SECTION H: T8 — PREVENTIVE MAINTENANCE INSPECTION SIMULATION EXAMS

Section H contains eight full-length simulation exams for the T8 — Preventive Maintenance Inspection certification test. Each simulation contains 50 scored questions with a recommended completion time of 75 minutes — matching the official ASE T8 examination scored question count exactly. T8 covers the complete preventive maintenance inspection process for medium and heavy-duty commercial trucks, from engine and powertrain inspection through brake and chassis verification to DOT compliance and inspection documentation, integrating knowledge from across the entire Medium/Heavy Truck series into systematic inspection practice.

Every T8 simulation in this section delivers questions across the eight official ASE domains in the precise weighting used on the actual test:

Domain	Topic	Questions per Simulation
A	Engine Systems	14
B	Cab and Hood	6
C	Electrical/Electronic Systems	5
D	Frame and Chassis	6
E	Drive Train	4
F	Brakes	8
G	Steering and Suspension	4
H	Tires and Wheels	3
	Total	**50**

The eight simulations together provide 400 practice questions covering the complete T8 task list. Domain A (Engine Systems) at 28 percent and Domain F (Brakes) at 16 percent together account for 44 percent of every test, reflecting the central role that engine condition verification and brake system inspection play in heavy-duty truck preventive maintenance. Pay particular attention to engine fluid inspection and

sampling procedures, cooling system inspection including SCA testing, air intake and exhaust system verification, fuel system inspection including DEF system checks, electrical system PM checks including battery and charging verification, frame and crossmember inspection for cracks and damage, driveline inspection including U-joint and slip yoke verification, complete air brake system inspection per FMCSA requirements, steering linkage and suspension component inspection per TMC RP, and tire and wheel inspection including tread depth, pressure verification, and lug nut torque verification.

The questions use all five ASE question formats in proportions that match the real exam: direct questions, Technician A and Technician B questions, EXCEPT questions, LEAST likely questions, and completion questions. T8-specific question patterns appear throughout — interpreting inspection findings against pass/fail criteria, recognizing wear patterns that indicate developing failures, applying FMCSA out-of-service criteria to inspection results, distinguishing between PM-correctable conditions and conditions requiring additional service, recognizing the difference between TMC RP recommendations and DOT requirements, and applying systematic inspection sequences to ensure complete coverage of the inspection task list.

The content reflects current ASE T8 task list specifications, including current heavy-duty truck PM inspection procedures from Daimler, Volvo, Paccar, Navistar, and Mack, FMCSA compliance requirements including driver vehicle inspection reports and roadside inspection criteria, TMC Recommended Practices for chassis lubrication, fluid analysis, and component inspection, EPA emissions system inspection requirements including DEF system verification, electronic logging device (ELD) and telematics integration with PM data, and the diagnostic procedures that distinguish PM-detectable conditions from complaint-based failures requiring further diagnosis.

Each simulation in this section progressively builds your inspection reasoning across the full T8 task list. Earlier exams establish a strong baseline across all eight domains. Later exams introduce more complex multi-system inspection scenarios, partial-information judgment situations, and standards-based reasoning that reflect the depth of knowledge required for confident performance on the real exam. Track your performance by domain to identify where your knowledge is strongest and where additional review will deliver the highest return on your study time.

The real ASE T8 exam is 50 scored questions. Across this section you have 400 practice questions ahead of you. Use every one of them — and remember that T8 represents the integration point of all your medium/heavy truck knowledge, so strong T8 performance reflects mastery of the entire Medium/Heavy Truck series.

PRACTICE EXAM 1: T8 SIMULATION (50 QUESTIONS)

1. The proper procedure for checking engine oil level on a heavy-duty diesel engine is:

A. With the engine running at idle

B. Immediately after engine shutdown

C. With the engine off and after sufficient drain-down time

D. With the engine at operating temperature only

2. A heavy-duty diesel engine PM inspection finds engine oil that appears milky white. The most likely cause is:

A. Coolant contamination of the engine oil

B. Normal engine oil aging

C. Fuel contamination of the engine oil

D. Excessive oil change interval

3. Tech A says heavy-duty diesel engine air filter restriction can be measured by a gauge mounted on the air intake system. Tech B says excessive air filter restriction reduces engine power and fuel economy. Who is correct?

A. Tech A only

B. Both Tech A and Tech B

C. Tech B only

D. Neither Tech A nor Tech B

4. A heavy-duty diesel engine PM inspection finds the cooling system pressure cap fails to hold pressure. The proper action is:

A. Add coolant to compensate for pressure loss

B. Continue service and monitor for additional pressure issues

C. Increase coolant concentration to reduce pressure requirement

D. Replace the pressure cap with the correct OEM specification

5. The proper coolant level inspection on a heavy-duty diesel engine is performed:

A. With the engine cold and at the OEM-specified reference point

B. With the engine at operating temperature only

C. With the engine running at idle

D. Immediately after a hard run cycle

6. A heavy-duty diesel engine fuel filter PM inspection should include:

A. Filter element replacement only at fixed mileage intervals

B. Visual inspection of filter element appearance only

C. Filter restriction measurement and water separator drainage

D. Filter housing replacement at every PM service

7. Tech A says heavy-duty diesel engine DEF (Diesel Exhaust Fluid) system PM inspection should verify DEF level and quality. Tech B says DEF quality testing uses a refractometer to measure urea concentration. Who is correct?

A. Tech A only

B. Both Tech A and Tech B

C. Tech B only

D. Neither Tech A nor Tech B

8. A heavy-duty diesel engine air filter restriction gauge shows the indicator at the maximum red zone. The proper action is:

A. Continue service because the gauge may be inaccurate

B. Reset the gauge indicator and continue service

C. Clean the existing air filter and reset the gauge

D. Replace the air filter element with new specification

9. The proper procedure for inspecting heavy-duty diesel engine drive belts is:

A. Visual inspection for cracks, glazing, and wear plus tension verification

B. Visual inspection only without tension verification

C. Tension verification only without visual inspection

D. Replacement at fixed intervals regardless of condition

10. A heavy-duty diesel engine PM inspection finds the engine oil filter showing visible damage to the filter housing. The proper action is:

A. Continue service and monitor for oil leak development

B. Tighten the filter housing to specification

C. Replace the filter element and inspect for cause of damage

D. Replace only the damaged housing without filter replacement

11. Tech A says heavy-duty diesel engine cooling system inspection should include SCA (supplemental coolant additive) level testing. Tech B says inadequate SCA levels can cause cylinder liner cavitation damage. Who is correct?

A. Both Tech A and Tech B

B. Tech A only

C. Tech B only

D. Neither Tech A nor Tech B

12. A heavy-duty diesel engine PM inspection finds excessive blow-by from the crankcase ventilation system. The most likely cause is:

A. Excessive engine oil level

B. Restricted air filter

C. Worn engine internal components

D. Failed engine thermostat

13. The proper inspection for heavy-duty diesel engine charge air cooler condition includes:

A. Pressure testing only at OEM-specified intervals

B. Replacement at fixed mileage intervals

C. Visual inspection only without further verification

D. Visual inspection plus leak testing for system integrity

14. A heavy-duty diesel engine PM inspection finds black smoke at the exhaust under load. The most likely cause is:

A. Failed cooling system unrelated to combustion

B. Incomplete combustion from air or fuel system issues

C. Failed exhaust system unrelated to combustion

D. Failed electrical system unrelated to combustion

15. The proper inspection for heavy-duty truck cab door operation includes:

A. Latch engagement, hinge operation, and door alignment verification

B. Latch engagement only

C. Hinge operation only

D. Door alignment only

16. A heavy-duty truck cab PM inspection should include:

A. Mirror condition only

B. Seat operation only

C. Mirror condition, seat operation, seat belt condition, and cab structural integrity

D. Cab structural integrity only

17. Tech A says heavy-duty truck windshield wiper blade inspection should be part of every PM service. Tech B says windshield washer fluid level and operation should also be verified. Who is correct?

A. Tech A only

B. Both Tech A and Tech B

C. Tech B only

D. Neither Tech A nor Tech B

18. A heavy-duty truck cab PM inspection finds a cracked windshield. The proper action is:

A. Continue service because the crack does not affect operation

B. Document the crack and continue service

C. Apply temporary repair to prevent crack progression

D. Determine if the crack meets DOT removal-from-service criteria

19. The proper inspection for heavy-duty truck cab mirrors includes:

A. Mirror condition, mounting integrity, and adjustment capability

B. Mirror condition only

C. Mounting integrity only

D. Adjustment capability only

20. A heavy-duty truck hood PM inspection should include:

A. Hood operation only

B. Hood structural integrity only

C. Hood operation, latch security, and structural integrity

D. Hood paint condition only

21. The proper PM inspection for heavy-duty truck batteries includes:

A. Visual inspection only

B. Open-circuit voltage measurement only

C. Load testing only

D. Visual inspection, open-circuit voltage, and load testing as needed

22. A heavy-duty truck PM inspection finds corroded battery terminal connections. The proper action is:

A. Continue service because corrosion is normal

B. Clean and apply protective treatment to the connections

C. Replace the batteries because of corrosion

D. Replace the battery cables because of corrosion

23. Tech A says heavy-duty truck PM inspection should include scan tool retrieval of stored fault codes. Tech B says stored codes provide diagnostic information about developing issues. Who is correct?

A. Both Tech A and Tech B

B. Tech A only

C. Tech B only

D. Neither Tech A nor Tech B

24. A heavy-duty truck PM inspection finds a headlight inoperative. The proper action is:

A. Document the failure and continue service

B. Note the failure for later attention

C. Repair or replace before returning to service

D. Continue service because one headlight is sufficient

25. The proper PM inspection for heavy-duty truck wiring harness includes:

A. Replacement at fixed mileage intervals regardless of condition

B. Visual inspection only without functional testing

C. Functional testing only without visual inspection

D. Visual inspection for damage, chafing, and connector integrity

26. The proper PM inspection for heavy-duty truck frame rails includes:

A. Visual inspection for cracks, deformation, and corrosion

B. Visual inspection for paint condition only

C. Pressure testing for structural integrity

D. Replacement at fixed mileage intervals

27. A heavy-duty truck frame PM inspection finds a hairline crack at a high-stress area. The proper action is:

A. Apply paint to seal the crack and continue service

B. Drill stop holes at the crack ends and continue service

C. Document for OEM-specified repair or replacement

D. Continue service and monitor crack progression

28. Tech A says heavy-duty truck PM inspection should include crossmember inspection. Tech B says crossmember failures can affect frame integrity and load distribution. Who is correct?

A. Tech A only

B. Both Tech A and Tech B

C. Tech B only

D. Neither Tech A nor Tech B

29. A heavy-duty truck frame PM inspection finds excessive flex at the fifth wheel mounting area. The most likely cause is:

A. Normal frame flex during operation

B. Excessive lubrication at the fifth wheel

C. Loose fifth wheel mounting bolts

D. Crack development at the fifth wheel mounting area

30. The proper inspection for heavy-duty truck frame fasteners includes:

A. Verification of presence, tightness, and condition

B. Visual inspection only without tightness verification

C. Replacement at fixed intervals regardless of condition

D. Inspection only at major service events

31. A heavy-duty truck PM inspection finds debris accumulated on top of frame rails. The proper action is:

A. Continue service because debris does not affect frame operation

B. Remove debris and inspect frame surfaces for damage or corrosion

C. Apply lubricant over the debris to prevent corrosion

D. Document debris and continue service

32. The proper PM inspection for heavy-duty truck driveshaft U-joints includes:

A. Visual inspection only without movement check

B. Lubrication only without inspection

C. Replacement at fixed mileage intervals

D. Visual inspection plus checking for play through movement

33. A heavy-duty truck driveshaft PM inspection finds excessive play at the U-joint. The proper action is:

A. Replace the U-joint or driveshaft per OEM specification

B. Lubricate the U-joint and continue service

C. Continue service and monitor for additional play development

D. Replace only when complete failure occurs

34. Tech A says heavy-duty truck transmission PM inspection should include fluid level and condition verification. Tech B says fluid analysis can identify developing issues before complete failure. Who is correct?

A. Tech A only

B. Tech B only

C. Both Tech A and Tech B

D. Neither Tech A nor Tech B

35. A heavy-duty truck drive axle PM inspection finds a small oil leak at the differential. The proper action is:

A. Continue service because small leaks are normal

B. Identify the leak source and determine repair requirements

C. Add oil to compensate for the leak

D. Replace the entire differential assembly

36. The proper PM inspection for heavy-duty truck air brake systems includes:

A. Pressure testing only at OEM-specified intervals

B. Visual inspection only without functional testing

C. Functional testing only without component inspection

D. Air system buildup, leakage, and component inspection per FMCSA requirements

37. A heavy-duty truck PM inspection finds air brake pushrod travel exceeding the readjustment limit. The proper action is:

A. Adjust or replace per FMCSA requirements before returning to service

B. Continue service because manual adjustment is sufficient

C. Document for next scheduled service

D. Continue service and monitor for further travel increase

38. Tech A says heavy-duty truck air brake system buildup time should meet FMCSA specifications. Tech B says inadequate buildup time can result in out-of-service status during inspection. Who is correct?

A. Tech A only

B. Tech B only

C. Both Tech A and Tech B

D. Neither Tech A nor Tech B

39. A heavy-duty truck brake lining PM inspection finds lining thickness near the OEM-specified replacement limit. The proper action is:

A. Continue service because the lining is still functional

B. Replace the linings before returning to service

C. Document the wear and continue service

D. Adjust the brakes to compensate for the wear

40. The proper inspection for heavy-duty truck air brake chamber operation is:

A. Visual inspection only without functional testing

B. Functional testing only without visual inspection

C. Replacement at fixed mileage intervals

D. Visual inspection plus stroke length verification

41. A heavy-duty truck PM inspection finds an air leak in the brake system. The leak rate is within FMCSA limits. The proper action is:

A. Document the leak and identify repair requirements

B. Continue service because the leak is within FMCSA limits

C. Adjust the air system to compensate for the leak

D. Increase compressor output to compensate for the leak

42. Tech A says heavy-duty truck brake drum PM inspection should include diameter measurement. Tech B says drum diameter measurement determines wear status and OEM service limits. Who is correct?

A. Tech A only

B. Tech B only

C. Both Tech A and Tech B

D. Neither Tech A nor Tech B

43. A heavy-duty truck PM inspection finds the parking brake fails to hold the vehicle on a grade. The proper action is:

A. Continue service because the parking brake is supplemental

B. Determine repair requirements before returning to service

C. Document for next scheduled service

D. Apply additional parking brake force to compensate

44. The proper PM inspection for heavy-duty truck steering linkage includes:

A. Visual inspection only without movement check

B. Lubrication only without inspection

C. Replacement at fixed mileage intervals

D. Visual inspection plus movement and play verification

45. A heavy-duty truck PM inspection finds excessive play at a steering tie rod end. The proper action is:

A. Replace the tie rod end per OEM specification

B. Lubricate and continue service

C. Tighten the connection to remove play

D. Document and continue service

46. Tech A says heavy-duty truck suspension PM inspection should include leaf spring inspection. Tech B says broken or fractured spring leaves require replacement before returning to service. Who is correct?

A. Tech A only

B. Tech B only

C. Both Tech A and Tech B

D. Neither Tech A nor Tech B

47. A heavy-duty truck PM inspection finds excessive vertical play at the kingpin. The proper action is:

A. Lubricate and continue service

B. Document and continue service

C. Adjust the kingpin assembly

D. Replace kingpins per OEM specification

48. The proper PM inspection for heavy-duty truck tires includes:

A. Tread depth measurement only

B. Tread depth, sidewall condition, inflation pressure, and tread pattern

C. Inflation pressure measurement only

D. Visual inspection only without measurements

49. A heavy-duty truck PM inspection finds a steer tire with tread depth at 2/32 inch. The proper action is:

A. Replace the tire before returning to service per FMCSA requirements

B. Continue service because tread depth is acceptable

C. Rotate the tire to a non-steer position

D. Document the tread depth for future reference

50. Tech A says heavy-duty truck wheel PM inspection should include lug nut torque verification. Tech B says lug nut re-torque is required after wheel installation. Who is correct?

A. Tech A only

B. Tech B only

C. Both Tech A and Tech B

D. Neither Tech A nor Tech B

PRACTICE EXAM 1: ANSWER KEY AND EXPLANATIONS

1. C — With the engine off and after sufficient drain-down time. Engine oil level is checked with the engine off and after sufficient drain-down time (typically 10-15 minutes) to allow oil to return to the pan, providing accurate level reading. Hot or running engine readings produce false low readings due to oil being distributed throughout the engine.

2. A — Coolant contamination of the engine oil. Milky white engine oil is the classic signature of coolant contamination, where the white appearance results from coolant emulsified into the oil. This typically traces to head gasket failure, cracked head, or other internal leak between the cooling system and oil galleries.

3. B — Both Tech A and Tech B. Heavy-duty diesel engine air filter restriction can be measured by a gauge mounted on the air intake system, providing direct indication of filter condition. Excessive air filter restriction reduces engine power and fuel economy by limiting airflow to combustion, requiring filter service when restriction reaches the indicator threshold.

4. D — Replace the pressure cap with the correct OEM specification. A pressure cap that fails to hold pressure cannot maintain proper cooling system pressure, which raises the boiling point of the coolant and enables higher operating temperatures. Replacement with correct OEM specification is required to restore proper cooling system function.

5. A — With the engine cold and at the OEM-specified reference point. Coolant level inspection is performed with the engine cold and at the OEM-specified reference point (typically minimum and maximum marks on the surge tank), providing accurate level reading without thermal expansion affecting the measurement. Hot engine readings give false high readings.

6. C — Filter restriction measurement and water separator drainage. Heavy-duty diesel engine fuel filter PM inspection includes filter restriction measurement (verifying flow capacity) and water separator drainage (removing accumulated water to prevent fuel system contamination). Visual inspection alone misses internal restriction conditions.

7. B — Both Tech A and Tech B. Heavy-duty diesel engine DEF system PM inspection should verify DEF level (sufficient quantity for operation) and quality (proper urea concentration). DEF quality testing uses a refractometer to measure urea concentration, with proper concentration (typically 32.5%) being critical to DEF system operation.

8. D — Replace the air filter element with new specification. An air filter restriction gauge at maximum red zone indicates the filter is fully restricted, requiring replacement to restore proper

airflow. Cleaning is not adequate for fully restricted filters; reset without replacement leaves the restriction condition in place.

9. A — Visual inspection for cracks, glazing, and wear plus tension verification. Heavy-duty diesel engine drive belt inspection includes visual inspection (cracks, glazing, missing chunks) and tension verification (proper tension for adequate drive without slippage). Both inspection elements identify developing belt issues before failure.

10. C — Replace the filter element and inspect for cause of damage. Visible damage to the filter housing requires filter element replacement and inspection to identify the cause of damage (impact, vibration, improper installation). Continued service risks oil leak development and inadequate filtration.

11. A — Both Tech A and Tech B. Heavy-duty diesel engine cooling system inspection should include SCA level testing because SCA depletes during operation and requires replenishment. Inadequate SCA levels can cause cylinder liner cavitation damage by failing to maintain the protective film on liner surfaces.

12. C — Worn engine internal components. Excessive blow-by from the crankcase ventilation system indicates excessive combustion gas leakage past the piston rings, with worn engine internal components (rings, cylinders, valves) being the most common cause. This condition typically indicates significant internal wear requiring further diagnosis.

13. D — Visual inspection plus leak testing for system integrity. Heavy-duty diesel engine charge air cooler inspection includes visual inspection (external damage, fin condition) plus leak testing (verifying system integrity under pressure), with both elements identifying issues that affect engine performance and emissions.

14. B — Incomplete combustion from air or fuel system issues. Black smoke at the exhaust under load indicates incomplete combustion, with air system issues (restricted intake, low boost) or fuel system issues (excessive fuel delivery, injector problems) being the most common causes. Diagnosis identifies the specific cause.

15. A — Latch engagement, hinge operation, and door alignment verification. Cab door operation inspection includes latch engagement (security verification), hinge operation (smooth movement), and door alignment (proper closure without binding). All three elements are required for safe cab door operation.

16. C — Mirror condition, seat operation, seat belt condition, and cab structural integrity. Heavy-duty truck cab PM inspection covers multiple safety-critical elements including mirror condition (visibility), seat operation (driver position), seat belt condition (occupant protection), and cab structural integrity (overall cab safety). Single-element inspection misses important safety items.

17. B — Both Tech A and Tech B. Heavy-duty truck windshield wiper blade inspection should be part of every PM service because blade condition directly affects visibility in adverse weather.

Windshield washer fluid level and operation should also be verified to ensure proper visibility maintenance during operation.

18. D — Determine if the crack meets DOT removal-from-service criteria. A cracked windshield requires evaluation against DOT removal-from-service criteria (size, location, visibility impact) to determine if the truck can return to service. Some cracks require immediate replacement; others may be acceptable for continued service.

19. A — Mirror condition, mounting integrity, and adjustment capability. Heavy-duty truck cab mirror inspection includes mirror condition (glass and frame), mounting integrity (secure attachment), and adjustment capability (driver positioning), with all elements being important for proper visibility and driver positioning.

20. C — Hood operation, latch security, and structural integrity. Heavy-duty truck hood PM inspection includes hood operation (raise and lower function), latch security (preventing unintended opening), and structural integrity (preventing failure during operation). Paint condition is cosmetic, not functional.

21. D — Visual inspection, open-circuit voltage, and load testing as needed. Heavy-duty truck battery PM inspection includes visual inspection (terminal condition, case integrity), open-circuit voltage measurement (state of charge), and load testing as needed to verify capacity. Comprehensive inspection identifies developing issues.

22. B — Clean and apply protective treatment to the connections. Corroded battery terminal connections require cleaning to restore electrical contact and protective treatment to prevent recurrence. Battery or cable replacement is not required if the underlying components are functional after cleaning.

23. A — Both Tech A and Tech B. Heavy-duty truck PM inspection should include scan tool retrieval of stored fault codes because codes provide diagnostic information not visible through inspection. Stored codes provide diagnostic information about developing issues, allowing service before issues progress to failures.

24. C — Repair or replace before returning to service. An inoperative headlight requires repair or replacement before returning to service per DOT requirements, since heavy-duty trucks must have functional headlights for safe operation. Documentation alone is not sufficient for safety items.

25. D — Visual inspection for damage, chafing, and connector integrity. Heavy-duty truck wiring harness PM inspection includes visual inspection for damage (insulation cuts, breaks), chafing (wear from movement), and connector integrity (secure connections, corrosion). This identifies developing electrical issues.

26. A — Visual inspection for cracks, deformation, and corrosion. Heavy-duty truck frame rail PM inspection includes visual inspection for cracks (stress fractures), deformation (impact or load damage), and corrosion (environmental damage). All three conditions affect structural integrity.

27. C — Document for OEM-specified repair or replacement. A frame crack at a high-stress area requires OEM-specified repair or replacement, since improper repair (paint, stop holes) can mask the issue and lead to catastrophic failure. OEM procedures specify acceptable repair methods.

28. B — Both Tech A and Tech B. Heavy-duty truck PM inspection should include crossmember inspection because crossmembers contribute to overall frame integrity. Crossmember failures can affect frame integrity and load distribution, with cracks or damage in crossmembers requiring repair before continued service.

29. D — Crack development at the fifth wheel mounting area. Excessive flex at the fifth wheel mounting area indicates structural integrity loss, with crack development being the most likely cause. The fifth wheel mounting area experiences high stress during operation and is a known location for fatigue cracking.

30. A — Verification of presence, tightness, and condition. Frame fastener inspection includes verification of presence (no missing fasteners), tightness (proper torque), and condition (no damage or corrosion). All three elements are required for proper frame structural integrity.

31. B — Remove debris and inspect frame surfaces for damage or corrosion. Debris on frame rails should be removed and the underlying surface inspected for damage or corrosion that the debris may have hidden. Lubricant over debris does not address the underlying issues and can mask developing corrosion.

32. D — Visual inspection plus checking for play through movement. Heavy-duty truck driveshaft U-joint PM inspection includes visual inspection (rust, damage, missing grease) plus checking for play through movement (axial and rotational play). Both elements identify developing U-joint issues.

33. A — Replace the U-joint or driveshaft per OEM specification. Excessive play at a U-joint requires replacement of the U-joint or driveshaft per OEM specification, since play indicates internal wear that cannot be corrected through lubrication. Continued service risks complete U-joint failure with potential vehicle damage.

34. C — Both Tech A and Tech B. Heavy-duty truck transmission PM inspection should include fluid level and condition verification because transmission fluid degrades over time. Fluid analysis can identify developing issues (wear metal contamination, oxidation) before complete failure, supporting preventive maintenance scheduling.

35. B — Identify the leak source and determine repair requirements. A small oil leak at the differential requires identification of the leak source and determination of repair requirements based on leak size and location. Continuing service risks oil loss and component damage; addition of oil masks the underlying issue.

36. D — Air system buildup, leakage, and component inspection per FMCSA requirements. Heavy-duty truck air brake system PM inspection follows FMCSA requirements including air system

buildup time, leakage rate testing, and component inspection. Compliance with FMCSA requirements is mandatory for safe operation and roadside inspection.

37. A — Adjust or replace per FMCSA requirements before returning to service. Pushrod travel exceeding the readjustment limit is an FMCSA out-of-service condition, requiring adjustment or replacement before returning to service. Manual adjustment alone may not be sufficient depending on the specific condition.

38. C — Both Tech A and Tech B. Heavy-duty truck air brake system buildup time must meet FMCSA specifications (typically 0 to 90 psi within 3 minutes at idle). Inadequate buildup time can result in out-of-service status during inspection, with FMCSA enforcement applying to roadside inspections.

39. B — Replace the linings before returning to service. Brake linings near the OEM-specified replacement limit require replacement before returning to service to prevent reaching the limit during operation. Continued service risks linings reaching the wear limit unexpectedly, potentially causing brake failure.

40. D — Visual inspection plus stroke length verification. Heavy-duty truck air brake chamber inspection includes visual inspection (chamber condition, clamp band integrity) and stroke length verification (proper pushrod travel). Both elements identify developing brake chamber issues.

41. A — Document the leak and identify repair requirements. An air leak in the brake system, even within FMCSA limits, indicates a developing issue that should be documented and identified for repair. Continued service without addressing the leak risks progression beyond FMCSA limits.

42. C — Both Tech A and Tech B. Heavy-duty truck brake drum PM inspection should include diameter measurement to verify wear status against OEM specifications. Drum diameter measurement determines wear status and OEM service limits, with drums beyond limit requiring replacement before continued service.

43. B — Determine repair requirements before returning to service. A parking brake that fails to hold the vehicle on a grade is an out-of-service condition requiring repair before returning to service. The parking brake is a primary safety system, not a supplemental system.

44. D — Visual inspection plus movement and play verification. Heavy-duty truck steering linkage PM inspection includes visual inspection (component condition) plus movement and play verification (mechanical wear identification). Both elements identify developing steering issues.

45. A — Replace the tie rod end per OEM specification. Excessive play at a steering tie rod end requires replacement per OEM specification, since play indicates internal wear that cannot be corrected through lubrication or tightening. Steering linkage wear is a safety issue requiring proper repair.

46. C — Both Tech A and Tech B. Heavy-duty truck suspension PM inspection should include leaf spring inspection because spring condition affects vehicle handling and load capacity. Broken or fractured spring leaves require replacement before returning to service per safety requirements.

47. D — Replace kingpins per OEM specification. Excessive vertical play at the kingpin indicates kingpin wear beyond service limits, requiring replacement per OEM specification. Steering kingpin wear is a safety issue that cannot be corrected through lubrication or adjustment.

48. B — Tread depth, sidewall condition, inflation pressure, and tread pattern. Heavy-duty truck tire PM inspection includes tread depth (wear status), sidewall condition (structural integrity), inflation pressure (proper operating condition), and tread pattern (wear pattern analysis). Comprehensive inspection identifies developing tire issues.

49. A — Replace the tire before returning to service per FMCSA requirements. FMCSA requires steer tire tread depth of at least 4/32 inch; tread at 2/32 inch is below this minimum and is an out-of-service condition requiring replacement before returning to service. Steer tire tread depth requirements are stricter than other positions.

50. C — Both Tech A and Tech B. Heavy-duty truck wheel PM inspection should include lug nut torque verification because proper torque is critical for wheel security. Lug nut re-torque is required after wheel installation (typically 50-100 miles) because initial seating reduces clamp load, requiring verification of specification torque.