# PRACTICE EXAM 8: ASE T5 SIMULATION (50 QUESTIONS)

1. A heavy-truck driver complains of vibration that occurs only at one specific speed (about 60 mph) and disappears at slightly higher and lower speeds. The most likely cause is:

A. Worn front shock absorbers producing speed-dependent damping issues

B. A wheel-and-tire imbalance creating a resonance at that specific speed

C. Excessive sector shaft lash producing speed-related steering feedback

D. A misadjusted height control valve causing speed-related ride changes

2. The component on a heavy-truck rear suspension that allows the chassis to maintain constant ride height regardless of cargo load is the:

A. Pressure-protection valve

B. Cab leveling shock absorber

C. Height control valve in the air-spring system

D. Stabilizer bar end link bushing

3. A heavy-truck steer axle measures camber within specification on both wheels. The included angle on the right wheel is 0.75 degree higher than the left wheel's included angle. The most likely diagnosis is:

A. Worn right kingpin bushings allowing the knuckle to tilt

B. A bent right front axle

C. Excessive right front tire pressure

D. A worn right front shock absorber

4. A heavy-truck driver complains that the steering wheel shifts noticeably during turns and produces an audible click. After verifying linkage condition, the next inspection priority is:

A. Front spring U-bolt torque

B. Cab leveling valve adjustment

C. Power steering pump output

D. Sector shaft splined connection to the pitman arm

5. The proper response when a heavy-truck wheel-end shows fluid weeping at the inboard seal but the oil bath level remains within specification is:

A. Top off the oil and continue normal service

B. Disassemble the hub, replace the seal, and inspect the wear sleeve

C. Wipe away the weeping oil and continue service if no other faults are present

D. Increase the oil capacity by adding additional fluid above the maximum mark

6. A heavy-truck driver complains of slow steering response only during very tight low-speed turns. The most likely cause is:

A. Excessive front tire pressure

B. A bent pitman arm

C. Insufficient power steering pump flow at full-lock conditions

D. Mismatched dual rear tires

7. The proper procedure for installing a heavy-truck wheel seal during hub service is:

A. Apply manufacturer-specified seal lubricant to the lip and press the seal squarely into the hub bore

B. Apply gasket sealer to the seal lip before installation

C. Heat the seal to soften it before installation

D. Reuse the original seal if it appears undamaged

8. A heavy-truck integral hydraulic steering gear's torsion bar serves the function of:

A. Limiting the maximum input shaft rotation angle

B. Providing the mechanical advantage of the recirculating ball gear ratio

C. Engaging the kingpin retention plug at full lock

D. Twisting slightly during steering input to direct fluid flow into the appropriate gear chamber

9. A heavy-truck driver complains that the chassis sits significantly tilted to one side after a load is removed. The most likely cause is:

A. A bent pitman arm

B. A faulty height control valve linkage on the affected side

C. Excessive bearing endplay on the affected wheel

D. Worn kingpin bushings

10. The proper procedure for diagnosing a heavy-truck pull complaint begins with:

A. Replacing the front shock absorbers as the first step

B. Adjusting toe at the tie rod adjusting sleeves

C. Verifying tire pressures and inspecting tires for damage and conicity

D. Disconnecting the steering linkage at the pitman arm

11. Technician A says heavy-truck disc wheels and spoke wheels use different mounting architectures and cannot be interchanged without component replacement. Technician B says spoke wheels are now the dominant standard on new heavy-truck specifications. Who is correct?

A. A only

B. B only

C. Both A and B

D. Neither A nor B

12. The proper response when a heavy-truck rear suspension air bag has been operated above its maximum rated pressure is:

A. Continue service if no visible damage is apparent

B. Reduce inflation pressure by 20 percent below specification

C. Check for damage to surrounding components

D. Replace the bag with a manufacturer-specified part

13. A heavy-truck rear suspension uses an equalizing-beam design. The function of the equalizing beam is to:

A. Limit air bag inflation pressure during heavy loads

B. Allow load transfer between the two drive axles as one axle articulates

C. Provide rear axle thrust angle adjustment

D. Maintain ride height independent of load

14. The component on a heavy-truck steer axle that maintains the kingpin's position in the axle eye through axial retention is the:

A. Steering knuckle thrust bearing

B. Upper kingpin bushing

C. Draw key, lock pin, or threaded retaining plug

D. Spring saddle locating bolt

15. A heavy-truck wheel speed sensor has been installed correctly with proper air gap. The ABS controller still reads erratic signals from this wheel. The most likely remaining cause is:

A. Excessive wheel bearing endplay allowing the hub to wobble

B. Worn pitman arm splines

C. A bent steering arm

D. Loose front spring U-bolts

16. A heavy-truck driver complains of a vibration that intensifies during cornering on either side and decreases when traveling straight. The most likely cause is:

A. Excessive caster on both front wheels

B. Mismatched dual rear tires

C. A bent pitman arm

D. Bearing wear in both front wheel-ends

17. Technician A says the FMVSS 124 standard governs accelerator control systems on heavy trucks. Technician B says FMVSS 121 governs air brake system performance requirements on heavy trucks. Who is correct?

A. A only

B. Both A and B

C. B only

D. Neither A nor B

18. A heavy-truck rear axle is being aligned and the technician finds 0.5 degree of positive thrust angle. The next step is to:

A. Replace both rear shock absorbers

B. Adjust the height control valve linkage rod

C. Replace the rear air bags

D. Adjust the upper torque rod length to bring the axle perpendicular to the chassis centerline

19. The proper inspection technique for a heavy-truck shock absorber requires the technician to:

A. Inspect the body for hydraulic fluid leakage indicating internal pressure loss

B. Apply a torque wrench to the shock mounting bolts

C. Press on the shock with a dial indicator

D. Measure shock weight on a calibrated scale

20. A heavy-truck driver complains of a clunking noise during cornering that is most pronounced when transitioning over rough pavement. The most likely cause is:

A. Excessive bearing preload at the wheel-end

B. Loose front spring U-bolts

C. A bent pitman arm

D. Worn stabilizer bar end link bushings

21. The Ackerman geometry on a heavy-truck steering system is built into the:

A. Tie rod adjusting sleeves

B. Drag link length

C. Angled steering arms on each steering knuckle

D. Pitman arm splined connection

22. A heavy-truck oil-bath wheel-end has been operated normally. The technician should verify the fluid level:

A. With the engine running at maximum RPM

B. With the truck on a level surface and the suspension settled

C. With the front wheels lifted off the ground

D. With the steering wheel at full left lock

23. The proper procedure for checking the fifth wheel kingpin lock-up clearance is to:

A. Couple the trailer and inspect for visible movement during driving

B. Use a 2-inch dial indicator at the throat opening

C. Apply maximum brake pressure during inspection

D. Use a 2-inch kingpin gauge engaged in the locked jaws

24. A heavy-truck driver complains that the truck pulls toward the right shoulder consistently during straight-line driving. After confirming alignment angles are within specification, swapping the front tires reverses the pull direction. The most likely cause is:

A. Tire conicity in one of the front tires

B. Worn drag link ball studs

C. A bent pitman arm

D. Excessive caster on the right front wheel

25. The component that filters wear particles and contamination from power steering fluid before it returns to the pump is the:

A. Pressure relief valve

B. Flow control spool

C. Return-line filter integrated into the reservoir

D. Inline check valve in the pressure hose

26. A heavy-truck integral hydraulic steering gear has been internally damaged from operating with low fluid level for an extended period. The most likely first observable symptom is:

A. Excessive bearing endplay on the front wheels

B. Reduced maximum pressure during a full-lock dead-head test

C. Erratic ABS engagement during normal driving

D. Off-center steering wheel position

27. The proper procedure for measuring heavy-truck wheel bearing endplay after TMC RP 618 adjustment is to:

A. Apply a torque wrench to the wheel nuts and read residual torque

B. Spin the wheel and time the rebound

C. Compare the spindle nut torque to specification

D. Mount a dial indicator on the hub face and pull/push the hub axially

28. A heavy-truck driver complains that the steering wheel returns slowly to center after a turn. After verifying pump pressure is normal, the next inspection priority is:

A. Caster measurement on both front wheels

B. Front spring U-bolt torque

C. Tire pressure on the front tires

D. Cab leveling valve adjustment

29. The proper procedure for inflating a heavy-truck multi-piece rim wheel is:

A. Inflate at low pressure outdoors away from any structure

B. Use a hand-held inflation chuck for better pressure control

C. Use a tire cage with a clip-on remote inflation chuck

D. Stand directly in front of the rim during inflation

30. A heavy-truck driver complains that the chassis sits noticeably lower than design ride height. After verifying air pressure is normal in the system, the next inspection priority is:

A. Power steering fluid level

B. Height control valve linkage and condition

C. Front spring U-bolt torque

D. Cab leveling shock absorber

31. The proper response when a heavy-truck driver reports excessive steering wheel free play is to:

A. Replace the steering gear immediately

B. Adjust the over-center screw on the gear cover

C. Apply additional torque to the pitman arm nut

D. Inspect external linkage components for wear before attempting any internal gear adjustment

32. A heavy-truck rear suspension uses a single-axle leaf-spring design. The most heavily stressed component during sudden braking is:

A. The leaf spring transmitting braking torque

B. The leveling valve linkage

C. The shock absorber upper mount

D. The drive axle housing

33. A heavy-truck driver complains of a high-pitched whining noise from the power steering pump that increases with engine RPM. The most likely cause is:

A. Excessive bearing preload at the wheel-end

B. Worn fifth wheel locking jaws

C. Pump cavitation from low fluid level or air ingestion in the suction line

D. A bent pitman arm

34. The proper response when a heavy-truck driver complains of sudden onset of hard steering after driving through a deep puddle is:

A. Replace the steering gear immediately

B. Verify belt tension and inspect for water-related belt slip

C. Adjust the over-center screw on the gear cover

D. Replace the front shock absorbers

35. The federal regulation that requires lockout/tagout procedures on heavy trucks is found in:

A. 49 CFR 393, Subpart F

B. 49 CFR 393, Subpart G

C. 29 CFR 1910.177

D. 29 CFR 1910.147

36. A heavy-truck driver complains of significant steering wheel free play. After verifying linkage is within specification, the technician should next inspect:

A. Front shock absorber damping

B. Wheel bearing endplay

C. Steering U-joints and intermediate shaft splines

D. Cab leveling valve adjustment

37. The proper response when a heavy-truck wheel has been operated with loose nuts before being properly retorqued is:

A. Inspect the studs for damage and replace any showing fatigue cracks

B. Apply additional torque beyond specification

C. Continue service if the nuts are now properly torqued

D. Add lock washers between the nuts and the wheel

38. A heavy-truck rear suspension uses a walking-beam design. This architecture is typically chosen for:

A. Highway tractor applications with maximum fuel economy

B. Severe off-highway service such as concrete mixers and oilfield service

C. Light medium-duty delivery trucks

D. Bus chassis with air-spring requirements

39. The proper response when a heavy-truck driver complains of brake-related pull during deceleration is:

A. Replace the front shock absorbers

B. Adjust front-end alignment angles

C. Re-torque the front spring U-bolts

D. Verify equal brake function on both sides before checking other systems

40. A heavy-truck integral hydraulic steering gear contains the following adjustment points:

A. Pitman arm torque only

B. Sector shaft lash only

C. Sector shaft lash and over-center

D. Over-center and torsion bar tension

41. The proper procedure for verifying that pre-adjusted heavy-truck wheel bearing systems are properly installed is:

A. Verify endplay with a dial indicator falls within the 0.001 to 0.005 inch range

B. Compare the spindle nut torque to a manual-adjustment specification

C. Spin the wheel and listen for noise

D. Confirm the lock washer is missing from the assembly

42. A heavy-truck driver complains of vibration that varies with cornering load — increasing during right-hand cornering and decreasing during left-hand cornering. The most likely cause is:

A. Mismatched front tire pressures

B. A worn right front wheel bearing

C. A bent pitman arm

D. Excessive caster on the right front wheel

43. The proper procedure for diagnosing a heavy-truck steering complaint begins with:

A. Adjusting the over-center screw on the gear cover

B. Replacing the power steering pump

C. Adjusting toe at the tie rod adjusting sleeves

D. Carefully interviewing the driver to identify the exact symptom and conditions

44. A heavy-truck steering gear pressure-and-flow analyzer has a manual shutoff valve that allows the technician to:

A. Lock the steering wheel in a fixed position

B. Bypass the gear during normal operation

C. Dead-head the pump for the maximum-pressure test

D. Vent excess fluid to atmosphere

45. The proper response when a heavy-truck wheel speed sensor produces erratic signals at low speeds but normal signals at highway speeds is to:

A. Verify wheel bearing endplay falls within TMC RP 618 specification

B. Replace the entire ABS controller

C. Increase tire inflation pressure

D. Adjust the cab leveling valve

46. A heavy-truck oil-bath wheel-end has fluid level visible at the upper mark on the sight glass. The technician should:

A. Add additional oil to provide reserve capacity

B. Continue normal service if no other faults are present

C. Drain and refill with a different fluid grade

D. Replace the inboard seal as a precaution

47. The proper procedure for installing a new heavy-truck front leaf spring is to:

A. Apply heat to the leaves before installation

B. Drive the truck immediately without retorque

C. Apply gasket sealer to the spring saddle interface

D. Retorque the U-bolts after several hundred miles of service

48. A heavy-truck driver complains that the truck "remembers" a previous steering input and continues drifting in that direction after the steering wheel returns to center. The most likely cause is:

A. Excessive sector shaft lash

B. A bent pitman arm

C. Binding in a kingpin pivot or steering column U-joint

D. Worn drag link ball studs

49. The proper procedure for measuring rear axle thrust angle on a heavy-truck tractor requires:

A. Calibrated alignment equipment with the truck on a level rack at curb weight

B. Lifting the rear axle off the ground for measurement

C. Disconnecting the trailer from the fifth wheel before measurement

D. Applying parking brakes during measurement

50. A heavy-truck driver complains of vibration that occurs during cornering but disappears at steady tracking. The most likely cause is:

A. Excessive front tire pressure

B. A worn drag link ball stud allowing transient looseness during steering

C. A bent pitman arm

D. Mismatched front tire diameters

# PRACTICE EXAM 8: ANSWER KEY AND EXPLANATIONS

1. B — A wheel-and-tire imbalance creating a resonance at that specific speed. Vibration that occurs at one specific speed and disappears at slightly higher and lower speeds is the diagnostic signature of an imbalance creating a rotational resonance. The frequency match between the imbalance and a chassis natural frequency produces the speed-specific symptom.

2. C — Height control valve in the air-spring system. The height control valve continuously meters air into and out of the bags to maintain constant ride height regardless of cargo load. Without this valve, the chassis attitude would change with every load adjustment, affecting alignment and headlight aim.

3. A — Worn right kingpin bushings allowing the knuckle to tilt. When camber is identical on both wheels but the included angle differs, the diagnostic signature is a worn knuckle pivot rather than a bent axle. A bent axle would shift camber and KPI in opposite directions, leaving the included angle unchanged.

4. D — Sector shaft splined connection to the pitman arm. A steering wheel that shifts during turns with audible clicking points to looseness at the gear-to-arm interface. The splined connection between the sector shaft and pitman arm can develop play if the retaining nut has worked loose, producing the symptom described.

5. B — Disassemble the hub, replace the seal, and inspect the wear sleeve. A weeping seal indicates a failed sealing interface that requires complete service. The wear sleeve on the spindle may be damaged or worn, and reusing the existing seal would simply continue the failure pattern.

6. C — Insufficient power steering pump flow at full-lock conditions. Slow steering response only during very tight low-speed turns indicates the pump cannot deliver enough flow at full-lock demand. Pump wear, belt slip at low engine RPM, or fluid issues all produce this signature where the pump runs out of capacity at peak demand.

7. A — Apply manufacturer-specified seal lubricant to the lip and press the seal squarely into the hub bore. Proper seal installation requires lubrication of the sealing lip and squared installation to prevent damage. Heat application damages the rubber compound, gasket sealer interferes with sealing function, and reuse of seals leads to weeping in service.

8. D — Twisting slightly during steering input to direct fluid flow into the appropriate gear chamber. The torsion bar links the input shaft to the worm shaft and twists slightly when the driver applies

steering torque, opening fluid passages that direct pump pressure into the appropriate gear chamber. When torque is released, the bar untwists and pressure equalizes.

9. B — A faulty height control valve linkage on the affected side. Tilt that develops after a load is removed indicates the height control valve cannot equalize air pressure between the two sides. The linkage on the affected side may be misadjusted or damaged, preventing the valve from sensing the correct chassis position.

10. C — Verifying tire pressures and inspecting tires for damage and conicity. Tire-related causes are the most common, easiest to verify, and least invasive to address. Beginning with tire inspection prevents unnecessary alignment adjustments or component replacements when the actual cause is a tire issue.

11. A — Technician A only. Disc wheels and spoke wheels use different mounting architectures and cannot be interchanged without replacing all related components. Disc wheels — not spoke wheels — are now the dominant standard on new heavy-truck specifications, so Technician B is incorrect.

12. D — Replace the bag with a manufacturer-specified part. An air bag operated above its maximum rated pressure may have sustained internal damage even if no external damage is apparent. Internal seals or reinforcement plies may have failed, and the bag's pressure-holding capability may be compromised — replacement is the only reliable response.

13. B — Allow load transfer between the two drive axles as one axle articulates. The equalizing beam pivots at its center, allowing one axle to rise while the other drops by an equal amount. This mechanical equalization keeps both axles loaded and in contact with the road regardless of road surface irregularities.

14. C — Draw key, lock pin, or threaded retaining plug. The kingpin must be retained against axial movement out of the axle eye, and three primary retention methods are used: a draw key (tapered key driven through a transverse hole), a lock pin (smaller cross pin engaging a flat or notch), or a threaded retaining plug. Each method has specific installation requirements.

15. A — Excessive wheel bearing endplay allowing the hub to wobble. With sensor air gap verified correct, the next suspect for erratic ABS readings is bearing endplay outside specification. Excessive endplay allows the hub to wobble axially, dynamically changing the sensor-to-tone-ring relationship and producing erratic signals.

16. D — Bearing wear in both front wheel-ends. Vibration that intensifies during cornering on either side indicates bearing wear in both front wheels, with the cornering load on each side intensifying the affected bearing's noise and vibration. Single-bearing wear would produce vibration on only one cornering direction.

17. B — Both A and B. FMVSS 124 governs accelerator control systems on heavy trucks, requiring controlled return-to-idle behavior. FMVSS 121 governs air brake systems and applies to nearly every Class 7 and Class 8 truck operating with air brakes.

18. D — Adjust the upper torque rod length to bring the axle perpendicular to the chassis centerline. On air-spring suspensions, adjustable upper torque rods provide rear-axle alignment correction. Lengthening or shortening the rod shifts the axle laterally and rotates it angularly to bring it perpendicular to the chassis centerline.

19. A — Inspect the body for hydraulic fluid leakage indicating internal pressure loss. The most reliable visual inspection of a heavy-truck shock absorber is examining the body for hydraulic fluid leakage. A weeping shock has lost internal pressure and damping capability, even if its external mounting appears intact.

20. D — Worn stabilizer bar end link bushings. A clunking noise during cornering and uneven pavement transitions is the diagnostic signature of worn stabilizer bar end link bushings. The bushings allow the bar to disengage partially, producing the cornering-specific noise.

21. C — Angled steering arms on each steering knuckle. Ackerman geometry uses angled steering arms to push the inside wheel through a greater angle than the outside wheel during a turn, allowing each wheel to follow its proper arc radius without scrubbing. The arm angles are designed into the knuckle geometry, not adjusted at the linkage.

22. B — With the truck on a level surface and the suspension settled. Oil-bath fluid level must be checked with the truck on a level surface to provide an accurate reading. Other conditions (engine running, wheels lifted, full lock) all affect the fluid level reading in the sight glass.

23. D — Use a 2-inch kingpin gauge engaged in the locked jaws. The 2-inch kingpin gauge is the standard tool for checking lock-up clearance in the locked position. The gauge fits where the trailer kingpin would sit, allowing the technician to feel for play and confirm the clearance falls within specification.

24. A — Tire conicity in one of the front tires. When swapping front tires reverses the pull direction, the cause is tied to the tire itself rather than alignment, brakes, or suspension. Conicity creates a constant lateral force at the contact patch that follows whichever side the affected tire is mounted on.

25. C — Return-line filter integrated into the reservoir. The return-line filter traps wear particles and contamination before fluid re-enters the pump suction. This protection extends pump and gear seal life by preventing abrasive material from circulating through the pressurized system.

26. B — Reduced maximum pressure during a full-lock dead-head test. Internal damage from low fluid level operation typically produces seal degradation that allows fluid to bypass between chambers. The first measurable indication is reduced peak pressure during the dead-head test, where the gear cannot retain fluid pressure during full-lock.

27. D — Mount a dial indicator on the hub face and pull/push the hub axially. TMC RP 618 specifies dial indicator measurement after adjustment because subjective feel produces inconsistent results.

The indicator captures the precise axial movement of the hub relative to the spindle, confirming the 0.001 to 0.005-inch endplay specification.

28. A — Caster measurement on both front wheels. Slow return-to-center after a turn indicates inadequate self-centering force, which positive caster provides. With normal hydraulic pressure ruled out, low caster is the most likely cause.

29. C — Use a tire cage with a clip-on remote inflation chuck. OSHA 29 CFR 1910.177 requires multi-piece rim inflation inside a restraining device with a clip-on remote inflation chuck specifically to position the technician outside the trajectory zone. Multi-piece rim component failures during inflation can be fatal without these protections.

30. B — Height control valve linkage and condition. Chassis ride height below specification with normal air pressure points to a control circuit fault. The height control valve linkage may be misadjusted, damaged, or stuck, preventing the valve from inflating the bags to the proper level.

31. D — Inspect external linkage components for wear before attempting any internal gear adjustment. External linkage wear (drag link, tie rod ends, kingpin bushings) is far more common than internal gear wear and should be eliminated first. Adjusting the gear without addressing external wear produces a setting that drifts as soon as the truck moves.

32. A — The leaf spring transmitting braking torque. Because leaf springs on a single-axle drive truck transmit driving torque, they are heavily loaded during sudden braking events when stress reversals occur. The springs cycle through stress reversals that fatigue the steel, making them the most heavily stressed component during braking.

33. C — Pump cavitation from low fluid level or air ingestion in the suction line. A whining pump that intensifies with engine RPM is the classic signature of cavitation, where vapor bubbles form in the suction side because fluid is insufficient or air is being drawn in. The whine intensifies because cavitation worsens at higher pump speeds.

34. B — Verify belt tension and inspect for water-related belt slip. Sudden onset of hard steering after driving through water typically traces to a wet drive belt slipping under load. The slip reduces pump output during turning maneuvers, producing the rapid onset of hard steering until the belt dries.

35. D — 29 CFR 1910.147. This OSHA regulation governs the control of hazardous energy through lockout/tagout procedures. It applies to heavy-truck servicing whenever the engine could be started or systems could be inadvertently energized during the work.

36. C — Steering U-joints and intermediate shaft splines. With external linkage cleared, the next suspect is the rotational path between the column and the steering gear. Worn U-joints accumulate rotational lag that the driver perceives as steering wheel free play, and this wear progresses gradually over time.

37. A — Inspect the studs for damage and replace any showing fatigue cracks. Loose-nut operation flexes the studs under each wheel rotation, initiating fatigue cracks that may not be visible without close inspection. A wheel run on loose nuts is a candidate for stud replacement, not just retorque.

38. B — Severe off-highway service such as concrete mixers and oilfield service. Walking-beam suspensions use heavy rigid construction with rubber compliance pads designed to handle the impact loads of severe off-highway operation. They sacrifice ride quality for maximum equalization and durability.

39. D — Verify equal brake function on both sides before checking other systems. Brake-related pull is a brake system fault, not an alignment or suspension fault. The diagnostic priority is to confirm equal brake performance side-to-side before considering other potential causes.

40. C — Sector shaft lash and over-center. Two adjustment points exist on most integral hydraulic steering gears: sector shaft lash adjustment (gear tooth mesh tightness) and over-center adjustment (rotational drag at the gear's straight-ahead position). Both are critical to proper gear function.

41. A — Verify endplay with a dial indicator falls within the 0.001 to 0.005 inch range. The TMC RP 618 endplay specification applies to both manually adjusted and pre-adjusted hub systems. Pre-adjusted systems use a precision spacer to control endplay automatically, but verification with a dial indicator confirms the specification has been met.

42. B — A worn right front wheel bearing. Vibration that intensifies during right-side cornering and decreases during left-side cornering indicates a bearing that loads more heavily during right-side cornering. The cornering load transfers additional weight to the right wheel, intensifying noise from the worn bearing.

43. D — Carefully interviewing the driver to identify the exact symptom and conditions. Effective steering diagnosis depends on understanding exactly what the driver is experiencing — pull, wander, hard steering, free play, vibration, noise — and under what conditions. The interview narrows the diagnostic focus before any inspection or testing begins.

44. C — Dead-head the pump for the maximum-pressure test. The shutoff valve allows the technician to briefly close off flow from the pump to the gear, forcing the pump to produce its maximum pressure capability. This test isolates pump output performance from gear-related variables.

45. A — Verify wheel bearing endplay falls within TMC RP 618 specification. At low speeds, hub wobble produces detectable variation in the sensor-to-tone-ring air gap, generating erratic ABS readings. At highway speed, the rotational momentum stabilizes the hub motion and the ABS signal becomes consistent.

46. B — Continue normal service if no other faults are present. A reading at the upper mark on the sight glass indicates the oil-bath system is operating with proper fluid level. If no other faults are visible during inspection, the wheel-end is functioning as designed.

47. D — Retorque the U-bolts after several hundred miles of service. New U-bolts on a new spring assembly must be retorqued because the clamped spring stack settles under operating loads, and the initial torque relaxes as the stack settles. Failure to retorque produces loose U-bolts that allow axle wind-up.

48. C — Binding in a kingpin pivot or steering column U-joint. Memory steer is caused by binding components that prevent the steering system from naturally returning to its centered position. The binding holds the system in the last steering direction even after the driver releases input.

49. A — Calibrated alignment equipment with the truck on a level rack at curb weight. Thrust angle measurement requires a calibrated alignment system with the truck at curb weight on a level rack. Other approaches do not provide the geometric reference needed for accurate measurement.

50. B — A worn drag link ball stud allowing transient looseness during steering. A vibration that occurs only during cornering but disappears at steady tracking is the signature of a worn linkage joint that becomes loose only under transient loads. The looseness allows the wheel to deviate briefly during steering inputs.