PRACTICE EXAM 12: ASE T8 PMI SIMULATION

1. A technician performing PMI inspects a medium-duty truck's hydraulic brake master cylinder and finds the reservoir at the MIN fill line. The most likely cause is:

A. Normal evaporation during extended service intervals

B. Overfilled reservoir at the previous service that has settled to correct level

C. Incorrect brake fluid specification producing volume change during operation

D. Brake pad wear pulling additional fluid into the caliper pistons, or system leakage requiring investigation

2. The correct procedure for verifying a commercial vehicle's primary reservoir gauge accuracy is to:

A. Compare the dash gauge reading to an independent calibrated test gauge in the primary circuit

B. Measure primary reservoir volume with a precision instrument

C. Observe the gauge needle position during various operating conditions

D. Replace the primary reservoir gauge as preventive maintenance at annual service

3. A Class 8 tractor's driver reports that the vehicle loses power during sustained grades, with power returning to normal after the grade is crested. The most likely cause is:

A. Normal engine behavior during sustained grade operation at full load

B. Driver technique error producing apparent power loss during climbs

C. Fuel system, air system, or aftertreatment restriction reducing capacity under sustained load

D. Transmission torque converter cycling during sustained load conditions

4. The correct method for inspecting a commercial vehicle's electrical connector is to:

A. Apply dielectric grease to all connectors regardless of condition at each service

B. Disconnect, inspect contact surfaces for corrosion and damage, reconnect with appropriate protection

C. Replace all electrical connectors at scheduled intervals as preventive maintenance

D. Test electrical continuity at the connector without disconnecting during service

5. A technician performing PMI finds a commercial vehicle's engine belt showing a shiny, polished appearance across the belt's ribs. The most likely cause is:

A. Normal belt aging that does not affect performance or require replacement

B. Exposure to lubricants during engine service producing surface changes

C. Heat from nearby exhaust components affecting belt surface

D. Belt slippage under load producing friction heat that polishes the rib surfaces

6. The correct interpretation of a commercial vehicle's coolant reservoir level that has dropped between service intervals with no visible external leaks is:

A. Internal coolant loss into the combustion chambers, oil pan, or other internal pathway

B. Normal coolant evaporation during extended operation

C. Elevated ambient temperature producing expansion-related loss

D. Driver operation producing coolant loss through the recovery system

7. A Class 8 tractor's trailer brakes do not release when the tractor service brake pedal is released. The tractor brakes release normally. The most likely cause is:

A. Normal trailer brake behavior during combination vehicle operation

B. Driver technique error producing apparent trailer brake hold

C. Restricted service brake return line, failed relay valve, or service brake signal not releasing

D. Tractor service brake valve problem affecting trailer brake signal timing

8. The correct interpretation of a diesel engine's exhaust that is normal during warm-up but develops gray smoke after 30 minutes of operation is:

A. Normal exhaust behavior during extended operation at varying loads

B. Progressive engine problem: cooling system issue, aftertreatment degradation, or fuel injection problem

C. Driver technique during sustained operation producing apparent exhaust change

D. Fuel quality degradation during storage affecting combustion characteristics

9. A technician inspecting a tractor's brake hardware finds visible wear on a slack adjuster adjusting mechanism. The correct action is:

A. Replace the worn slack adjuster before the vehicle returns to service

B. Continue service with documentation for monitoring at the next interval

C. Apply grease to the mechanism to reduce additional wear

D. Adjust the slack adjuster to its maximum position to compensate for wear

10. The correct procedure for checking a commercial vehicle's engine oil pressure is to:

A. Visual observation of the dash oil pressure gauge during operation

B. Measure oil pressure at the sending unit port during service

C. Connect a mechanical test gauge to the engine and measure pressure at idle and elevated RPM

D. Replace the oil pressure sending unit if the dash gauge shows low pressure

11. A driver reports that the vehicle's steering produces noise only during sharp turns at low speeds. The noise does not occur during highway operation. The most likely cause is:

A. Normal steering operation during maximum-angle maneuvers

B. Driver technique requiring improvement during slow-speed maneuvers

C. Power steering pump, fluid, or steering gear issue producing noise under high-demand low-speed conditions

D. Tire scrubbing against the road surface during tight maneuvers

12. The correct method for verifying a commercial vehicle's engine cooling fan for proper function is to:

A. Measure fan speed with a tachometer during various operating conditions

B. Remove the fan assembly for bench testing of electrical components

C. Replace the fan assembly at scheduled intervals as preventive maintenance

D. Visual inspection of fan blade condition and verification of speed response during engine warm-up

13. A Class 8 tractor's air compressor produces a continuous hissing sound from the compressor area during operation. The most likely cause is:

A. Normal compressor operation during loading and unloading cycles

B. Compressor cylinder head gasket leak, worn valves, or internal compressor damage producing air escape

C. Air dryer purge valve cycling producing audible sound during normal operation

D. Governor operation during pressure regulation producing characteristic sound

14. The correct interpretation of a commercial vehicle's battery that shows green color at the terminal posts is:

A. Copper sulfate deposits from battery acid reaction with the copper cable terminals requiring cleaning

B. Normal battery terminal appearance during extended service life

C. Paint or protective coating applied during manufacturer assembly

D. Chemical reaction with specific cable materials producing the green color

15. A technician inspecting a tractor's suspension air bag finds visible cracks in the rubber surface. The correct action is:

A. Apply air bag repair compound to seal the visible cracks and continue service

B. Reduce air pressure to minimize stress on the cracked areas during operation

C. Monitor the air bag condition at the next service interval for progression

D. Replace the cracked air bag before the vehicle returns to service

16. The correct procedure for testing a commercial vehicle's horn during PMI is to:

A. Measure voltage at the horn terminal during activation

B. Disconnect the horn for bench testing with a known-good power supply

C. Activate the horn control from the steering wheel and confirm audible sound output

D. Replace the horn at scheduled intervals as preventive service

17. A driver reports that the exhaust system produces a rattling sound during idle that disappears at higher engine speeds. The most likely cause is:

A. Loose exhaust system component producing idle-specific rattling that is masked by higher RPM vibration

B. Normal exhaust system behavior during varying engine operation

C. Exhaust backpressure issue affecting system operation at idle

D. Aftertreatment regeneration cycle producing characteristic sound at low RPM

18. The correct interpretation of a commercial vehicle's A/C system that produces inadequate cooling despite confirmed correct refrigerant charge is to:

A. Continue service since the refrigerant charge is confirmed correct

B. Investigate compressor performance, evaporator condition, condenser restrictions, or other system issues

C. Apply A/C system cleaner to the refrigerant charge to restore performance

D. Replace the complete A/C system as preventive maintenance

19. A Class 8 tractor's engine oil pressure gauge reads 25 psi at idle and 60 psi at highway cruise. The engine specification is 20-30 psi at idle and 50-70 psi at cruise. The correct interpretation is:

A. Above-specification pressure indicating potential oil pump problem

B. Below-specification pressure indicating worn engine bearings

C. Incorrect oil viscosity for current operating conditions

D. Within-specification pressure indicating normal engine operation

20. The correct action when a commercial vehicle's tire shows a visible nail embedded in the tread is:

A. Evaluate location, tire condition, and damage extent to determine appropriate repair or replacement

B. Remove the nail to restore tire appearance and monitor for pressure loss

C. Continue service if the tire is still holding air pressure during initial inspection

D. Replace the tire before the vehicle returns to service regardless of nail location

21. A technician inspecting a tractor finds that a wheel stud has been over-tightened, with visible thread damage. The correct action is:

A. Replace the damaged wheel stud and adjacent lug nut before the vehicle returns to service

B. Apply thread repair compound to the damaged threads and reuse the stud

C. Continue service if the stud can still be torqued to specification

D. Use a longer lug nut to engage undamaged thread areas of the stud

22. The correct interpretation of a commercial vehicle's engine oil that shows a dark black color with extended service is:

A. Abnormal oil appearance requiring immediate investigation and replacement

B. Contamination from coolant producing color change during extended service

C. Normal appearance in a diesel engine due to soot loading and oxidation during service

D. Fuel dilution producing color change in the engine oil during operation

23. A Class 8 tractor's driver reports that the vehicle experiences reduced steering response at highway speeds, with normal response at lower speeds. The most likely cause is:

A. Normal steering characteristic at highway speed due to reduced assistance demand

B. Steering gear wear, alignment issue, or steering damper problem producing high-speed response issues

C. Tire pressure at the steer axle reducing response during high-speed operation

D. Driver technique requiring improvement during highway steering input

24. The correct procedure for inspecting a commercial vehicle's fifth wheel lubrication is to:

A. Apply grease to the fifth wheel at every service interval regardless of existing grease condition

B. Replace grease components at scheduled intervals as preventive maintenance

C. Measure grease thickness with a precision instrument during inspection

D. Inspect existing grease for contamination, distribution, and quantity; supplement as needed

25. A technician performing PMI finds that the commercial vehicle's fuel system shows visible moisture in the fuel filter water separator. The correct action is:

A. Drain water from the separator and monitor for recurring accumulation at the next service

B. Replace the complete fuel filter assembly to eliminate the moisture

C. Add fuel additives to dissolve the moisture in the fuel system

D. Heat the fuel system to evaporate the accumulated moisture

26. The correct interpretation of a commercial vehicle's coolant that shows a bright green color during inspection is:

A. Normal conventional coolant appearance if this is the specified coolant type

B. Evidence of SCA contamination producing color change

C. Standard green coolant (ethylene glycol-based) at the expected concentration, if this is the specified type

D. Coolant contamination from a dye used in leak detection

27. A Class 8 tractor's driver reports that the engine produces a whining sound during acceleration that does not occur at cruise or idle. The most likely cause is:

A. Normal engine sound during acceleration conditions

B. Driver technique producing apparent whine during acceleration

C. Turbocharger aging but still operating within specification

D. Turbocharger compressor wheel problem, bearing wear, or intake restriction producing acceleration-specific noise

28. The correct procedure for verifying a commercial vehicle's brake warning light function is to:

A. Disconnect the lamp for bench testing with external power

B. Apply the parking brake or reduce brake fluid/air pressure to trigger the warning lamp and observe illumination

C. Replace the warning lamp bulb at each annual inspection

D. Measure voltage at the lamp terminal with a multimeter

29. A technician inspecting a tractor finds that the rear axle breather is clogged with dirt and debris. The correct action is:

A. Clean or replace the axle breather to restore proper venting function

B. Ignore the condition since breather restriction doesn't affect axle operation

C. Apply additional grease to compensate for reduced venting

D. Remove the breather entirely to ensure maximum airflow

30. The correct interpretation of a commercial vehicle's transmission that exhibits hesitation during downshifts only, with normal upshifts, is:

A. Normal transmission behavior during varying load conditions

B. Driver technique requiring improvement during deceleration

C. Transmission internal problem specific to downshift operation: synchronizer, clutch, or fluid issue

D. Engine brake/retarder operation affecting transmission downshift response

31. A Class 8 tractor's headlamps operate at normal brightness at idle but flicker during engine operation. The most likely cause is:

A. Normal headlamp behavior during engine speed variations

B. Driver technique producing apparent flickering during operation

C. Loose connections producing intermittent circuit issues during operation

D. Alternator output variation, loose electrical connection, or wiring problem producing inconsistent voltage

32. The correct method for inspecting a commercial vehicle's leaf spring assembly is to:

A. Measure spring height at specific points compared to specification

B. Visual inspection for broken leaves, cracks, shifted leaves, damaged shackles, and U-bolt condition

C. Apply hydraulic pressure to test spring rate against specification

D. Remove the spring assembly for bench inspection of individual leaves

33. A driver reports that the cab heater produces cool air during normal operation with the engine at operating temperature. The most likely cause is:

A. Normal cab heater operation during varying conditions

B. Driver setting error for the cab heater controls

C. Heater core restriction, air in cooling system, or heater control valve problem preventing heated coolant flow

D. Coolant temperature below specification reducing heater output

34. The correct interpretation of a commercial vehicle's brake fluid that shows dark brown color during inspection is:

A. Contamination or moisture absorption in the fluid over extended service, requiring fluid replacement

B. Normal brake fluid color after extended service

C. Evidence of proper break-in during initial service

D. Specific brake fluid type used by the manufacturer

35. A technician performing PMI finds that a commercial vehicle's engine oil cooler is leaking, with visible oil drips from the housing. The correct action is:

A. Apply engine oil stop-leak additive to seal the leak during operation

B. Continue service if the leak rate is minimal at current service

C. Monitor the leak rate at the next service interval for progression

D. Repair or replace the oil cooler before the vehicle returns to service

36. The correct interpretation of a commercial vehicle's brake pedal that produces a spongy feel during application is:

A. Normal brake pedal feel during initial application

B. Air in the hydraulic brake system or contaminated brake fluid requiring diagnostic service

C. Driver technique error during brake pedal application

D. Brake component wear producing reduced pedal feel

37. A Class 8 tractor's trailer lights fail to illuminate when activated from the tractor controls. The most likely cause is:

A. Normal trailer lighting behavior during initial connection

B. Trailer-side electrical problem: corroded 7-way plug, ground issue, or wiring fault at the trailer

C. Trailer light switch requires reset at the trailer control panel

D. Normal trailer light operation varying with the trailer load

38. The correct procedure for testing a commercial vehicle's stop lamp switch is to:

A. Replace the stop lamp switch at each annual inspection as preventive service

B. Remove the stop lamp switch for bench testing with external equipment

C. Depress the brake pedal and verify that all stop lamps illuminate as expected

D. Measure voltage at the stop lamp switch terminal without activation

39. A technician inspecting a tractor's charging system finds that the alternator belt shows visible wear on the rib surfaces with some fraying. The correct action is:

A. Apply belt dressing to the fraying areas to extend service life

B. Continue service if the belt has not completely failed during operation

C. Adjust belt tension to compensate for the visible wear

D. Replace the alternator drive belt with a new belt of specification

40. The correct interpretation of a commercial vehicle's engine that starts reliably in warm weather but has difficulty starting in cold weather is:

A. Driver technique requires adaptation for cold-weather starting procedures

B. Intake air heater problem, glow plug issue, or fuel system problem affecting cold-weather starts

C. Normal diesel engine behavior requiring extended cranking in cold conditions

D. Engine control module programming requiring cold-weather adjustment

41. A driver reports that the vehicle pulls to the left during hard acceleration but tracks straight during cruise. The most likely cause is:

A. Normal vehicle behavior during hard acceleration maneuvers

B. Driver technique error producing apparent pull during acceleration

C. Engine torque reaction combined with driveline alignment producing acceleration-specific pull

D. Tire pressure difference producing traction variation during acceleration

42. The correct procedure for checking a commercial vehicle's windshield for condition is to:

A. Visual inspection for cracks, chips, scratches, and obstruction of driver sight lines

B. Remove the windshield for bench inspection during PMI

C. Apply pressure to the windshield to check structural integrity

D. Replace the windshield at scheduled intervals as preventive service

43. A Class 8 tractor's driver reports that the engine produces excessive vibration during operation at specific RPM ranges. The vibration is not present at idle or at higher RPMs. The most likely cause is:

A. Normal engine vibration at all operating speeds

B. Driver perception error during operation at specific RPMs

C. Engine rotational imbalance producing speed-dependent vibration

D. Engine mount deterioration or worn components producing resonance at specific RPM

44. The correct interpretation of a commercial vehicle's coolant temperature gauge that reads lower than normal during sustained operation is:

A. Normal coolant temperature variation during light-load operation

B. Stuck-open thermostat allowing continuous coolant flow regardless of temperature

C. Driver error in monitoring coolant temperature during operation

D. Coolant temperature sensor calibration error producing incorrect low reading

45. A technician inspecting a tractor's rear axle finds visible oil leakage from the axle housing at a rate of approximately 1 drop per minute. The correct action is:

A. Ignore the leak since the rate is minimal

B. Monitor the leak at the next service interval

C. Investigate the leak source and repair before the vehicle returns to service

D. Add axle lubricant to compensate for the loss

46. The correct procedure for inspecting a commercial vehicle's fuel tank for security is to:

A. Visual inspection of tank mounting, straps, and structural condition for secure attachment

B. Removal of the tank for internal inspection during PMI

C. Pressure testing the fuel tank at specified service intervals

D. Replacement of fuel tanks at scheduled intervals as preventive maintenance

47. A Class 8 tractor's driver reports that the vehicle has developed a clunking noise when shifting between gears. The noise was not present at the previous inspection. The most likely cause is:

A. Normal shifting sound during varying operating conditions

B. Driver technique error producing apparent clunking during shifts

C. Transmission settling during extended operation

D. Worn driveline components, damaged U-joints, or transmission mount issue producing new clunking noise

48. The correct interpretation of a commercial vehicle's engine that exhibits excessive blowby visible at the oil fill cap opening is:

A. Normal crankcase pressure at the oil fill location

B. Worn piston rings, cylinder damage, or CCV failure producing excessive blowby

C. Oil aeration producing apparent blowby at the fill opening

D. Engine operating within specification with minor pressure indication

49. A technician performing PMI finds that a commercial vehicle's DEF tank level is low despite recent filling. The most likely cause is:

A. DEF system leak, tank damage, or improper filling at last service requiring investigation

B. Normal DEF consumption during extended operation

C. Driver fill error during last DEF service

D. DEF evaporation during extended parking periods

50. The correct procedure for verifying a commercial vehicle's mirror adjustment and condition is to:

A. Replace mirrors at scheduled intervals as preventive maintenance

B. Check mirror mounting for security and measure mirror glass thickness

C. Confirm that both side mirrors are intact, adjustable, and provide adequate rearward visibility

D. Visual inspection of mirror surface condition only without functional verification

PRACTICE EXAM 12: ANSWER KEY AND EXPLANATIONS

1. D — Master cylinder reservoir level dropping to MIN indicates either brake pad wear pulling additional fluid into the caliper pistons as pads thin out, or system leakage requiring investigation. Both mechanisms consume fluid from the reservoir. Evaporation, overfilling, and fluid specification changes do not produce this pattern of fluid loss during normal service.

2. A — Primary reservoir gauge accuracy is verified by comparing the dash gauge reading to an independent calibrated test gauge connected to the primary circuit. Without independent verification, the technician cannot determine whether the gauge is accurate or if an actual pressure problem exists. This verification principle applies broadly to gauge-based diagnostics.

3. C — Power loss during sustained grades that recovers after cresting indicates fuel system, air system, or aftertreatment restriction reducing capacity under sustained load. The restriction produces progressive performance loss as demand continues; after the grade is crested, demand drops and normal operation resumes. Investigation identifies the specific restriction causing the pattern.

4. B — Electrical connector inspection requires disconnecting the connector, inspecting contact surfaces for corrosion and damage, and reconnecting with appropriate protection. This is the only method that reveals contact-surface condition. Blanket grease application, scheduled replacement, and continuity-only testing don't identify corrosion or damage that affects connection reliability.

5. D — A shiny, polished appearance across belt ribs indicates belt slippage under load producing friction heat that polishes the rib surfaces. The belt cannot maintain grip on the pulley, producing the characteristic glaze. The condition requires belt replacement and investigation of the underlying cause (tension, pulley condition, or contamination).

6. A — Coolant loss without visible external leaks indicates internal coolant loss into the combustion chambers, oil pan, or other internal pathway. Common causes include head gasket failure, cracked cylinder head, or oil cooler gasket failure. The condition requires diagnostic investigation beyond PMI scope to identify the specific internal leak.

7. C — Trailer brakes that fail to release when the tractor service brake is released typically indicate a restricted service brake return line, failed relay valve, or service brake signal not releasing properly. The signal remains applied at the trailer chambers even after the tractor side releases, producing continued brake application.

8. B — Exhaust changing from normal to gray smoke after 30 minutes of operation indicates a progressive engine problem that develops under operating conditions: cooling system issues, aftertreatment degradation, or fuel injection problems that manifest at operating temperature. The time-dependent pattern suggests a condition that worsens with sustained operation.

9. A — A slack adjuster with visible wear on the adjusting mechanism requires replacement before the vehicle returns to service. The adjusting mechanism is critical for maintaining proper brake stroke; wear in this component compromises brake system adjustment reliability. Continued service, grease application, and position adjustment do not restore mechanical integrity.

10. C — Engine oil pressure measurement is performed by connecting a mechanical test gauge to the engine and measuring pressure at idle and elevated RPM. The mechanical gauge provides verification of actual pressure, distinguishing between dash gauge error and real pressure problems. This is the standard method for accurate pressure assessment.

11. C — Steering noise only during sharp low-speed turns typically indicates power steering pump, fluid, or steering gear issues producing noise under high-demand low-speed conditions. These conditions demand maximum hydraulic assistance, and any weakness in the power steering system becomes apparent. Tire scrubbing produces a different sound character.

12. D — Engine cooling fan function is verified through visual inspection of blade condition and verification of speed response during engine warm-up. A healthy fan engages progressively as temperature rises; a failed fan does not engage or engages at incorrect temperatures. Visual and operational observation provides reliable verification without disassembly.

13. B — A continuous hissing sound from an air compressor during operation indicates compressor cylinder head gasket leak, worn valves, or internal compressor damage producing air escape. The sound is audible air loss that would not occur with normal compressor operation. The condition requires compressor service to identify the specific leak source.

14. A — Green color at battery terminal posts indicates copper sulfate deposits from battery acid reaction with the copper cable terminals. The deposits form over time as battery acid vapors react with the copper metal, producing the green copper sulfate. The terminals require cleaning to restore proper electrical contact.

15. D — Visible cracks in a suspension air bag require replacement before the vehicle returns to service. Air bag cracks compromise the ability to contain air pressure reliably, and progressive failure follows the initial cracks. Repair compounds, pressure reduction, and monitoring do not address the structural integrity issue.

16. C — Horn testing is performed by activating the horn control from the steering wheel and confirming audible sound output. This is a direct functional test confirming the complete circuit and horn operation. Voltage measurement, bench testing, and scheduled replacement do not verify that the horn actually produces sound on command.

17. A — An exhaust system rattle that occurs only at idle and disappears at higher RPMs typically indicates a loose exhaust system component producing idle-specific rattling. Higher RPM vibration has different frequency characteristics that may mask the rattle or change it. Common causes include loose heat shields, brackets, or mounting hardware.

18. B — A/C system that produces inadequate cooling with confirmed correct refrigerant charge requires investigation of other system components: compressor performance, evaporator condition, condenser restrictions, or other system issues. The refrigerant charge is only one element of A/C operation; other components can produce cooling problems while refrigerant levels remain normal.

19. D — An engine oil pressure of 25 psi at idle and 60 psi at highway cruise falls within the specification (20-30 psi at idle, 50-70 psi at cruise), indicating normal engine operation. Both readings are in the middle of the specified range. No further action is required; the pressure readings confirm proper lubrication system function.

20. A — A tire with a visible embedded nail requires evaluation of the location, tire condition, and damage extent to determine appropriate action. Repair feasibility depends on nail location (in the tread area versus sidewall), damage extent, and tire condition. Automatic replacement and continued service ignore the assessment needed for proper decision-making.

21. A — A wheel stud with visible thread damage from over-tightening requires replacement of both the damaged stud and the adjacent lug nut before the vehicle returns to service. Thread repair compounds do not restore structural integrity; longer lug nuts and continued service do not address the underlying damage that affects retention reliability.

22. C — Dark black engine oil color with extended service is normal appearance in a diesel engine due to soot loading and oxidation during service. Diesel combustion produces soot that accumulates in the oil over the service interval. The dark color is expected and does not indicate a problem; the oil's effectiveness is evaluated through analysis rather than color.

23. B — Reduced steering response at highway speeds with normal response at lower speeds indicates steering gear wear, alignment issues, or steering damper problems producing high-speed response issues. At highway speeds, small changes in steering behavior are magnified; at lower speeds, the problems are less apparent due to reduced dynamic forces.

24. D — Fifth wheel lubrication inspection examines existing grease for contamination, distribution, and quantity; fresh grease is supplemented as needed based on this assessment. This condition-based approach ensures proper lubrication without unnecessary grease application or removal. Blanket application and scheduled replacement ignore the condition assessment.

25. A — Moisture in the fuel filter water separator is expected and normal — the separator's function is to capture water before it reaches the injectors. The correct action is to drain water from the

separator and monitor for recurring accumulation at the next service. Filter replacement without service need, additive approaches, and heat application are not appropriate.

26. C — Bright green coolant is the standard appearance for conventional ethylene glycol-based coolant at the expected concentration, if this is the specified coolant type for the vehicle. Coolant color identifies the coolant chemistry; verification that the color matches the specified type confirms proper coolant is in the system. Different coolant types use different colors (red, pink, orange, etc.).

27. D — A whining sound during acceleration that does not occur at cruise or idle typically indicates turbocharger compressor wheel problems, bearing wear, or intake restriction producing acceleration-specific noise. The turbocharger is most loaded during acceleration, making these conditions most audible then. Investigation identifies the specific cause.

28. B — Brake warning light function is verified by applying the parking brake or reducing brake fluid/air pressure to trigger the warning lamp, then observing illumination as designed. This is a direct functional test that confirms the complete warning circuit. Bench testing, scheduled replacement, and voltage-only measurement do not verify actual warning function.

29. A — A rear axle breather clogged with dirt and debris requires cleaning or replacement to restore proper venting function. Without venting, pressure changes in the axle housing force lubricant past seals, producing leakage. The breather must be functional for proper axle operation. Ignoring the condition, grease addition, or breather removal are not appropriate responses.

30. C — Hesitation during downshifts only, with normal upshifts, typically indicates a transmission internal problem specific to downshift operation: synchronizer, clutch, or fluid issue affecting the downshift mechanism. Different synchronizers and clutches handle different shift events, and wear in one path affects only that path.

31. D — Headlamps flickering during engine operation with normal idle brightness typically indicates alternator output variation, loose electrical connection, or wiring problem producing inconsistent voltage. The variation corresponds to engine operating conditions; normal operation should produce steady voltage regardless of engine RPM changes.

32. B — Leaf spring assembly inspection is a visual procedure checking for broken leaves, cracks, shifted leaves, damaged shackles, and U-bolt condition. These visual findings identify the conditions that affect spring performance. Spring height measurement, hydraulic testing, and removal are not standard PMI procedures.

33. C — Cool cab heater output with engine at operating temperature typically indicates heater core restriction, air in the cooling system, or heater control valve problem preventing heated coolant flow through the heater core. The heated coolant isn't reaching the heater core effectively, so the fan blows unheated air. Investigation identifies the specific cause.

34. A — Dark brown brake fluid indicates contamination or moisture absorption over extended service, requiring fluid replacement. Brake fluid is hygroscopic and absorbs moisture, producing color change and reducing the boiling point. The contaminated fluid has lost its protective properties and must be replaced to restore proper brake system function.

35. D — An engine oil cooler leaking with visible oil drips requires repair or replacement before the vehicle returns to service. Oil loss affects engine lubrication and produces environmental concerns. Stop-leak additives, minimal-leak tolerance, and monitoring do not address the active fluid loss that compromises engine protection.

36. B — A spongy brake pedal feel indicates air in the hydraulic brake system or contaminated brake fluid requiring diagnostic service. Air is compressible while fluid is not; air in the system produces the characteristic spongy feel. The condition requires bleeding and possibly fluid replacement to restore proper brake response.

37. B — Failed trailer lighting when activated from tractor controls typically indicates a trailer-side electrical problem: corroded 7-way plug contacts, ground issues, or wiring fault at the trailer. The tractor is sending the correct signal, but the trailer cannot receive and act on it. Investigation at the trailer-side connections identifies the specific cause.

38. C — Stop lamp switch testing is performed by depressing the brake pedal and confirming that all installed stop lamps illuminate. This is a direct functional test that confirms complete circuit operation from switch through lamps. Scheduled replacement, bench testing, and voltage-only measurement without activation do not verify complete function.

39. D — An alternator drive belt with visible wear on the rib surfaces and fraying requires replacement with a new belt of specification. The belt cannot continue to transmit power reliably in its current condition; failure would produce charging system shutdown. Dressings, continued service, and tension adjustment do not address the physical belt deterioration.

40. B — Warm-weather starting reliability with cold-weather difficulty typically indicates an intake air heater problem, glow plug issue (on equipped engines), or fuel system problem affecting cold-weather starts. The engine needs additional combustion assistance in cold conditions, and that assistance must be functional for reliable starting. Investigation identifies the specific cold-start component needing service.

41. C — Left pull during hard acceleration with straight tracking during cruise typically indicates engine torque reaction combined with driveline alignment producing acceleration-specific pull. Under heavy torque, the driveline stress produces forces that affect vehicle tracking. Normal operation and driver technique do not produce consistent pull; tire pressure produces different patterns.

42. A — Windshield condition inspection is a visual procedure checking for cracks, chips, scratches, and obstruction of driver sight lines. These visual findings identify the conditions that affect driver

visibility and safety. Removal for bench inspection, pressure testing, and scheduled replacement are not standard PMI procedures.

43. D — Excessive vibration at specific RPM ranges with smoother operation at other RPMs typically indicates engine mount deterioration or worn components producing resonance at specific RPM. The mounts normally absorb vibration, but worn mounts allow transmission of vibration at certain frequencies. Investigation identifies worn components requiring replacement.

44. B — A coolant temperature gauge reading lower than normal during sustained operation indicates a stuck-open thermostat allowing continuous coolant flow regardless of temperature. The engine cannot reach normal operating temperature because coolant continuously circulates to the radiator. The condition reduces engine efficiency and produces cool cab heater output.

45. C — Oil leakage from a rear axle housing at approximately 1 drop per minute requires investigation of the leak source and repair before the vehicle returns to service. Active fluid loss affects axle protection and must be addressed; the rate represents ongoing loss that will accumulate. Monitoring, ignoring, and compensation do not address the underlying leak.

46. A — Fuel tank security inspection is a visual procedure examining tank mounting, straps, and structural condition for secure attachment. This identifies mounting problems that can lead to tank movement, damage, or fuel leakage. Removal for internal inspection, pressure testing, and scheduled replacement are not standard PMI procedures.

47. D — A new clunking noise during gear shifts that was not present at the previous inspection typically indicates worn driveline components, damaged U-joints, or transmission mount issues. The change-over-time pattern points to a condition that developed during the service interval. Investigation identifies the specific component requiring service.

48. B — Excessive blowby visible at the oil fill cap opening indicates worn piston rings, cylinder damage, or CCV failure producing excessive crankcase pressure. Normal engines produce minimal pressure at the oil fill opening. Significant pressure/blowby indicates internal engine wear that has progressed beyond normal service limits.

49. A — Low DEF tank level despite recent filling indicates a DEF system leak, tank damage, or improper filling at last service requiring investigation. The expected level should have been maintained through normal operation; rapid loss points to a problem requiring diagnostic investigation. Normal consumption and driver fill error produce different patterns.

50. C — Mirror inspection confirms that both side mirrors are intact, adjustable, and provide adequate rearward visibility. These functional aspects affect driver safety and operation. Scheduled replacement, glass thickness measurement, and surface-only inspection do not verify the functional adequacy that is the actual inspection requirement.