

# PRACTICE EXAM 7: T8 SIMULATION

## (50 QUESTIONS)

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1. A heavy-duty truck PM inspection finds engine cooling system overheating along with poor cab heating performance. The most likely common cause is:

- A. Failed compressor unrelated to cooling issues
- B. Coolant level low or air-bound system affecting both heat transfer functions
- C. Failed engine ECU affecting both systems
- D. Failed heater core unrelated to cooling issues

2. A heavy-duty truck PM inspection finds engine performance issues along with electrical system fault codes. The most likely common cause is:

- A. Failed engine ECU producing both issues
- B. Failed individual components producing simultaneous issues
- C. Failed alternator unrelated to engine performance
- D. Loose or corroded primary chassis ground or battery connection

3. A heavy-duty truck PM inspection finds elevated DEF system fault codes along with reduced engine power. The most likely common cause is:

- A. SCR system fault triggering engine derate per emissions strategy
- B. Failed engine ECU affecting both systems
- C. Failed cooling system affecting both functions
- D. Coincidental engine and DEF system failures

4. Tech A says heavy-duty truck engine cooling fan operation affects both engine cooling and A/C condenser performance. Tech B says fan failures can affect multiple vehicle systems simultaneously. 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

5. A heavy-duty truck PM inspection finds engine cooling fan operation issues along with elevated engine operating temperature during high-load operation. The most likely cause is:

- A. Failed cooling fan or fan clutch affecting cooling capacity under load
- B. Failed engine ECU unrelated to fan operation
- C. Failed water pump unrelated to fan operation
- D. Failed thermostat unrelated to fan operation

6. A heavy-duty truck PM inspection finds engine oil contamination along with cooling system pressure loss. The most likely cause is:

- A. Failed cooling system pressure cap unrelated to oil contamination
- B. Failed water pump unrelated to oil contamination
- C. Failed engine thermostat unrelated to oil contamination
- D. Cylinder head gasket failure allowing coolant into oil and pressure loss

7. A heavy-duty truck PM inspection finds engine air filter restriction at red zone along with engine performance complaints. The most likely common cause is:

- A. Failed engine ECU producing both issues

- B. Restricted air filter directly causing performance issues
- C. Failed turbocharger unrelated to filter restriction
- D. Failed cooling system unrelated to filter restriction

8. Tech A says heavy-duty truck engine performance issues can produce engine fault codes that should be retrieved during PM inspection. Tech B says fault code retrieval provides diagnostic information about developing engine issues. 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

9. A heavy-duty truck PM inspection finds engine vibration along with mounting hardware looseness. The most likely common cause is:

- A. Loose engine mounts allowing excessive engine movement and vibration
- B. Failed engine internal components unrelated to mounting
- C. Failed cooling system unrelated to mounting
- D. Failed electrical system unrelated to mounting

10. A heavy-duty truck PM inspection finds excessive engine oil consumption along with blue exhaust smoke. The most likely cause is:

- A. Failed cooling system unrelated to oil consumption
- B. Failed electrical system unrelated to oil consumption
- C. Failed fuel system unrelated to oil consumption
- D. Worn engine internal components allowing oil into combustion chambers

11. Tech A says heavy-duty truck engine PM inspection should include verification of engine and emissions system integration. Tech B says modern engine and emissions systems are interconnected and require integrated inspection approach. 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

12. A heavy-duty truck PM inspection finds engine fault codes along with intermittent operation issues. The most likely common cause is:

- A. Loose or corroded primary battery or ground connection
- B. Failed engine ECU producing all issues
- C. Failed individual components producing simultaneous issues
- D. Failed cooling system producing all issues

13. A heavy-duty truck PM inspection finds engine cooling system issues along with intermittent gauge readings on the dash. The most likely common cause is:

- A. Failed cooling system unrelated to gauge issues
- B. Failed gauges unrelated to cooling system
- C. Failed engine ECU producing both issues
- D. Loose or corroded primary chassis ground affecting multiple systems

14. A heavy-duty truck PM inspection finds engine charge air cooler damage along with reduced engine performance. The most likely cause is:

- A. Failed engine internal components unrelated to charge air cooler

- B. Charge air cooler leak reducing intake air pressure and engine performance
- C. Failed cooling system unrelated to charge air cooler
- D. Failed electrical system unrelated to charge air cooler

15. A heavy-duty truck PM inspection finds cab vibration along with mirror vibration issues. The most likely common cause is:

- A. Failed individual mirrors unrelated to cab condition
- B. Failed individual mounts unrelated to vibration source
- C. Cab mounting issues affecting overall cab stability and mirror vibration
- D. Failed engine mounts affecting cab vibration

16. A heavy-duty truck PM inspection finds cab door operation issues along with weather seal damage. The most likely common cause is:

- A. Door alignment or hinge wear affecting both door operation and seal contact
- B. Failed individual seals unrelated to door operation
- C. Failed weather conditions unrelated to door operation
- D. Failed engine mounts unrelated to cab door operation

17. Tech A says heavy-duty truck cab inspection should include verification of cab structural integrity and mounting integrity. Tech B says cab mounting issues can affect cab stability, door operation, and overall safety. Who is correct?

- A. Tech A only
- B. Tech B only
- C. Neither Tech A nor Tech B
- D. Both Tech A and Tech B

18. A heavy-duty truck PM inspection finds windshield wiper issues along with electrical system fault codes. The most likely common cause is:

- A. Failed individual wiper components unrelated to electrical system
- B. Loose or corroded primary chassis ground or battery connection
- C. Failed engine ECU unrelated to wiper operation
- D. Failed individual systems producing simultaneous issues

19. A heavy-duty truck PM inspection finds cab seat belt issues along with seat operation issues. The most likely common cause is:

- A. Failed engine mounts unrelated to seat operation
- B. Failed individual seat components unrelated to seat belt issues
- C. Cab interior mounting hardware loosening affecting multiple cab components
- D. Failed individual seat belts unrelated to seat operation

20. Tech A says heavy-duty truck cab PM inspection should include verification of multiple cab safety systems. Tech B says comprehensive cab inspection identifies developing issues across all cab systems. 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

21. A heavy-duty truck PM inspection finds multiple electrical system fault codes from different modules. The truck has had no recent service. The most likely common cause is:

- A. Loose or corroded primary chassis ground or battery connection

- B. Failed body controller producing all codes
- C. Failed individual modules producing simultaneous codes
- D. Failed engine ECU producing all codes

22. A heavy-duty truck PM inspection finds battery state of charge issues along with charging system warnings. The most likely common cause is:

- A. Failed individual batteries unrelated to charging system
- B. Failed body controller unrelated to charging
- C. Charging system fault affecting battery state of charge
- D. Failed engine ECU unrelated to charging

23. Tech A says heavy-duty truck electrical system PM inspection should include scan tool fault code retrieval from all modules. Tech B says comprehensive code retrieval identifies developing electrical issues across all vehicle systems. 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

24. A heavy-duty truck PM inspection finds multiple lighting circuit issues along with general electrical system warnings. The most likely common cause is:

- A. Failed individual bulbs unrelated to electrical system
- B. Failed individual circuits unrelated to common cause
- C. Failed body controller unrelated to lighting
- D. Loose or corroded primary chassis ground or battery connection

25. A heavy-duty truck PM inspection finds intermittent dash gauge issues along with intermittent module communication faults. The most likely common cause is:

- A. Loose or corroded power supply or ground affecting multiple modules
- B. Failed individual gauges unrelated to communication faults
- C. Failed body controller producing both issues
- D. Failed engine ECU producing both issues

26. A heavy-duty truck PM inspection finds frame crack development along with suspension component wear. The most likely common cause is:

- A. Failed individual frame components unrelated to suspension
- B. Failed individual suspension components unrelated to frame
- C. Operating condition (overload, road condition) affecting both frame and suspension
- D. Failed engine mounts unrelated to frame condition

27. A heavy-duty truck PM inspection finds fifth wheel mounting issues along with frame crack development at the fifth wheel area. The most likely common cause is:

- A. Failed fifth wheel unrelated to frame condition
- B. High-stress operation at fifth wheel area affecting both fifth wheel and frame
- C. Failed engine mounts unrelated to fifth wheel area
- D. Failed suspension unrelated to fifth wheel area

28. Tech A says heavy-duty truck frame inspection should include component mounting verification. Tech B says loose component mounting can affect frame integrity and component operation. Who is correct?

- A. Tech A only

- B. Tech B only
- C. Neither Tech A nor Tech B
- D. Both Tech A and Tech B

29. A heavy-duty truck PM inspection finds frame corrosion along with brake line and air line damage at the corrosion area. The most likely common cause is:

- A. Salt or chemical exposure affecting frame, brake lines, and air lines
- B. Failed individual brake lines unrelated to frame corrosion
- C. Failed individual air lines unrelated to frame corrosion
- D. Failed engine cooling system unrelated to corrosion

30. A heavy-duty truck PM inspection finds crossmember damage along with component mounting failures. The most likely common cause is:

- A. Failed individual components unrelated to crossmember
- B. Failed individual mounts unrelated to crossmember
- C. Crossmember structural compromise affecting load distribution and component mounting
- D. Failed engine mounts unrelated to crossmember

31. Tech A says heavy-duty truck frame inspection identifies issues that affect multiple vehicle systems. Tech B says frame integrity affects suspension, drivetrain, and component mounting throughout the vehicle. Who is correct?

- A. Tech A only
- B. Tech B only
- C. Neither Tech A nor Tech B
- D. Both Tech A and Tech B

32. A heavy-duty truck PM inspection finds driveshaft U-joint wear along with vibration complaints. The most likely common cause is:

- A. Failed individual U-joints unrelated to vibration
- B. U-joint wear producing driveline vibration
- C. Failed engine mounts unrelated to driveshaft
- D. Failed cooling system unrelated to driveshaft

33. A heavy-duty truck PM inspection finds drive axle leak along with brake contamination at the affected wheel. The most likely common cause is:

- A. Drive axle seal failure allowing oil onto brake components
- B. Failed individual brake components unrelated to axle
- C. Failed individual seals unrelated to brake contamination
- D. Failed engine cooling system unrelated to axle

34. Tech A says heavy-duty truck drive train inspection should include verification of components affecting both drive train operation and adjacent systems. Tech B says drive train issues can affect brake operation, steering, and tire wear. 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 PM inspection finds transmission fluid leak along with chassis contamination on the underside. The most likely common cause is:

- A. Failed individual transmission components unrelated to chassis

- B. Failed engine cooling system unrelated to transmission
- C. Failed individual seals unrelated to transmission location
- D. Transmission seal or gasket failure depositing fluid on chassis below

36. A heavy-duty truck PM inspection finds brake adjustment issues along with multiple chamber stroke increases. The most likely common cause is:

- A. Brake lining wear progression requiring system-wide adjustment
- B. Failed individual chambers unrelated to common cause
- C. Failed individual slack adjusters unrelated to lining wear
- D. Failed engine cooling system unrelated to brakes

37. A heavy-duty truck PM inspection finds brake performance issues along with air system pressure loss. The most likely common cause is:

- A. Failed individual brake components unrelated to air system
- B. Failed individual air components unrelated to brake performance
- C. Air system leak affecting brake operation
- D. Failed engine cooling system unrelated to brakes

38. Tech A says heavy-duty truck brake PM inspection should include verification of components affecting brake operation and adjacent systems. Tech B says brake issues can affect tire wear, wheel security, and overall vehicle safety. 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

39. A heavy-duty truck PM inspection finds brake drum heat damage along with bearing damage at the affected wheels. The most likely common cause is:

- A. Brake drag generating excessive heat affecting drum and bearings
- B. Failed individual drums unrelated to bearing damage
- C. Failed individual bearings unrelated to drum damage
- D. Failed engine cooling system unrelated to brakes

40. A heavy-duty truck PM inspection finds brake hose damage along with chassis contamination. The most likely common cause is:

- A. Failed individual brake hoses unrelated to chassis
- B. Failed individual chassis components unrelated to brake hoses
- C. Failed engine cooling system unrelated to brakes
- D. Chassis condition causing brake hose abrasion damage

41. A heavy-duty truck PM inspection finds parking brake performance issues along with spring brake chamber damage. The most likely common cause is:

- A. Failed individual chambers unrelated to parking brake
- B. Spring brake chamber failure affecting parking brake operation
- C. Failed individual parking brake components unrelated to chambers
- D. Failed engine cooling system unrelated to brakes

42. Tech A says heavy-duty truck brake system PM inspection should include verification of FMCSA out-of-service criteria. Tech B says comprehensive brake inspection per FMCSA prevents out-of-service findings during roadside 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

43. A heavy-duty truck PM inspection finds air dryer issues along with general air system contamination. The most likely common cause is:

- A. Air dryer failure allowing moisture and contamination throughout the air system
- B. Failed individual components unrelated to air dryer
- C. Failed engine cooling system unrelated to air system
- D. Failed individual air system components unrelated to air dryer

44. A heavy-duty truck PM inspection finds steering linkage wear along with abnormal tire wear at the steer position. The most likely common cause is:

- A. Failed individual tires unrelated to steering
- B. Failed individual steering components unrelated to tire wear
- C. Failed engine mounts unrelated to steering or tires
- D. Steering linkage wear causing alignment issues and abnormal tire wear

45. A heavy-duty truck PM inspection finds suspension component wear along with frame stress damage at suspension mounting areas. The most likely common cause is:

- A. Failed individual suspension components unrelated to frame
- B. Operating condition affecting both suspension components and frame mounting areas
- C. Failed individual frame areas unrelated to suspension
- D. Failed engine cooling system unrelated to suspension or frame

46. Tech A says heavy-duty truck suspension PM inspection should include verification of components affecting suspension operation and adjacent systems. Tech B says suspension issues can affect steering, tire wear, and frame stress. 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

47. A heavy-duty truck PM inspection finds shock absorber failure along with abnormal tire wear pattern. The most likely common cause is:

- A. Failed individual tires unrelated to shock absorbers
- B. Failed individual shocks unrelated to tire wear
- C. Failed engine mounts unrelated to shocks or tires
- D. Shock absorber failure allowing excessive tire bouncing and wear pattern

48. A heavy-duty truck PM inspection finds abnormal tire wear at one position along with suspension component wear at the same position. The most likely common cause is:

- A. Failed individual tires unrelated to suspension
- B. Suspension condition causing alignment issues and abnormal tire wear at the position
- C. Failed individual suspension components unrelated to tire wear
- D. Failed engine mounts unrelated to position-specific issues

49. A heavy-duty truck PM inspection finds wheel mounting issues along with brake performance complaints at the affected wheel. The most likely common cause is:

- A. Wheel mounting issues affecting brake component alignment

- B. Failed individual brake components unrelated to wheel mounting
- C. Failed individual wheel mounting unrelated to brake performance
- D. Failed engine cooling system unrelated to wheels

50. A heavy-duty truck PM inspection finds tire pressure loss along with valve stem damage. The most likely common cause is:

- A. Failed individual tires unrelated to valve stems
- B. Failed individual pressures unrelated to valve damage
- C. Valve stem damage causing tire pressure loss
- D. Failed engine cooling system unrelated to tires

# PRACTICE EXAM 7: ANSWER KEY AND EXPLANATIONS

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1. B — Coolant level low or air-bound system affecting both heat transfer functions. Engine overheating with poor cab heating points to coolant flow issues, with low coolant level or air-bound system being the most common cause that affects both engine cooling and heater core heat transfer. Both functions depend on coolant flow and contact.
2. D — Loose or corroded primary chassis ground or battery connection. Engine performance issues with electrical system fault codes point to a common-element electrical fault, with primary chassis ground or battery connection being the most likely cause. Multiple coincidental component failures are statistically rare.
3. A — SCR system fault triggering engine derate per emissions strategy. DEF system fault codes with reduced engine power are the classic signature of emissions strategy engine derate, where SCR system faults trigger reduced engine power to enforce emissions compliance. This is the engineered behavior of modern engines.
4. C — Both Tech A and Tech B. Heavy-duty truck engine cooling fan operation affects both engine cooling (radiator airflow) and A/C condenser performance (condenser airflow), since both share the cooling stack. Fan failures can affect multiple vehicle systems simultaneously when the fan supports multiple cooling functions.
5. A — Failed cooling fan or fan clutch affecting cooling capacity under load. Cooling fan operation issues with overheating during high-load operation point to fan or fan clutch issues, with inadequate fan operation reducing cooling capacity when load increases. Fan operation verification under load is required.
6. D — Cylinder head gasket failure allowing coolant into oil and pressure loss. Engine oil contamination with cooling system pressure loss is the classic signature of cylinder head gasket failure, where the gasket fails between cooling and oil galleries. This produces both symptoms simultaneously.
7. B — Restricted air filter directly causing performance issues. Air filter restriction at red zone with engine performance complaints points directly to the filter as the cause, with restricted airflow reducing combustion efficiency and engine performance. The relationship is direct.
8. C — Both Tech A and Tech B. Heavy-duty truck engine performance issues can produce engine fault codes that should be retrieved during PM inspection because codes provide diagnostic

information. Fault code retrieval provides diagnostic information about developing engine issues, allowing service before symptoms worsen.

9. A — Loose engine mounts allowing excessive engine movement and vibration. Engine vibration with mounting hardware looseness points directly to loose engine mounts, with the looseness allowing excessive engine movement that produces vibration. Mounting verification and tightening addresses both symptoms.
10. D — Worn engine internal components allowing oil into combustion chambers. Excessive engine oil consumption with blue exhaust smoke is the classic signature of internal engine wear, with oil bypassing worn rings or valve seals into the combustion chambers. Both symptoms result from the same internal wear.
11. C — Both Tech A and Tech B. Heavy-duty truck engine PM inspection should include verification of engine and emissions system integration because they are interconnected. Modern engine and emissions systems are interconnected and require integrated inspection approach to identify issues that span both systems.
12. A — Loose or corroded primary battery or ground connection. Engine fault codes with intermittent operation issues point to a common-element electrical fault, with primary battery or ground connection issues being the most likely cause. Multiple coincidental issues are statistically rare.
13. D — Loose or corroded primary chassis ground affecting multiple systems. Engine cooling system issues with intermittent gauge readings point to a common-element electrical fault, with primary chassis ground issues being the most likely cause that affects both engine sensors and gauge readings.
14. B — Charge air cooler leak reducing intake air pressure and engine performance. Charge air cooler damage with reduced engine performance points directly to the cooler as the cause, with leaks reducing intake air pressure and engine boost. The relationship is direct.
15. C — Cab mounting issues affecting overall cab stability and mirror vibration. Cab vibration with mirror vibration issues points to cab mounting issues, with cab stability problems producing both general cab vibration and specific mirror vibration. Cab mounting inspection identifies the cause.
16. A — Door alignment or hinge wear affecting both door operation and seal contact. Cab door operation issues with weather seal damage point to door alignment or hinge wear, with the alignment affecting both door operation and seal contact. Both symptoms result from the same alignment condition.
17. D — Both Tech A and Tech B. Heavy-duty truck cab inspection should include verification of cab structural integrity and mounting integrity, since both affect overall cab safety. Cab mounting issues can affect cab stability, door operation, and overall safety, with mounting being a foundational safety element.

18. B — Loose or corroded primary chassis ground or battery connection. Windshield wiper issues with electrical system fault codes point to a common-element electrical fault, with primary chassis ground or battery connection issues being the most likely cause. Connection verification identifies the fault.
19. C — Cab interior mounting hardware loosening affecting multiple cab components. Seat belt issues with seat operation issues point to cab interior mounting hardware loosening, with the looseness affecting multiple cab components. Mounting hardware inspection identifies the cause.
20. A — Both Tech A and Tech B. Heavy-duty truck cab PM inspection should include verification of multiple cab safety systems because they work together for overall safety. Comprehensive cab inspection identifies developing issues across all cab systems, supporting proactive maintenance.
21. A — Loose or corroded primary chassis ground or battery connection. Multi-module fault codes without recent service point to a common-element electrical fault, with primary chassis ground or battery connection being the most likely cause. Multiple coincidental module failures are statistically rare.
22. C — Charging system fault affecting battery state of charge. Battery state of charge issues with charging system warnings point directly to charging system faults, with the warnings indicating the system is not maintaining proper battery charge. Charging system investigation identifies the cause.
23. B — Both Tech A and Tech B. Heavy-duty truck electrical system PM inspection should include scan tool fault code retrieval from all modules because each module may have independent issues. Comprehensive code retrieval identifies developing electrical issues across all vehicle systems for proactive service.
24. D — Loose or corroded primary chassis ground or battery connection. Multiple lighting circuit issues with general electrical warnings point to a common-element electrical fault, with primary chassis ground or battery connection issues being the most likely cause. Multiple coincidental circuit failures are statistically rare.
25. A — Loose or corroded power supply or ground affecting multiple modules. Intermittent dash gauge issues with intermittent module communication faults point to power supply or ground connection problems affecting multiple modules. Verification at primary connections identifies the fault.
26. C — Operating condition (overload, road condition) affecting both frame and suspension. Frame crack development with suspension component wear points to operating conditions, with overload or rough road conditions affecting both frame stress and suspension wear. Investigation of operating conditions identifies the underlying cause.
27. B — High-stress operation at fifth wheel area affecting both fifth wheel and frame. Fifth wheel mounting issues with frame crack development at the fifth wheel area point to high-stress

operation, with the fifth wheel area being subject to high stress that affects both fifth wheel and frame structural integrity.

28. D — Both Tech A and Tech B. Heavy-duty truck frame inspection should include component mounting verification because mounting affects frame integrity and component operation. Loose component mounting can affect frame integrity (additional stress) and component operation (movement, vibration), requiring inspection and proper torque.
29. A — Salt or chemical exposure affecting frame, brake lines, and air lines. Frame corrosion with brake line and air line damage at the corrosion area points to environmental exposure, with salt or chemical exposure affecting all metal components in the area. Environmental control or protection addresses the underlying cause.
30. C — Crossmember structural compromise affecting load distribution and component mounting. Crossmember damage with component mounting failures points to crossmember structural compromise, with the compromise affecting load distribution that places excessive stress on component mounts.
31. D — Both Tech A and Tech B. Heavy-duty truck frame inspection identifies issues that affect multiple vehicle systems because frame is the foundation for all components. Frame integrity affects suspension, drivetrain, and component mounting throughout the vehicle, making frame condition important for overall vehicle integrity.
32. B — U-joint wear producing driveline vibration. Driveshaft U-joint wear with vibration complaints points directly to the U-joint wear as the cause of vibration, with worn U-joints producing driveline vibration that the driver experiences. Both symptoms result from the same U-joint wear.
33. A — Drive axle seal failure allowing oil onto brake components. Drive axle leak with brake contamination at the affected wheel points to drive axle seal failure, with the leaked oil reaching brake components on the same wheel. Seal replacement and brake cleaning are required.
34. C — Both Tech A and Tech B. Heavy-duty truck drive train inspection should include verification of components affecting both drive train operation and adjacent systems because of system interdependence. Drive train issues can affect brake operation (contamination), steering (vibration), and tire wear (driveline angle issues).
35. D — Transmission seal or gasket failure depositing fluid on chassis below. Transmission fluid leak with chassis contamination on the underside points to transmission seal or gasket failure, with the leaked fluid depositing on chassis components below the leak source. Investigation identifies the specific seal or gasket.
36. A — Brake lining wear progression requiring system-wide adjustment. Brake adjustment issues with multiple chamber stroke increases point to brake lining wear progression across the system,

with all chambers compensating for lining wear through increased stroke. System-wide service may be required.

37. C — Air system leak affecting brake operation. Brake performance issues with air system pressure loss point directly to the air system leak as the cause, with insufficient pressure affecting brake chamber operation. Leak identification and repair addresses both symptoms.
38. B — Both Tech A and Tech B. Heavy-duty truck brake PM inspection should include verification of components affecting brake operation and adjacent systems because brakes interact with other systems. Brake issues can affect tire wear (drag), wheel security (heat damage), and overall vehicle safety.
39. A — Brake drag generating excessive heat affecting drum and bearings. Brake drum heat damage with bearing damage at the affected wheels points to brake drag, with the drag generating excessive heat that affects both brake drums and adjacent wheel bearings. Brake adjustment verification is required.
40. D — Chassis condition causing brake hose abrasion damage. Brake hose damage with chassis contamination points to chassis condition causing the hose abrasion, with the chassis condition (debris, sharp edges) producing the abrasion damage. Addressing the chassis condition prevents recurrence.
41. B — Spring brake chamber failure affecting parking brake operation. Parking brake performance issues with spring brake chamber damage point directly to chamber failure, with the chamber being the actuation source for parking brake operation. Chamber replacement addresses both symptoms.
42. C — Both Tech A and Tech B. Heavy-duty truck brake system PM inspection should include verification of FMCSA out-of-service criteria to identify violations before roadside inspection. Comprehensive brake inspection per FMCSA prevents out-of-service findings during roadside inspection by addressing issues during PM service.
43. A — Air dryer failure allowing moisture and contamination throughout the air system. Air dryer issues with general air system contamination point directly to air dryer failure, with the dryer being the source of moisture removal for the entire air system. Failure allows system-wide contamination.
44. D — Steering linkage wear causing alignment issues and abnormal tire wear. Steering linkage wear with abnormal tire wear at the steer position points to the linkage wear as the cause, with the wear producing alignment issues that produce the tire wear pattern. Both symptoms result from the same wear.
45. B — Operating condition affecting both suspension components and frame mounting areas. Suspension component wear with frame stress damage at suspension mounting areas points to operating conditions, with the conditions affecting both suspension and frame areas. Investigation of operating conditions identifies the underlying cause.

46. A — Both Tech A and Tech B. Heavy-duty truck suspension PM inspection should include verification of components affecting suspension operation and adjacent systems. Suspension issues can affect steering (linkage stress), tire wear (alignment), and frame stress (load transfer), making comprehensive inspection important.
47. D — Shock absorber failure allowing excessive tire bouncing and wear pattern. Shock absorber failure with abnormal tire wear pattern points to the shock failure as the cause, with failed shocks allowing excessive tire bouncing that produces the irregular wear pattern. Shock replacement addresses both symptoms.
48. B — Suspension condition causing alignment issues and abnormal tire wear at the position. Abnormal tire wear at one position with suspension component wear at the same position points to suspension condition, with the wear producing alignment issues that produce the tire wear pattern. Suspension service addresses both symptoms.
49. A — Wheel mounting issues affecting brake component alignment. Wheel mounting issues with brake performance complaints at the affected wheel point to mounting issues, with improper wheel mounting affecting brake component alignment and operation. Mounting service addresses both symptoms.
50. C — Valve stem damage causing tire pressure loss. Tire pressure loss with valve stem damage points directly to valve stem damage as the cause of pressure loss, with the damage providing the leak path. Valve stem replacement addresses both symptoms.