

PRACTICE EXAM 5: T8 SIMULATION

(50 QUESTIONS)

1. TMC Recommended Practice for heavy-duty diesel engine PM inspection specifies:

- A. Coolant testing, oil sampling, and component inspection at scheduled intervals
- B. Visual inspection only at every PM
- C. Component replacement at fixed mileage intervals
- D. Pressure testing only when complaints reported

2. Per OEM service procedures, the proper engine oil sampling procedure is:

- A. Sample from the drain stream at end of drain
- B. Sample from the cold oil at start of drain
- C. Sample from mid-stream during drain at operating temperature
- D. Sample from the oil pan after complete drain

3. The TMC RP for heavy-duty diesel engine cooling system service includes:

- A. Coolant replacement at fixed intervals only
- B. Visual inspection only without testing
- C. Pressure testing only without component inspection
- D. Coolant testing, SCA verification, and pressure testing at scheduled intervals

4. Per EPA regulations, heavy-duty diesel engine SCR systems must:

- A. Operate without DEF for emissions compliance
- B. Use DEF meeting ISO 22241 specifications
- C. Use DEF without specification requirements
- D. Operate only when DEF is below specification

5. TMC RP for heavy-duty diesel engine air filter service specifies:

- A. Replacement when restriction reaches OEM specification
- B. Replacement at fixed mileage intervals only
- C. Cleaning and reuse without replacement
- D. Replacement only when complaints reported

6. Per OEM service procedures, heavy-duty diesel engine fuel filter inspection includes:

- A. Filter restriction measurement only
- B. Water separator drainage only
- C. Filter element appearance only
- D. Restriction measurement, water separator drainage, and replacement per specification

7. Tech A says heavy-duty diesel engine DEF quality must meet ISO 22241 specifications. Tech B says contaminated DEF can damage SCR catalysts and produce emissions 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

8. Per OEM service procedures, heavy-duty diesel engine cooling system pressure testing uses:

- A. 50 psi above operating pressure
- B. OEM-specified test pressure with leak verification
- C. Atmospheric pressure only
- D. Maximum compressor output pressure

9. The TMC RP for heavy-duty diesel engine drive belt inspection includes:

- A. Visual inspection for cracks, glazing, 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. Tech A says heavy-duty diesel engine SCA test strips provide quick concentration verification. Tech B says SCA testing should be performed at scheduled PM intervals. 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

11. Per EPA regulations, heavy-duty diesel engine emissions system inspection must verify:

- A. Oil consumption levels only

- B. Coolant temperature only
- C. DEF level, DEF quality, and SCR system fault codes
- D. Engine power output only

12. The TMC RP for heavy-duty diesel engine oil sampling interval is:

- A. At every oil change service
- B. Annual sampling regardless of service
- C. Quarterly sampling regardless of service
- D. Only when complaints reported

13. Tech A says heavy-duty diesel engine charge air cooler inspection should include leak testing. Tech B says charge air cooler leaks reduce engine performance and emissions compliance. 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

14. Per OEM service procedures, heavy-duty diesel engine air filter restriction measurement uses:

- A. Pressure gauge at the engine outlet
- B. Restriction gauge at the air intake system per OEM specification
- C. Vacuum gauge at the exhaust system
- D. Temperature measurement at the air intake

15. Per FMCSA requirements, heavy-duty truck windshield inspection criteria includes:

- A. No damage in driver's primary visual field exceeding specified size
- B. No damage anywhere on the windshield
- C. Damage acceptable if reported to fleet management
- D. Damage acceptable if outside the cab structure

16. Per FMCSA requirements, heavy-duty truck seat belt inspection requires:

- A. Visual inspection only without functional testing
- B. Functional testing only without visual inspection
- C. Replacement at fixed mileage intervals
- D. Functional operation, anchor security, and webbing condition

17. The TMC RP for heavy-duty truck cab mirror inspection includes:

- A. Mirror condition only
- B. Mounting integrity only
- C. Mirror condition, mounting integrity, and adjustment capability
- D. Adjustment capability only

18. Per FMCSA requirements, heavy-duty truck cab door operation requires:

- A. Latch security only
- B. Functional latch, hinge operation, and proper closure
- C. Hinge operation only
- D. Door alignment only

19. Tech A says heavy-duty truck windshield wiper inspection should verify operation across all speeds. Tech B says wiper blade condition affects visibility and is part of standard PM inspection. 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

20. Per OEM service procedures, heavy-duty truck hood operation inspection includes:

- A. Latch security, hinge operation, and structural integrity
- B. Latch security only
- C. Hinge operation only
- D. Structural integrity only

21. The TMC RP for heavy-duty truck battery PM inspection includes:

- A. Visual inspection only without testing
- B. Visual inspection, open-circuit voltage, and load testing as needed
- C. Replacement at fixed mileage intervals
- D. Open-circuit voltage measurement only

22. Per OEM service procedures, heavy-duty truck alternator output verification is performed:

- A. Under load with specified voltage and current measurements
- B. At idle without load
- C. Without measurement, by visual inspection only

D. Only when complaints reported

23. Tech A says heavy-duty truck PM inspection should include scan tool fault code retrieval from all modules. Tech B says fault codes provide diagnostic information for proactive 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

24. Per FMCSA requirements, heavy-duty truck headlight inspection requires:

A. One functional headlight is acceptable

B. Functional headlights without aim verification

C. Functional headlights at all times only

D. Two functional headlights with proper aim per FMVSS

25. The TMC RP for heavy-duty truck wiring harness inspection includes:

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

B. Replacement at fixed mileage intervals

C. Functional testing only without visual inspection

D. Visual inspection only without connector verification

26. The TMC RP for heavy-duty truck frame inspection includes:

A. Visual inspection at high-stress areas only

- B. Pressure testing only without visual inspection
- C. Visual inspection at all areas including high-stress points and crossmembers
- D. Replacement at fixed mileage intervals

27. Per OEM service procedures, heavy-duty truck frame crack repair must:

- A. Use any welding procedure available
- B. Follow OEM-specified repair procedures with approved methods
- C. Apply paint to seal the crack
- D. Drill stop holes at the crack ends

28. Tech A says heavy-duty truck frame fastener torque should be verified at scheduled PM intervals. Tech B says loose frame fasteners can lead to additional damage and component failure. 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. Per OEM service procedures, heavy-duty truck fifth wheel inspection includes:

- A. Visual inspection, lubrication verification, and operational testing
- B. Lubrication only without inspection
- C. Visual inspection only without operational testing
- D. Replacement at fixed mileage intervals

30. The TMC RP for heavy-duty truck frame corrosion inspection includes:

- A. Visual inspection only without measurement
- B. Replacement only when structural failure occurs
- C. Visual inspection plus thickness measurement at affected areas
- D. Application of paint to prevent further corrosion

31. Tech A says heavy-duty truck crossmember inspection identifies developing structural issues. Tech B says crossmember integrity affects overall frame structure and load distribution. 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. The TMC RP for heavy-duty truck driveshaft U-joint inspection specifies:

- A. Visual inspection only without movement check
- B. Visual inspection plus play verification through movement
- C. Lubrication only without inspection
- D. Replacement at fixed mileage intervals

33. Per OEM service procedures, heavy-duty truck transmission fluid inspection requires:

- A. Fluid level verification per specific OEM procedure
- B. Visual inspection of fluid color only
- C. Replacement at fixed mileage intervals only

D. Inspection only when complaints reported

34. Tech A says heavy-duty truck drive axle PM inspection should include fluid level and breather condition. Tech B says proper breather operation prevents pressure buildup and seal failures. 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. The TMC RP for heavy-duty truck driveshaft inspection includes:

A. U-joint condition only

B. Slip yoke condition only

C. Tube straightness only

D. U-joint condition, slip yoke condition, and tube straightness

36. Per FMCSA requirements, heavy-duty truck air brake system buildup time must be:

A. 0 to 90 psi within 3 minutes at idle

B. 0 to 60 psi within 5 minutes at idle

C. 0 to 120 psi within 1 minute at idle

D. 0 to 100 psi within 10 minutes at idle

37. The FMCSA out-of-service criterion for air brake leakage at applied position is:

A. 1 psi per minute or less

- B. 2 psi per minute or less
- C. Greater than 3 psi per minute on a single vehicle
- D. Greater than 5 psi per minute on a single vehicle

38. Per FMCSA requirements, heavy-duty truck brake lining minimum thickness is:

- A. 2mm at the thinnest point
- B. 4mm at the thinnest point or per OEM specification
- C. 8mm at the thinnest point
- D. 12mm at the thinnest point

39. Tech A says heavy-duty truck air brake chamber pushrod travel must be within FMCSA limits. Tech B says exceeding the readjustment limit is an out-of-service condition. 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

40. The TMC RP for heavy-duty truck brake hose inspection includes:

- A. Visual inspection for cracks, bulges, abrasion, and proper routing
- B. Pressure testing only without visual inspection
- C. Replacement at fixed mileage intervals
- D. Visual inspection only without routing verification

41. Per FMCSA requirements, heavy-duty truck low-pressure warning device must activate at:

- A. 100 psi or higher
- B. 80 psi or higher
- C. Less than 60 psi
- D. Less than 30 psi

42. Tech A says heavy-duty truck brake drum inspection should include diameter measurement against OEM specifications. Tech B says drums beyond OEM service limits require replacement. 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

43. Per FMCSA requirements, heavy-duty truck parking brake performance verification requires:

- A. Holding on a level surface only
- B. Holding on a 5% grade only
- C. Holding on a 20% grade only
- D. Holding per FMCSA test procedure on specified slope

44. The FMCSA out-of-service criterion for heavy-duty truck steering wheel free play is:

- A. More than 5 degrees
- B. Greater than the OEM specification or 10 degrees
- C. More than 30 degrees

D. More than 45 degrees

45. The TMC RP for heavy-duty truck steering linkage inspection includes:

- A. Visual inspection plus movement and play verification
- B. Lubrication only without inspection
- C. Visual inspection only without movement check
- D. Replacement at fixed mileage intervals

46. Per OEM service procedures, heavy-duty truck kingpin inspection requires:

- A. Visual inspection only without measurement
- B. Lubrication only without inspection
- C. Replacement at fixed mileage intervals
- D. Vertical and horizontal play measurement against OEM specifications

47. The TMC RP for heavy-duty truck suspension PM inspection includes:

- A. Leaf spring condition only
- B. Shock absorber condition only
- C. Leaf spring condition, shock absorber condition, and bushing condition
- D. Bushing condition only

48. Per FMCSA requirements, the tread depth minimum for heavy-duty truck steer tires is:

- A. 4/32 inch
- B. 6/32 inch

C. 8/32 inch

D. 2/32 inch

49. The TMC RP for heavy-duty truck tire inspection includes:

A. Tread depth measurement only

B. Inflation pressure measurement only

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

D. Visual inspection only without measurements

50. Per OEM service procedures, heavy-duty truck wheel lug nut re-torque requirement after installation is:

A. Re-torque is not required

B. Re-torque at next PM service

C. Re-torque at 5,000 miles

D. Re-torque at 50 to 100 miles after installation

PRACTICE EXAM 5: ANSWER KEY AND EXPLANATIONS

1. A — Coolant testing, oil sampling, and component inspection at scheduled intervals. TMC RP for heavy-duty diesel engine PM inspection specifies coolant testing (chemistry verification), oil sampling (wear and contamination analysis), and component inspection (visual condition assessment) at scheduled intervals. Comprehensive inspection identifies developing issues across all engine systems.
2. C — Sample from mid-stream during drain at operating temperature. Proper engine oil sampling samples from mid-stream during drain at operating temperature, providing representative sample of suspended particles and contamination. Cold or end-of-drain samples produce non-representative results that affect analysis accuracy.
3. D — Coolant testing, SCA verification, and pressure testing at scheduled intervals. TMC RP for heavy-duty diesel engine cooling system service includes coolant testing (chemistry verification), SCA verification (inhibitor concentration), and pressure testing (leak detection) at scheduled intervals. Comprehensive service identifies developing issues.
4. B — Use DEF meeting ISO 22241 specifications. EPA regulations require heavy-duty diesel engine SCR systems to use DEF meeting ISO 22241 specifications, ensuring proper DEF chemistry for SCR catalyst operation. Off-specification DEF can damage SCR catalysts and produce emissions failures.
5. A — Replacement when restriction reaches OEM specification. TMC RP for heavy-duty diesel engine air filter service specifies replacement when restriction reaches OEM specification, providing performance-based service rather than time-based replacement. This optimizes filter life while preventing performance loss.
6. D — Restriction measurement, water separator drainage, and replacement per specification. OEM fuel filter inspection includes restriction measurement (flow capacity), water separator drainage (water removal), and replacement per specification (interval-based service). Comprehensive service maintains fuel system integrity.
7. C — Both Tech A and Tech B. Heavy-duty diesel engine DEF quality must meet ISO 22241 specifications because off-specification DEF damages SCR catalysts. Contaminated DEF can damage SCR catalysts (urea concentration outside specification) and produce emissions issues (NO_x conversion failures).

8. B — OEM-specified test pressure with leak verification. OEM cooling system pressure testing uses OEM-specified test pressure with leak verification, providing safe and effective leak detection. Specific test pressures vary by engine but follow OEM specifications.
9. A — Visual inspection for cracks, glazing, wear, plus tension verification. TMC RP for heavy-duty diesel engine drive belt inspection includes visual inspection (cracks, glazing, wear) plus tension verification (proper tension for drive operation). Both elements identify developing belt issues before failure.
10. D — Both Tech A and Tech B. Heavy-duty diesel engine SCA test strips provide quick concentration verification, allowing technicians to verify SCA levels without laboratory testing. SCA testing should be performed at scheduled PM intervals because SCA depletes during operation and requires monitoring for replenishment.
11. C — DEF level, DEF quality, and SCR system fault codes. EPA emissions system inspection must verify DEF level (sufficient quantity), DEF quality (proper specification), and SCR system fault codes (operational issues). Comprehensive verification ensures emissions compliance.
12. A — At every oil change service. TMC RP for heavy-duty diesel engine oil sampling interval is at every oil change service, providing systematic monitoring of engine condition and oil contamination. This frequency allows trending analysis to identify developing issues.
13. D — Both Tech A and Tech B. Heavy-duty diesel engine charge air cooler inspection should include leak testing because leaks affect engine performance and emissions. Charge air cooler leaks reduce engine performance (reduced boost air to combustion) and emissions compliance (combustion efficiency reduction).
14. B — Restriction gauge at the air intake system per OEM specification. OEM air filter restriction measurement uses a restriction gauge at the air intake system per OEM specification, providing direct indication of filter condition. Gauge placement and specification match the OEM design.
15. A — No damage in driver's primary visual field exceeding specified size. FMCSA windshield inspection criteria require no damage in driver's primary visual field exceeding specified size limits (typically 1.25 inches or larger). Damage outside the primary field may be acceptable per specific criteria.
16. D — Functional operation, anchor security, and webbing condition. FMCSA seat belt inspection requires functional operation (proper retraction and latching), anchor security (mounting integrity), and webbing condition (no cuts or damage). Comprehensive inspection ensures proper occupant protection.
17. C — Mirror condition, mounting integrity, and adjustment capability. TMC RP for heavy-duty truck cab mirror inspection includes mirror condition (glass and frame), mounting integrity (secure attachment), and adjustment capability (driver positioning). All elements affect proper visibility.

18. B — Functional latch, hinge operation, and proper closure. FMCSA cab door operation requires functional latch (security), hinge operation (smooth movement), and proper closure (sealing and alignment). All elements are required for safe cab door operation.
19. D — Both Tech A and Tech B. Heavy-duty truck windshield wiper inspection should verify operation across all speeds because each speed must function for proper visibility in different conditions. Wiper blade condition affects visibility and is part of standard PM inspection per TMC RP.
20. A — Latch security, hinge operation, and structural integrity. OEM hood operation inspection includes latch security (preventing unintended opening), hinge operation (proper raise and lower), and structural integrity (preventing failure). Comprehensive inspection identifies developing issues.
21. B — Visual inspection, open-circuit voltage, and load testing as needed. TMC RP for 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 (capacity verification). Comprehensive inspection identifies developing issues.
22. A — Under load with specified voltage and current measurements. OEM alternator output verification is performed under load with specified voltage and current measurements, providing accurate assessment of alternator capability under operating conditions. Idle testing without load may show normal voltage despite reduced capability.
23. C — Both Tech A and Tech B. Heavy-duty truck PM inspection should include scan tool fault code retrieval from all modules because codes provide diagnostic information not visible through inspection. Fault codes provide diagnostic information for proactive service, enabling repairs before failures occur.
24. D — Two functional headlights with proper aim per FMVSS. FMCSA headlight inspection requires two functional headlights with proper aim per FMVSS standards, ensuring adequate road illumination for safe operation. Both headlights must function and meet aim specifications.
25. A — Visual inspection for damage, chafing, and connector integrity. TMC RP for heavy-duty truck wiring harness inspection includes visual inspection for damage (insulation cuts), chafing (wear from movement), and connector integrity (secure connections). This identifies developing electrical issues.
26. C — Visual inspection at all areas including high-stress points and crossmembers. TMC RP for heavy-duty truck frame inspection includes visual inspection at all areas including high-stress points (rivet holes, welded joints) and crossmembers. Comprehensive inspection identifies developing structural issues.
27. B — Follow OEM-specified repair procedures with approved methods. OEM frame crack repair must follow OEM-specified repair procedures with approved methods, since improper repair can

mask issues and lead to catastrophic failure. OEM procedures specify acceptable welding, drilling, and reinforcement methods.

28. D — Both Tech A and Tech B. Heavy-duty truck frame fastener torque should be verified at scheduled PM intervals because fastener condition affects frame integrity. Loose frame fasteners can lead to additional damage (component movement, increased stress) and component failure (frame cracks, mounting failures).
29. A — Visual inspection, lubrication verification, and operational testing. OEM fifth wheel inspection includes visual inspection (component condition), lubrication verification (proper greasing), and operational testing (engagement and release function). All elements ensure proper fifth wheel service.
30. C — Visual inspection plus thickness measurement at affected areas. TMC RP for heavy-duty truck frame corrosion inspection includes visual inspection (surface condition) plus thickness measurement at affected areas (remaining structural capacity). Surface treatment without measurement does not address potential structural compromise.
31. D — Both Tech A and Tech B. Heavy-duty truck crossmember inspection identifies developing structural issues including cracks, loose fasteners, and impact damage. Crossmember integrity affects overall frame structure and load distribution, with crossmember failures potentially affecting frame integrity and component mounting.
32. B — Visual inspection plus play verification through movement. TMC RP for heavy-duty truck driveshaft U-joint inspection includes visual inspection (rust, damage, missing grease) plus play verification through movement (axial and rotational play check). Both elements identify developing U-joint issues.
33. A — Fluid level verification per specific OEM procedure. OEM transmission fluid inspection requires fluid level verification per specific OEM procedure, since procedures vary by transmission type (engine running or off, fluid temperature, level reference points). Following the correct procedure ensures accurate readings.
34. C — Both Tech A and Tech B. Heavy-duty truck drive axle PM inspection should include fluid level and breather condition because both affect axle operation. Proper breather operation prevents pressure buildup and seal failures, with damaged breathers causing pressure-related issues.
35. D — U-joint condition, slip yoke condition, and tube straightness. TMC RP for heavy-duty truck driveshaft inspection includes U-joint condition (wear, damage), slip yoke condition (lubrication, wear), and tube straightness (no bends or damage). All elements affect driveshaft operation and life.
36. A — 0 to 90 psi within 3 minutes at idle. FMCSA requires heavy-duty truck air brake system buildup from 0 to 90 psi within 3 minutes at idle. Inadequate buildup time is an out-of-service condition because it indicates compressor or system issues.

37. C — Greater than 3 psi per minute on a single vehicle. The FMCSA out-of-service criterion for air brake leakage at applied position is greater than 3 psi per minute on a single vehicle. Excessive leakage compromises brake system reliability.
38. B — 4mm at the thinnest point or per OEM specification. FMCSA brake lining minimum thickness is 4mm at the thinnest point, or per OEM specification (whichever is greater). Below this threshold, brake performance is compromised.
39. D — Both Tech A and Tech B. Heavy-duty truck air brake chamber pushrod travel must be within FMCSA limits because excessive travel compromises brake function. Exceeding the readjustment limit is an out-of-service condition requiring service before continued operation.
40. A — Visual inspection for cracks, bulges, abrasion, and proper routing. TMC RP for heavy-duty truck brake hose inspection includes visual inspection for cracks (developing failures), bulges (internal damage), abrasion (chafing), and proper routing (avoiding damage points). Comprehensive inspection identifies developing issues.
41. C — Less than 60 psi. FMCSA low-pressure warning device must activate at less than 60 psi, providing the driver early warning of system pressure loss. Below this pressure, brake performance becomes compromised.
42. A — Both Tech A and Tech B. Heavy-duty truck brake drum inspection should include diameter measurement against OEM specifications because diameter indicates wear status. Drums beyond OEM service limits require replacement because excessive diameter compromises brake performance and can cause heat-related drum failure.
43. D — Holding per FMCSA test procedure on specified slope. FMCSA parking brake performance verification requires holding per FMCSA test procedure on specified slope, with specific procedures defining the test conditions. The parking brake must meet FMCSA test requirements.
44. B — Greater than the OEM specification or 10 degrees. The FMCSA out-of-service criterion for heavy-duty truck steering wheel free play is greater than the OEM specification, with 10 degrees commonly cited for heavy-duty trucks. Excessive free play compromises steering response and vehicle control.
45. A — Visual inspection plus movement and play verification. TMC RP for heavy-duty truck steering linkage inspection includes visual inspection (component condition) plus movement and play verification (mechanical wear identification). Both elements identify developing steering issues.
46. D — Vertical and horizontal play measurement against OEM specifications. OEM kingpin inspection requires vertical and horizontal play measurement against OEM specifications, since both directions of play indicate wear. Measurement provides quantitative wear assessment for service decisions.

47. C — Leaf spring condition, shock absorber condition, and bushing condition. TMC RP for heavy-duty truck suspension PM inspection includes leaf spring condition (load capacity), shock absorber condition (damping function), and bushing condition (mounting integrity). All elements affect suspension operation.
48. A — 4/32 inch. FMCSA tread depth minimum for heavy-duty truck steer tires is 4/32 inch. Below this depth, the tire is out-of-service for steer axle position and must be replaced or moved to a non-steer position.
49. C — Tread depth, sidewall condition, inflation pressure, and tread pattern. TMC RP for heavy-duty truck tire inspection includes tread depth (wear status), sidewall condition (structural integrity), inflation pressure (proper operation), and tread pattern (wear pattern analysis). Comprehensive inspection identifies developing tire issues.
50. D — Re-torque at 50 to 100 miles after installation. OEM wheel lug nut re-torque requirement after installation is at 50 to 100 miles, since initial seating reduces clamp load and re-torque restores specification. Skipping re-torque is a known cause of wheel-off events.