Steering axis inclination (SAI) is a diagnostic (secondary) angle, not a primary adjustable angle. The three primary angles are camber, caster, and toe. SAI is built into the knuckle casting and cannot be adjusted during normal alignment — it's used diagnostically via included angle comparison to identify bent knuckles.

26. D — Excessive positive camber tilts the top of the wheel outward, causing the outside edge of the tire to carry more load and wear with a smooth (flat) pattern. Negative camber produces inside-edge smooth wear; excessive toe produces feathered patterns. The smooth-edge-wear-with-camber vs. feathered-wear-with-toe distinction is core A4 knowledge.

27. A — Worn front wheel bearings cause noise and wheel play but do NOT cause the steering wheel to sit off-center while tracking straight. Off-center wheel originates from asymmetric toe adjustment, a non-zero thrust angle, or an improperly reindexed wheel on its splines. Bearing condition and steering wheel centering are unrelated.

28. C — Caster pull goes opposite to camber pull: the vehicle pulls toward the side with LESS caster. With 1.5° more caster on the right, the vehicle pulls toward the left (the less-caster side) because that side has weaker self-centering force. Memorize the rule: camber pulls toward the positive side; caster pulls toward the less-caster side.

29. D — Ride height verification, linkage and ball joint inspection, and tire pressure confirmation are all required pre-alignment checks. Replacing all four tires is not a required pre-alignment step — tires are replaced when they fail their own inspection criteria, not routinely before every alignment.

30. B — SAI side-to-side difference of 0.2° is well within the typical 0.5° tolerance, which confirms the steering knuckles are not bent. If SAI differed by 1.0° or more, a bent knuckle would be suspected. SAI comparison is the fastest way to validate knuckle integrity during alignment service.

31. B — Total rear toe can be in spec while asymmetric left-vs-right rear toe creates a non-zero thrust angle, causing the vehicle to crab down the road. The thrust line points away from the geometric centerline, and the driver must hold the steering wheel off-center to track straight. Rear toe must be symmetric, not just within total spec.

32. D — Symmetric front toe-in equal on both sides produces balanced, symmetric forces and cannot cause a pull. Pulls require asymmetry. Asymmetric camber, brake drag on one side, and unequal tire pressures all create the asymmetric forces that pull the vehicle one direction. Equal settings always produce equal behavior.

33. A — The universal modern alignment sequence is rear toe first (to establish a zero thrust line), then front caster, then front camber, then front toe with the steering wheel centered. This order exists because front toe must be set relative to the thrust line — setting it before adjusting rear toe would require redoing it afterward.

34. C — When a vehicle has no factory camber adjustment and the reading is out of spec, the correct actions are installing an aftermarket adjustment kit (offset bolts, slotted plates) or repairing the underlying cause of the misalignment (bent strut, failed mount, worn bushings). Leaving it out of spec or compensating with pressure is never acceptable.

35. A — A road test to verify tracking, steering wheel position, and freedom from new noises is the mandatory final step of every alignment. Without verification, the technician cannot confirm the alignment is correct under real driving conditions. Tire pressure, fluid checks, and preventive replacements are separate services, not alignment-closing steps.

36. D — Grease seeping from the inboard seal of a Gen 3 hub assembly indicates seal failure and bearing contamination — the hub is compromised and must be replaced. No play, smooth rotation, and no noise are all normal acceptable findings. Visible seal leakage is the exception that indicates the bearing's sealed lubrication has been breached.

37. C — After TPMS sensor replacement, the vehicle-specific relearn or programming procedure must be performed so the module recognizes the new sensor's position. Without relearn, the system won't correctly associate the sensor's signal with its wheel location. Highway drives and battery disconnects don't reliably complete the relearn on all vehicles.

38. A — Feathered wear with tread blocks ramped up on the outside edge means the tire has been scrubbing inward — the signature of excessive toe-out. Running a hand across the tread feels catchy in one direction, smooth in the other. Camber causes smooth edge wear; toe causes feathered edge wear — this pattern points specifically to toe-out.

39. C — Weights specified at both the inner and outer rim edges at 180° apart is the signature of dynamic (two-plane) imbalance. Static imbalance would require only a single-plane correction. Dynamic imbalance creates a wobbling force couple that modern balancers correct with weights at each rim edge simultaneously.

40. B — In the tire size code, the number after the "R" represents the wheel diameter in inches — the tire is designed to fit a 17-inch wheel. The "215" is section width in mm, the "65" is aspect ratio percentage, the "99" is load index, and the "T" is speed rating. Each element of the code has a specific, non-interchangeable meaning.