

PRACTICE EXAM 14: CANADIAN 310T TRUCK AND COACH TECHNICIAN SIMULATION (135 QUESTIONS)

This practice exam contains 135 multiple-choice questions, each with four options (A, B, C, and D), matching the format of the Interprovincial Red Seal exam for this trade. Allow about four hours and work without manuals or notes. Choose the single best answer for each question. A score of 70 percent, or 95 correct answers, is the pass mark. Check your answers against the key and explanations at the end of the exam.

1. A technician measures parasitic draw on a delivery truck. How long should the module sleep period be allowed to run before reading the final current?
 - A. Until the engine is cool, since coolant temperature sets the sleep timer
 - B. Only after the batteries are disconnected, so that the meter reads a true zero draw reading
 - C. Until the modules sleep, often 20 minutes or longer, with the meter in series
 - D. About five seconds, because every module sleeps as soon as the key is turned off

2. A terminal tractor idles for most of a shift and repeatedly plugs its diesel particulate filter. Why is passive regeneration not clearing the soot?
 - A. The engine produces no soot at idle, so the filter is being plugged by oil ash
 - B. The filter has a built-in timer that stops soot burning after a fixed number of hours
 - C. Low idle speed raises exhaust gas pressure too far for any oxidation reaction
 - D. Exhaust temperature at idle is too low to oxidize soot, so a parked regeneration is needed

3. A truck pulls to the right after the front tires were replaced and alignment is within specification. What is the best check?
 - A. Swap the front tires side to side and see whether the pull follows the tire
 - B. Increase the tire pressure on the right tire until the pull stops

- C. Replace the steering gear immediately since it pulls to one side whenever the wheel is released
- D. Adjust the toe setting by a large amount to offset the pull

4. A yard tractor's air tanks hold water every morning even though the dryer is cycling. What is the most likely cause?

- A. A single check valve that is leaking air back into the compressor
- B. A parking brake valve that has failed to release the spring brakes
- C. Spent desiccant, or a purge valve that is not exhausting
- D. A governor cut-in setting that is too high for the compressor capacity

5. A yard tractor with a manual transmission slips under load a few weeks after the clutch pedal free play was set to zero. What is the likely cause?

- A. Zero free play keeps the release bearing against the fingers, so the clutch cannot fully engage
- B. A worn countershaft that prevents the clutch from releasing at all
- C. Too much free play pulls the pressure plate away from the disc under heavy load
- D. A seized pilot bearing that is locking the input shaft to the flywheel

6. A terminal tractor in a container yard needs its hydraulic fifth wheel lift cylinder line replaced. What should the technician do before loosening the fitting?

- A. Loosen the fitting slowly with the engine idling so the pump bleeds the pressure
- B. Raise the fifth wheel and block it with a wooden beam so the cylinder can rest under load
- C. Keep the power take-off engaged so the pump holds the lift cylinder in place
- D. Lower the fifth wheel onto its stops, shut down, and cycle the control to release pressure

7. The landing gear on a trailer will not crank down and the handle spins freely. What is the likely cause?

- A. A worn kingpin on the front of the trailer coupling plate

- B. A stripped gear in the landing gear gearbox
- C. A damaged trailer ABS wheel speed sensor on the axle
- D. A leaking air chamber on the trailer's rear axle

8. The lift cylinder of a yard tractor's fifth wheel slowly drifts down under load with the control valve in neutral. What is the likely cause?

- A. A blocked breather on the transmission input shaft
- B. Internal leakage past the piston seals or a leaking holding valve
- C. An overfilled hydraulic reservoir that pushes oil into the cylinder rod end
- D. A worn fifth wheel jaw that releases the kingpin slowly

9. A yard tractor sits unused for weeks between short runs and its batteries repeatedly fail. Which cause is most likely?

- A. Overcharging from a regulator that always holds twelve volts
- B. A starter that draws too little current during cranking
- C. Chronic undercharging that sulphates the plates
- D. A battery case that is too clean to hold the charge

10. A yard tractor with long idle periods shows black oily residue at the exhaust tip and glazed cylinder walls at teardown. What is the usual cause?

- A. A failed fuel pressure regulator forcing excess fuel into the injectors constantly
- B. Contaminated engine oil with too many detergent additives scouring the liners
- C. Overheated pistons from a thermostat that stays shut during the entire shift
- D. Prolonged light-load running causing incomplete combustion and low cylinder temperatures

11. A truck's heater blows cold air even though the engine is at normal temperature and the coolant level looks good. What is the most probable cause?

- A. Air trapped in the heater core, or a heater valve that is not opening
- B. A low refrigerant charge in the air conditioning system
- C. A leaking A/C compressor shaft seal on the engine drive
- D. A clogged cabin air filter that is restricting the blower motor airflow to the vents

12. A tractor's steering is heavy in tight turns at idle but normal at higher engine speed. What should be checked first?

- A. Air dryer purge valve operation at low speed
- B. Rear axle ratio for the correct ring gear and pinion tooth count
- C. Power steering fluid level, belt condition, and pump flow at idle
- D. Cab mount bushings for cracks and wear

13. A tractor's air system builds pressure but cuts out at 760 kPa, while the specification is 860 to 900 kPa. Which component is the first suspect?

- A. The brake chamber pushrod, which controls reservoir pressure
- B. The governor, which controls the cut-out pressure
- C. The foot valve return spring, which controls compressor unloading
- D. The air dryer purge valve, which controls system maximum pressure

14. A clutch grabs and chatters when starting off, and the technician finds oil on the friction disc. Which source is most likely?

- A. A leaking rear main seal or transmission input shaft seal
- B. An air leak at the clutch booster valve or its supply line fitting
- C. A worn clutch brake pressing on the disc
- D. A weak return spring on the clutch pedal

15. A tilting cab on a delivery truck shifts slightly when braking, and the latch warning lamp comes on. What should be done?

- A. Continue driving and report the lamp to the shop at the end of the week
- B. Wedge a block between the cab and the frame rail for the day
- C. Apply grease to the cab mount to stop it from shifting
- D. Park the vehicle, inspect the latch, and repair it before driving again

16. A truck cranks slowly. Battery voltage is good, but a voltage drop of 0.9 V is measured across the positive cable while cranking. What does this indicate?

- A. A battery that is overcharged by the alternator
- B. A flywheel with a damaged ring gear tooth near the pinion
- C. A starter armature that is shorted internally
- D. High resistance in the positive cable

17. Used oil analysis on a delivery truck shows rising fuel dilution, and the driver reports frequent regeneration. Which cause best fits?

- A. Post-injection fuel washing past the piston rings during repeated regenerations
- B. Overfilled crankcase oil being thrown into the fuel tank vent line
- C. A leaking oil cooler allowing fuel to seep in from the coolant side
- D. A worn oil pump pushing oil into the fuel return line at idle

18. A technician sees an insulation fault warning on a hybrid delivery truck. What must be done before touching any orange cable?

- A. Touch the cable gently with a gloved hand to test for voltage
- B. Follow the high-voltage shutdown procedure, wear rated gloves, and verify zero voltage
- C. Spray the connector with water to cool it before disconnecting
- D. Turn the key off and begin work since that removes all voltage

19. A driver reports excess free play at the steering wheel. Which checking order is most sensible?

- A. Replace the front tires first because they affect the steering lash at the wheel
- B. Replace the power steering pump since it creates all lash
- C. Inspect tie rod ends, drag link, kingpins, and steering gear to locate the source of lost motion
- D. Replace the steering wheel first, since play begins at the hub

20. Oil is found in the air tanks of a delivery truck. Which cause is most likely?

- A. A stuck relay valve at the rear axle during parking brake release
- B. Worn compressor rings, or a restricted compressor inlet
- C. A leaking brake chamber diaphragm on the front axle
- D. A governor that cuts in too early after the first brake application

21. A driver finds first and reverse gear hard to engage from a stop with the clutch pedal fully down. What is the most likely cause?

- A. Too much air in the cooling system of the engine and heater core
- B. A worn U-joint on the drive shaft near the rear axle
- C. A restricted fuel filter that limits engine idle speed
- D. A worn or misadjusted clutch brake that is not slowing the shaft

22. A delivery truck's battery charges at idle only after the engine speed is raised, and the belt squeals. What is the most probable cause?

- A. A shorted ignition switch that grounds the regulator
- B. A glow plug relay that is stuck in the closed position
- C. A slipping drive belt or weak tensioner at low rpm
- D. A faulty fuel injection pump that drives the alternator

23. A diesel's mechanical oil pressure gauge reads normal, but the engine module shows a low oil pressure fault. What is the best next check?

- A. Verify with a master gauge, then test the sensor and its wiring
- B. Replace the oil pump since the engine module is always right
- C. Switch to a lighter oil grade to raise the indicated pressure
- D. Clear the fault and ignore it unless the lamp stays on

24. The yard shop pours hydraulic oil from a labelled supplier drum into a smaller can that will sit on a shelf for several days. What does WHMIS 2015 require for the can?

- A. Only the supplier pictograms copied by hand, without any product name
- B. A taped copy of the purchase invoice, since the drum label stays with the drum
- C. A workplace label showing the product identifier and safe-handling information
- D. No label at all, because only flammable liquids need labels at workplaces

25. A trailer ABS lamp stays on after the tractor has air pressure applied. What should the technician do first?

- A. Remove the trailer air lines and wait for the lamp to reset itself
- B. Read the trailer ABS fault codes and check power and sensor wiring
- C. Disable the trailer ABS module and continue to operate
- D. Replace all the trailer tires since they send the speed signal

26. A technician compares two hydraulic oils for a yard tractor. What does a higher viscosity index tell the technician about an oil?

- A. It heats up more slowly while the system is under load
- B. It can hold more water in suspension without harm
- C. It conducts electricity better than other hydraulic oils
- D. Its viscosity changes less as the temperature rises or falls

27. After an axle alignment, the steering wheel sits off-centre while the truck drives straight. What adjustment corrects it?

- A. Adjust the drag link length to centre the steering gear and wheel
- B. Increase the toe-in setting until the wheel turns to the centre
- C. Change the tire pressure on one side until the wheel centres
- D. Replace the steering gear to remove the off-centre position

28. A truck has a smart alternator controlled by the engine module and shows low charging voltage. What should come before replacing the alternator?

- A. Replace the battery cables with a thicker gauge in every case on the truck
- B. Disconnect the data link and bypass the regulator permanently
- C. Increase the belt tension until the alternator pulley cannot turn
- D. Check the charging command with the scan tool

29. After repeated stops, one axle's brake drums show heat checks and blue discolouration while the other axle stays cool. What is the most likely cause?

- A. The steering axle is out of alignment by a small amount on the road
- B. Those brakes are dragging because of a seized adjuster
- C. The compressor is running too long and overheating the air
- D. The driver has applied the parking brake at highway speed

30. A hydraulic clutch on a delivery truck has a soft pedal that sinks slowly. What should be done?

- A. Check the cylinders for leaks and bleed the system
- B. Increase the pedal return spring tension for a firmer feel at the pedal
- C. Replace the clutch disc since the pedal softness comes from wear
- D. Fill the system with engine oil to dampen the pedal travel

31. During a cylinder leakdown test, air escapes audibly at the intake manifold of one cylinder at top dead centre on compression. What does this indicate?

- A. A worn compression ring on that cylinder
- B. A failed head gasket between two cylinders
- C. A leaking intake valve on that cylinder
- D. A leaking exhaust valve on that cylinder

32. The A/C compressor clutch will not engage on a delivery truck. The pressure gauges show nearly zero on both sides. What is the likely reason?

- A. The thermostat is stuck closed and holds the coolant inside the heater circuit
- B. The heater core is plugged with sludge from old coolant
- C. The charge is very low, so the low-pressure switch blocks the clutch
- D. The blower motor resistor is open and blocks the circuit

33. A starter solenoid clicks, the batteries are good, and voltage at the S terminal is present when the key is turned. What is the likely fault?

- A. Burnt contacts inside the solenoid that do not pass motor current
- B. A short circuit in the neutral safety switch wiring
- C. A cracked battery case that leaks acid onto the cable and terminal
- D. A mis-set governor that cuts out the starter early

34. Front tires show feathered edges across the tread with ribs worn smooth on one side. Which alignment angle is most likely wrong?

- A. Axle thrust angle only
- B. Steering axis inclination
- C. Caster
- D. Toe

35. A yard tractor overheats only while idling in a hot yard but runs normally at road speed. What is the most likely cause?

- A. A thermostat that opens too early and holds coolant temperature at a low value
- B. A fan drive that is not engaging, so radiator airflow is low at idle
- C. A radiator cap whose spring is too strong, so coolant cannot return to the tank
- D. A water pump impeller that spins faster as engine speed rises toward the limit

36. An ABS lamp comes on intermittently above 40 km/h. The sensor resistance is within specification. What should be inspected next?

- A. Excess hub end play or tone ring runout that distorts the sensor signal
- B. The compressor discharge line for carbon build-up
- C. The air dryer cartridge for the correct micron rating and size
- D. The brake light switch contacts for corrosion

37. Large metal flakes and bright glitter are found on the magnetic drain plug of a manual transmission, beyond the usual fine paste. What does this indicate?

- A. Normal break-in material that requires no further action
- B. Contamination from a leaking clutch hydraulic line
- C. Advanced internal wear or damage that needs inspection
- D. Excess additive that has settled out of the gear oil

38. With the engine at 1,500 rpm and headlamps on, a truck's charging voltage reads 12.4 V. What does this indicate?

- A. Normal charging, since charging voltage should equal resting battery voltage
- B. A fully charged battery that is rejecting additional current
- C. A starter motor that is drawing current after the engine runs
- D. The charging system is not keeping up and needs an output and wiring test

39. A power window on a truck door is slow and noisy. What is the most likely cause?

- A. A failed fuel pump relay in the engine compartment fuse block
- B. A worn regulator or dry window channel
- C. A leaking brake chamber diaphragm on the front axle
- D. A worn clutch release bearing in the transmission bell housing

40. Front tires on a delivery truck show cupped wear patterns around the tread. What is the most probable cause?

- A. A loose air dryer mount near the frame rail
- B. A worn fifth wheel plate on the rear frame section of the tractor
- C. An overfilled power steering reservoir on the pump
- D. Worn shocks or an out-of-balance condition that lets the tire bounce

41. A wet-sleeve engine shows pitting on the coolant side of the cylinder liners. Which maintenance failure is the most likely cause?

- A. Low coolant additive allowing cavitation corrosion
- B. Using too much antifreeze, which makes the coolant thicker than required
- C. Using distilled water in the mix, which prevents any protective film from forming
- D. Running the engine with a thermostat that opens slightly early in winter

42. A technician finds a bench grinder's extension cord with a damaged ground pin in the yard shop. What should be done?

- A. Break off the ground pin so the plug fits an ungrounded outlet
- B. Tag the cord out of service and replace it before using the grinder
- C. Wrap electrical tape around the damaged pin and keep working
- D. Use the cord only for short jobs while wearing dry gloves

43. A container chassis twist-lock handle on a port trailer is hard to move. What is the best service step?

- A. Weld the twist lock in the closed position for the rest of the shift
- B. Pour penetrating oil on the container corner casting
- C. Clean and lubricate the twist-lock mechanism and check for bent parts
- D. Hammer the handle until it moves freely through its travel

44. A hydraulic system does not reach its working pressure, and the pump is healthy. Which valve is most likely at fault?

- A. A purge valve on the dryer cartridge
- B. A fuel shut-off valve on the supply line to the tank
- C. A compressor unloader valve on the air system
- D. A relief valve stuck partly open or set too low

45. On a tractor-trailer, the trailer brakes apply noticeably late compared with the tractor brakes. Which cause is most likely?

- A. A worn compressor drive gear lowering reservoir pressure
- B. A saturated air dryer cartridge in the tractor
- C. A slow relay valve or pinched line
- D. A damaged hub seal on the tractor drive axle

46. On a manual transmission, the splitter works normally, but the range shift will not engage. Which should be checked first?

- A. The wheel bearing preload on the drive axle hub and spindle assembly
- B. Air supply to the range cylinder, including its filter regulator
- C. The turbocharger actuator rod on the intake side
- D. The primary clutch plate wear on the flywheel

47. Headlights dim when the wipers run. A voltage drop test across the ground circuit reads 0.7 V. What should be done?

- A. Clean or repair the ground connection and recheck
- B. Install a larger fuse in the wiper circuit
- C. Replace both headlamps with a higher wattage pair
- D. Replace the alternator and keep the ground in place

48. A delivery truck takes a very long time to warm up in winter, and the heater output is poor. Coolant temperature never exceeds 65 degrees Celsius. What is the most likely cause?

- A. A thermostat stuck in the open position
- B. A water pump with a worn drive belt that spins too fast
- C. A radiator cap that holds too much pressure in the cooling system
- D. An overfilled coolant overflow bottle with the cap left loose

49. An evaporator in a truck's A/C freezes over, and airflow drops after a long drive. What is the likely cause?

- A. A leaking head gasket on the third cylinder of the engine
- B. A worn universal joint in the front driveshaft
- C. Restricted airflow or a faulty temperature control letting it freeze
- D. Too much heat from a stuck-closed heater valve in the cab

50. How is vertical play in a kingpin checked?

- A. With the wheel removed, measure the brake drum diameter at the lip
- B. With the truck parked, rock the steering wheel and feel for noise
- C. With the engine running, check the hydraulic pressure at the power steering gear pump
- D. With the axle raised, use a dial indicator to measure the up and down movement of the wheel and knuckle

51. A battery electric delivery truck has reduced regenerative braking in very cold weather. What is the most likely reason?

- A. The brake chambers are producing too much hydraulic pressure
- B. The battery management system limits regeneration when cells are cold or full
- C. The wheel nuts are tightened beyond the correct torque on the axle hubs
- D. The tire pressure monitoring system is out of date

52. With the brakes fully applied and the engine off, the air gauge falls faster than the allowed rate. How can the leak be located?

- A. Apply soap solution to fittings and valves and look for bubbles
- B. Disconnect the trailer supply line and watch the service gauge
- C. Release the parking brakes and measure the stroke of each pushrod
- D. Run the engine and listen for the compressor to cycle more quickly

53. An Allison automatic in a delivery truck shudders at about 50 km/h as the converter clutch locks. What is the usual first step?

- A. Replace the output yoke to remove the vibration from the driveline right away
- B. Check the fluid condition and type, and service the fluid and filter if it is degraded
- C. Replace the torque converter as the first step
- D. Raise the engine idle speed until the shudder disappears

54. A relay's coil is energized, but there is no voltage at the output terminal 87 while terminal 30 has battery voltage. What is the conclusion?

- A. The relay coil is shorted and needs a larger fuse
- B. The ground wire for the load is missing somewhere on the vehicle body
- C. The battery needs charging before the relay will conduct
- D. The relay contacts are burnt or open, so replace the relay

55. A technician fits a radiator cap with a lower pressure rating than specified. What is the effect on the cooling system?

- A. The water pump flow increases, so the engine runs cooler under load
- B. The coolant freezes at a lower temperature, so winter protection improves
- C. Coolant boils at a lower temperature, so overflow and overheating occur sooner
- D. Coolant boils at a higher temperature, so the thermostat stays open longer

56. The bolts that secure a terminal tractor's fifth wheel mounting plate are found loose. What is the proper repair?

- A. Weld the bolt heads to the plate so they cannot back out
- B. Tighten them by hand and add thread locker to every bolt head
- C. Replace them with lower-grade bolts that are more flexible
- D. Replace stretched or damaged bolts with the specified grade and torque

57. The trailer's tail lamps are dim. A voltage drop test shows a large drop across the ground pin of the 7-way connector. What is the likely cause?

- A. Corrosion or looseness at the ground pin or its wiring
- B. A blown fuse in the tractor's trailer power circuit
- C. A failed bulb in the left side stop lamp circuit
- D. A weak battery in the trailer's emergency brake circuit

58. While replacing worn linings on a delivery truck, which method best controls the dust inside the drums?

- A. Brush the dust into a pile and sweep it up once the drums have cooled
- B. Wipe the dust with a dry shop rag and shake the rag out in the open
- C. Clean with an enclosed HEPA-filtered vacuum or a low-pressure wet method
- D. Blow the drum clean with compressed air while wearing a paper dust mask

59. Gladhand connections on a trailer leak air at the seal when connected. What is the correct repair?

- A. Apply grease to the outside of the gladhand body
- B. Replace the worn or hardened gladhand seals and check the coupling faces
- C. Wrap the connection with tape to hold the air in
- D. Tighten the hose clamp on the trailer air line

60. A technician replaces a hydraulic hose on a lift circuit. What is the correct specification?

- A. Any air brake tubing cut to the right length and fitted
- B. A hose rated for at least the working pressure, with proper fittings
- C. A fuel hose of the same inner diameter for a good flow rate
- D. A radiator hose clamped on with two worm clamps

61. A technician finds the return springs on a drum brake axle stretched and weak. What is the correct practice?

- A. Replace the return springs as a set on that axle with the proper hardware
- B. Reuse the springs, since only the shoes and linings wear out
- C. Replace only the weakest spring and leave the others in place
- D. Heat the springs with a torch to restore their tension

62. An automatic transmission has been overfilled and is slipping, with foamy fluid. What is the consequence of overfill?

- A. Fluid reduces the load on the converter and extends clutch life
- B. Fluid thickens in the pan and improves shift quality at all temperatures
- C. Fluid is whipped into foam that reduces hydraulic pressure and increases temperature
- D. Fluid lowers the oil level in the engine and starves the pump

63. A diesel has an oil film in the charge-air piping, but the engine runs well and oil consumption is only slightly higher. What is the most likely cause?

- A. A leaking valve cover gasket that sends oil directly into the intake manifold pipe
- B. Overboost from a stuck wastegate that forces oil through the aftercooler core
- C. A worn exhaust valve guide allowing oil to enter on the exhaust stroke
- D. A restricted air inlet causing vacuum that draws oil past the turbo seal

64. A tractor's rear axle settles to the stop overnight, but ride height is correct after the engine runs. What is the likely cause?

- A. A small leak in an air spring, fitting, or leveling valve circuit
- B. Overfilled differential housing with extra oil on the gears
- C. Worn rear brake lining that leaves the brake shoes loose in the drum
- D. Cracked drive shaft tube that sags with the weight

65. After fitting LED marker lamps, the truck's bulb-out warning triggers. What is the cause?

- A. LEDs require alternating current instead of direct current
- B. LEDs draw less current than the monitor expects, so a load resistor is needed
- C. LEDs draw far too much current and overload the circuit board inside the marker lamp module
- D. LEDs produce heat that melts the connector terminals quickly

66. A variable geometry turbocharger commanded to 80 percent shows only 20 percent actual vane position on the scan tool, and boost is low at low rpm. What is the best next step?

- A. Replace the charge air cooler since low boost always indicates a plugged cooler
- B. Clear the codes and road test until the fault returns under load again
- C. Increase the wastegate spring preload by adjusting the actuator rod length
- D. Sweep the actuator with the scan tool and check whether the vanes move freely

67. An automatic slack adjuster is found out of adjustment on a tractor axle. What is the correct action?

- A. Replace the brake chamber and leave the adjuster alone

- B. Add grease to the adjuster until the stroke returns to specification
- C. Find the cause, such as worn parts or a binding cam, before adjusting
- D. Back off the adjuster and reset it manually at every scheduled service interval

68. ATF drained from an automatic is milky pink. What is the most probable cause?

- A. Metal debris from a failing wheel bearing on the front axle
- B. Normal discolouration from the fluid's detergent additives
- C. Air drawn in through the vent tube during highway travel
- D. Coolant entering through a leaking transmission cooler in the radiator

69. A driver's air-suspension seat will not hold height and sinks slowly. What is the likely cause?

- A. An air leak in the seat air bag, fitting, or leveling valve
- B. Low coolant level in the cab heater circuit
- C. A weak battery that cannot hold the seat motor
- D. A worn fifth wheel jaw that moves the seat base on its rails

70. A heater core in a truck is leaking coolant onto the cab floor. What is the correct repair?

- A. Pour stop-leak into the cooling system as a permanent repair
- B. Seal the leak with epoxy on the outside of the core
- C. Replace the core, pressure test the cooling system, and refill with the specified coolant
- D. Clamp off both heater hoses and leave the core in the dash

71. A truck loses communication with all modules every time it is pressure washed. What is the most likely cause?

- A. A heater element that melts the data link insulation in the harness
- B. Water entering a connector that shorts the network wiring
- C. A software update that triggers on contact with water

D. A battery that is too warm from the washing process

72. The U-bolt nuts on a leaf spring pack are found loose, and several threads on the bolts are damaged. What is the proper repair?

- A. Retighten the nuts and apply thread locker over the damaged threads
- B. File the damaged threads smooth and reuse the same bolts
- C. Replace only the loose nuts and leave the old bolts in place
- D. Replace the U-bolts and nuts as a set and torque them to specification

73. How is a charge-air cooler checked for leaks?

- A. Fill the cooler with coolant and look for seepage at the end tanks
- B. Spray the core with soapy water while the engine runs at idle
- C. Cap the ports, apply the specified low air pressure, and watch the gauge for a pressure drop
- D. Run the engine at full load and compare coolant temperature before and after

74. Grease is seeping from the camshaft end of a drum brake and into the drum. What is the correct repair?

- A. Replace the camshaft seal and bushings and the contaminated linings
- B. Replace only the drum and leave the old linings in place on the shoes
- C. Wipe the shoes clean with solvent and reinstall them
- D. Add more grease to push the contamination back out

75. A truck with an automated manual transmission must be towed with its drive wheels on the ground. What does the procedure normally require?

- A. Shift to neutral and tow at highway speed for any distance
- B. Disconnect the driveshaft or lift the drive axle, since the transmission may not lubricate when towed
- C. Shift into the highest gear to reduce the shaft speed

D. Leave the engine idling so the transmission pump keeps circulating oil

76. Which setup correctly measures axial end play of a wheel hub on a drive axle?

- A. A dial indicator on a magnetic base with its plunger against the hub end
- B. A feeler gauge slid between the brake drum and the backing plate while the wheel is rotated slowly by hand
- C. A torque wrench on the spindle nut checking rotating drag in newton-metres
- D. A micrometer across the hub flange while an assistant rotates the wheel

77. A reefer trailer's tractor-trailer 7-way connector has a burnt terminal. What is the best repair?

- A. Install a larger fuse in the trailer power circuit
- B. Clean the burnt area and wrap it with electrical tape
- C. Replace the damaged connector or terminal, and correct the cause of the overheating
- D. Move the wires to the unused pins of the same connector

78. What is the main reason for keeping hydraulic fluid clean and using proper filtration?

- A. Clean fluid makes the pump run faster at the same pressure
- B. Contamination wears pumps, valves, and seals, and can cause failure
- C. Clean fluid prevents the reservoir from needing any more oil
- D. Clean fluid reduces the weight of the circuit for fuel savings

79. A scan tool shows an active SPN 110 FMI 0 on a truck. What does this mean and what should be done?

- A. Coolant level is low, so top it up and clear the code immediately afterwards
- B. Coolant pressure is too high, so fit a lower rated radiator cap
- C. Coolant temperature is far below normal, so replace the thermostat first
- D. Coolant temperature is far above normal, so confirm overheating before changing the sensor

80. A shock absorber on a truck has oil on its body and the fluid is hot to the touch after a short drive. What is the best action?

- A. Remove it entirely and rely on the springs to control motion
- B. Wipe off the oil and keep using it since oil on the body is normal
- C. Replace it, and replace the other shock on the same axle to keep the damping balanced
- D. Add engine oil through the top seal to raise the damping rate

81. A refractometer reading on diesel exhaust fluid from a yard tractor tank shows about 20 percent urea. What does this indicate?

- A. The fluid is normal because the correct concentration range is 18 to 22 percent
- B. The fluid is concentrated and should be mixed with more water to reach 32.5 percent
- C. The fluid is fine but needs a warmer tank to correct the reading
- D. The fluid has been diluted and must be drained and replaced

82. The instrument cluster on a truck shows no gauge readings, but the engine runs and the lamps work. What should be tested first?

- A. Cluster power and ground supplies, plus the data link signal
- B. Compressor discharge temperature at the head of the compressor
- C. Tire pressure values reported by each wheel sensor on the vehicle
- D. Fuel injector balance rates from the engine module

83. When the engine is shut off, system air slowly backs up from the wet tank into the compressor head. What is the likely fault?

- A. A worn quick release valve at the front axle
- B. A leaking compressor discharge check valve
- C. A leaking foot valve exhaust port

D. A spring brake diaphragm that has ruptured

84. An automated manual transmission stays in neutral and will not shift after a long weekend, and the dash shows low air pressure. What is the first check?

- A. The clutch disc thickness, because it controls shifting at all times
- B. System air pressure, since the shift actuators need adequate air
- C. The driveshaft phasing, because it keeps the gears in neutral
- D. The steering box fluid, because it governs the gear selection

85. An electric truck will not wake up, and the high-voltage system will not close the contactors. The 12 V auxiliary battery reads very low. What is the likely cause?

- A. A dead 12 V battery or a failed DC-DC converter that no longer keeps it charged
- B. A plugged DPF in the exhaust system of the traction motor housing
- C. A leaking head gasket in the battery pack housing
- D. A worn clutch plate in the electric drive unit

86. A tandem drive axle moves forward and backward noticeably under braking and acceleration. Which part is likely worn?

- A. Alternator drive pulley
- B. Steering gear sector shaft and its mounting bracket
- C. Torque rod or radius rod bushings
- D. Fan clutch bearing assembly

87. A truck sets a high NO_x fault and the DEF doser sprays poorly. What is the most sensible first check?

- A. Replace the diesel particulate filter because it controls the NO_x level
- B. Replace the EGR cooler since NO_x is entirely controlled by recirculation

- C. Disconnect the batteries for ten minutes to clear the aftertreatment memory
- D. Inspect the doser nozzle for crystallized urea deposits

88. A technician is told to add R-134a to a system labelled for R-1234yf. What is the correct response?

- A. Add the two refrigerants half and half to balance pressures in the system
- B. Add R-134a only if the compressor sounds strained
- C. Do not mix refrigerants; use only the type on the system label
- D. Add R-134a since it is a direct replacement for any system

89. An intake air grid heater draws no current when commanded on in cold weather. What is the best next step?

- A. Bypass the relay with a jumper and leave it connected
- B. Replace the turbocharger since it controls the heater
- C. Add ether starting fluid to the intake as a permanent cold weather repair
- D. Check for power and ground at the heater relay and then test the element for continuity

90. A quick release valve on a front axle is slow to exhaust, so the brakes on one end release late. What is the most likely cause?

- A. A sticking diaphragm or blocked exhaust port
- B. A worn S-cam pushing on the roller too hard
- C. An air dryer desiccant that is slightly damp
- D. A compressor governor set to cut out too early

91. A driver reports a clunk from the driveline when moving from drive to reverse, and the technician finds play at the slip yoke. What is the likely cause?

- A. A worn thermostat that opens too early on the coolant circuit
- B. Worn slip yoke splines or a worn universal joint

- C. A weak battery that cannot hold the starter voltage steady
- D. An over-inflated tire on the steering axle with stiff sidewalls

92. A yard tractor shudders when lifting a loaded trailer. The technician finds internal bypass past the lift cylinder piston seal. What belongs on the repair order as the cause?

- A. Hydraulic oil was topped up and the unit returned to service
- B. Operator reports the fifth wheel does not feel right when lifting
- C. Fifth wheel lift cylinder was replaced and the machine road tested
- D. Worn piston seal allowed internal bypass in the lift cylinder under load

93. A sliding tandem on a trailer will not lock after being moved. What should be checked?

- A. The air dryer purge valve on the tractor
- B. The locking pins for full engagement, and bent pins
- C. The steering gear fluid in the tractor reservoir
- D. The coolant overflow bottle level on the engine and radiator

94. A hydraulic hose assembly on a lift circuit shows a bulge near the end fitting. What is the correct action?

- A. Replace the hose assembly immediately, since the reinforcement has failed
- B. Tape over the bulge and monitor it at each service
- C. Lower the relief valve setting to reduce pressure and keep using it
- D. Tighten the fitting nut until the bulge disappears

95. With the key on and engine off, a DPF differential pressure sensor reads 8 kPa. What should the technician check first?

- A. The fuel injector balance rates, as they set the sensor offset
- B. The filter substrate, which must be baked in a furnace at once

- C. The sensor zero reading, its hoses, and the lines for blockage or contamination
- D. The turbocharger bearing clearance, as it directly affects differential pressure

96. After coupling a trailer to a tractor, which action confirms the fifth wheel is properly engaged?

- A. Check that the air lines are connected and then proceed on the road safely
- B. Perform a tug test and confirm the jaws are closed around the kingpin
- C. Rock the landing gear handle and check that it turns freely
- D. Confirm the tire pressures and the lamp function before departure

97. A cab on a delivery truck has increased vibration and noise through the floor, and the technician finds cracked rubber cab mounts. What is the repair?

- A. Loosen the mount bolts to let the cab move more freely
- B. Add a thicker floor mat to absorb the noise from the mounts
- C. Fill the cracks with silicone sealant and leave the mounts in place
- D. Replace the worn cab mounts and check the related hardware and torque

98. A block heater cord shows continuity, and power is present at the inlet, but the engine block stays cold. What is the likely fault?

- A. A corroded battery terminal on the positive post
- B. A weak starter motor that cannot heat the block
- C. An open heating element inside the block heater
- D. A leaking head gasket on the first cylinder

99. The compressor continues to pump and system pressure keeps rising past the cut-out value. What is the most likely fault?

- A. A sticking governor or unloader valve that never unloads the compressor
- B. A leaking brake chamber on the steering axle

- C. A worn fifth wheel jaw that does not hold the kingpin firmly
- D. A failed dash gauge that reads pressure inaccurately

100. Reddish-brown dust is seen at the cap area of a universal joint. What does this usually indicate?

- A. Brake dust that has settled during a recent drum job
- B. Normal wear that requires no further inspection or action
- C. Fretting from poor lubrication or worn needle bearings in the joint
- D. Fresh grease that has been pumped in at the last service

101. A truck loses coolant, shows white exhaust smoke, and has no external leak. The EGR cooler is suspected. Why?

- A. The cooler pumps coolant through the intake valves by creating boost pressure
- B. An internal cooler leak lets coolant enter the exhaust path and burn as white vapour
- C. The cooler allows exhaust gas to cool coolant, making it condense in the tank
- D. The cooler restricts EGR flow, which always burns coolant in the cylinders

102. A liftgate motor draws 40 A at 12 V through a cable pair with total resistance of 0.01 ohm. What is the voltage drop across the cables?

- A. 0.4 V
- B. 4 V
- C. 0.04 V
- D. 0.8 V

103. A technician is lubricating a fifth wheel top plate on a yard tractor. What is the correct practice?

- A. Apply engine oil to the kingpin and never use grease on the top plate
- B. Cover the plate with penetrating oil to soften the old grease
- C. Run the plate dry so that dust cannot collect on the surface

D. Clean old grease off and apply fresh grease to the plate and release

104. A delivery truck's water-in-fuel lamp is on. What should the technician do first?

- A. Disconnect the sensor so the lamp no longer illuminates
- B. Drain the water from the fuel filter separator and recheck the lamp
- C. Replace the fuel injectors since water is present in the high-pressure side
- D. Add fuel conditioner to the tank and continue operation normally

105. Air from a truck's vents is weak at every fan speed, and the blower motor sounds normal. What should be checked first?

- A. The brake pushrod stroke on the front axle
- B. The tire pressure on the drive axle dual set of tires
- C. The cabin air filter and the inlet and ducts
- D. The coolant concentration with a refractometer

106. A hydraulic-brake delivery truck has a spongy pedal after a caliper replacement. What is the correct bleeding sequence?

- A. Open all bleeder screws together while pumping the pedal once
- B. Bleed only the replaced caliper and skip the other wheels entirely
- C. Start at the wheel closest to the master cylinder and work outward from there
- D. Start at the wheel farthest from the master cylinder and work inward

107. When should the driver of a tandem drive tractor lock the inter-axle differential?

- A. Before traction is lost, at low speed with steady power
- B. Only when the tractor is parked with the engine off
- C. At highway speed to stop the tires from wearing unevenly
- D. While turning a tight corner in the dry yard on pavement

108. Every marker lamp on the driver side of a trailer is out, while the passenger side works. What is the likely cause?

- A. A failed tire pressure sensor on the driver side of the trailer
- B. A leaking air spring on the trailer's rear axle
- C. An open ground or supply wire in the driver-side marker circuit
- D. A worn kingpin that has changed the coupling height

109. A tire on a delivery truck is found at about 40 percent below its recommended pressure after running loaded. What is the correct action?

- A. Inflate it to the correct pressure and return it to service right away
- B. Inflate it above the recommended pressure to restore the sidewalls
- C. Plug the tread from the outside and keep it on the steer axle
- D. Dismount and inspect the tire for internal damage before reinflating it

110. An apprentice is about to run an air impact wrench with a cracked impact socket on lug nuts. What is the best response from the journey person?

- A. Tell the apprentice to wear a face shield and keep working at a lower pressure
- B. Stop the job calmly, remove the socket from service, and explain how cracks cause shattering
- C. Let the apprentice finish this wheel, then mention the crack at the end of the shift
- D. Take the tool away without comment and finish the wheel yourself to save time

111. A trailer has uneven brake wear between its two axles. What is the most likely cause?

- A. A dragging or out-of-adjustment brake on one axle
- B. An overfilled tractor fuel tank after the last fuel stop
- C. A blocked cab heater core
- D. A worn driver's seat air bag

112. Hydraulic oil temperature on a truck rises quickly, and the relief valve is bypassing constantly. What follows?

- A. The reservoir gains pressure and pushes the oil back to the pump
- B. The filter collects the heat and transfers it to the pump
- C. Energy turns to heat as oil passes through the relief valve
- D. Fluid cools quickly since it moves faster through the valve

113. A diesel has low fuel supply pressure at the gallery. What should be checked before the lift pump is replaced?

- A. The engine oil dipstick, since oil pressure sets fuel pressure
- B. Filter restriction, using a gauge on the supply side of the filter and on the pump inlet
- C. The turbo wastegate preload, which controls fuel supply flow rate
- D. The DEF tank level, since fuel pressure follows the tank level directly

114. A wiper motor on a delivery truck runs slowly and the motor casing is warm. Where is the best place to start?

- A. A voltage drop test on the motor supply and ground
- B. A fuel pressure test at the filter housing and the lift pump
- C. A compression test on the front cylinder
- D. A coolant concentration test with a refractometer

115. A hydraulic-brake delivery truck has old brake fluid that has absorbed moisture. What is the main hazard?

- A. Increased lining friction that causes the brakes to grab at low speed in traffic
- B. Faster compressor cycling from the moisture in the lines
- C. A higher boiling point that holds heat in the system

D. A lower boiling point that can cause vapour lock and a sinking pedal

116. Gear oil is leaking past a drive axle wheel-end seal and the seal is new. What should be inspected?

- A. The axle breather, which may be plugged and pressurizing the housing
- B. The cab air suspension, which pumps fluid into the axle
- C. The air dryer cartridge, which controls axle housing pressure
- D. The steering gear box, which feeds oil to the wheel ends

117. A wheel hub runs hot after a wheel bearing adjustment. What is the most likely mistake?

- A. The bearings were adjusted with too much clearance
- B. The hub cap was installed with slightly too much grease
- C. The tire was inflated to the correct pressure for the load
- D. The bearings were adjusted with too much preload

118. The high-voltage battery coolant on a hybrid delivery truck is due for replacement. Which coolant should the technician use?

- A. Any ethylene glycol coolant, since all coolants are interchangeable
- B. The specific coolant listed by the manufacturer for the battery loop
- C. Plain tap water, because it keeps the conductivity as high as possible
- D. Used engine coolant, which is already adapted to the loop

119. A common rail engine cranks for a long time before starting. What should be verified first?

- A. The exhaust backpressure valve duty cycle during the first crank
- B. The turbocharger actuator position, since boost controls rail pressure
- C. Low-pressure supply pressure and air in the fuel first
- D. The coolant thermostat opening temperature during the cranking period

120. A telematics unit was hard-wired to constant power on a truck, and the batteries drain over a weekend. What should be done?

- A. Install a larger alternator and leave the wiring as it is
- B. Disconnect the unit's antenna to stop the data transmissions
- C. Measure the draw, then rewire it through a switched or sleep-capable supply
- D. Add a second battery to cover the draw each weekend

121. A cab door will not close fully, and the seal and latch alignment look correct. What else is commonly responsible?

- A. Worn or sagging door hinges and bushings that let the door drop out of alignment
- B. A mis-set air governor on the dash gauge panel
- C. A plugged DPF that raises exhaust temperature
- D. A worn air compressor drive belt under the hood of the truck

122. After replacing a steering angle sensor on a truck with stability control, what must be done?

- A. Adjust the sensor bracket by eye until the dash lamp turns off at speed
- B. Disconnect the batteries to clear the stability system for ten minutes
- C. Drive five kilometres in a straight line to teach the new sensor
- D. Calibrate the sensor with a scan tool to set the straight-ahead position

123. A transmission-mounted hydraulic retarder produces little braking, and the fluid temperature is high. What should be checked?

- A. Brake chamber pushrod stroke at the drive axle
- B. Fluid level, cooler flow, and controller operation
- C. Alternator output voltage at the battery
- D. Engine air filter restriction on the intake

124. After a tire rotation, a tire pressure monitoring display shows the wrong positions for several wheels. What is needed?

- A. A wheel alignment to reset the sensor addresses
- B. A coolant system bleed to reset the wireless network
- C. A relearn or sensor location procedure with the monitoring system
- D. A new set of tires to correct the sensor positions

125. A scan tool shows coolant temperature of minus 40 degrees Celsius on a warm engine. What is the most likely cause?

- A. A failed fan clutch that keeps the engine unusually cool
- B. An open circuit or disconnected connector at the coolant temperature sensor
- C. A shorted sensor wire touching the ground along the harness
- D. A radiator that is too cool because of an open thermostat

126. During a vacuum hold test on a truck A/C system, the gauge slowly rises after the pump is shut off. What does this indicate?

- A. The compressor is pumping too much oil into the circuit
- B. The expansion valve is fully closed and holding the vacuum
- C. The system is dry and tight and can be charged immediately
- D. A leak or moisture in the system, so it is not ready for charging

127. A fuse keeps blowing in a truck's accessory circuit. What is the correct response?

- A. Find and repair the short instead of fitting a larger fuse
- B. Replace the fuse with a circuit breaker of twice the rating
- C. Bridge the fuse holder with a short length of wire
- D. Fit a larger fuse so the circuit stops tripping during normal use

128. A dispatcher asks whether tractor 14 can go out. The technician found a brake out of adjustment and has not yet corrected it. What is the best reply?

- A. Tell the dispatcher to ask the driver to confirm how the brakes felt on the last trip
- B. Say it should be fine for local runs and fix the brake at the next scheduled service
- C. State clearly that the unit is out of service until the brake is repaired and record it
- D. Say the brake is only slightly off and the driver can compensate by braking early

129. A technician inspecting a trailer finds a cracked weld at a suspension hanger bracket. What is the proper action?

- A. Mark the crack with paint and watch it at each trip
- B. Drill a hole at the end of the crack and continue to operate
- C. Add an extra clamp over the weld and return it to service
- D. Remove the trailer from service until the bracket is properly repaired

130. A cylinder rod shows pitting and the rod seal leaks oil. What is the proper repair?

- A. Replace or re-chrome the rod and install new seals
- B. Add thicker oil to fill the pits in the rod surface
- C. Tighten the gland nut as far as it will turn
- D. Sand the rod smooth and reuse the existing seals

131. A tractor's air brake system builds pressure normally, but after a full brake application the pressure at the dash gauge drops far more than expected before the compressor recovers it. What should be checked first?

- A. The wheel nut torque, because loose nuts bleed pressure from the hubs and drums
- B. Reservoir drain valves, chambers, and lines for leaks, plus compressor build-up rate
- C. The drive axle ratio, because gear ratio controls air consumption
- D. The cab mount bushings, because they set the gauge reference pressure

132. A terminal tractor's automatic transmission overheats during long periods of heavy yard work in the heat. Which factor should be checked first?

- A. The brake lining thickness at the rear drum assemblies of the drive axles
- B. The turbo wastegate setting on the exhaust manifold
- C. The transmission cooler flow, airflow, and the fluid level
- D. The wheel nut torque on the left front wheel

133. A technician finds a bulge in the sidewall of a front tire after a curb strike. What is the correct action?

- A. Remove the tire from service, since the sidewall has internal casing damage
- B. Mark the bulge with paint and monitor it at the next service
- C. Patch the bulge from the outside with a rubber plug
- D. Reduce the pressure by 70 kPa and keep the tire in service

134. An engine compression brake works poorly on one bank only. What should be checked first?

- A. The turbocharger compressor wheel for erosion
- B. The fuel injector timing on both banks of the engine at idle
- C. The air dryer purge valve on the compressor
- D. Brake lash and the solenoid and slave piston on that bank

135. After reconnecting the batteries on a truck with a master disconnect, several modules show lost memory and warning lamps. What is the normal procedure?

- A. Replace each module that displays a warning lamp immediately
- B. Check for stored codes, clear them as appropriate, and perform any required relearn procedures
- C. Pull all the fuses and reinstall them one at a time to retest
- D. Leave the lamps on since they will stay on permanently

Practice Exam 14: Answer Key and Explanations

1. **C** — Control modules stay awake for a time after key-off, so the true parasitic draw is only visible once they sleep, which can take 20 minutes or more. The ammeter must be in series with the battery cable. Five seconds is too short, coolant temperature is irrelevant, and disconnecting batteries produces no current to read.
2. **D** — Passive regeneration needs sustained exhaust temperatures, typically above about 250 to 300 degrees Celsius, which a long-idling yard tractor rarely reaches. Soot then accumulates until a parked or stationary regeneration is commanded. The engine does produce soot at idle, and ash is a slow accumulation that cannot explain frequent plugging.
3. **A** — A tire with internal belt problems can create a lateral force called radial pull, so swapping the fronts shows whether the pull follows the tire. Raising pressure and changing toe are temporary or unsafe fixes, and steering gear replacement is premature when alignment is within specification. The pull stays with the tire, which makes the diagnosis conclusive.
4. **C** — Dryers remove moisture with desiccant and expel it through the purge valve, so water in the tanks every day means the desiccant is saturated or the purge cycle is failing. A governor setting or leaking check valve changes pressure, not moisture. A parking valve fault affects spring brakes and has no connection to tank water.
5. **A** — Clutches need free play so the release bearing is not riding on the release fingers, otherwise pressure plate clamp load is reduced and the disc slips. Excess free play would cause a dragging clutch, not slipping, and a seized pilot bearing or worn countershaft would cause release problems rather than slipping under load.
6. **D** — On a yard tractor the lift circuit can stay pressurized with the engine off, because a raised fifth wheel keeps load on the cylinder. Lowering it onto the stops, shutting down, and cycling the control relieves stored energy so the fitting will not spray fluid. Cracking a line while idling risks an injection injury.
7. **B** — A handle that spins without raising or lowering the legs means the drive is not transmitting torque, usually because of a stripped or sheared gear in the gearbox. An air chamber, kingpin, and ABS sensor do not drive the landing gear. Inspecting the gearbox gears confirms the failure before replacing the whole landing gear leg assembly.
8. **B** — Drift under load with the valve in neutral shows fluid is passing the piston or a holding valve, so seals and valves are inspected. An overfilled reservoir, a worn jaw, and a transmission breather are not part of the lift circuit. Pressure testing the cylinder with the valve neutral confirms whether the piston seals or holding valve are leaking.
9. **C** — Batteries left in a partly discharged state form hard lead sulphate crystals on the plates, which reduces capacity and cannot easily be reversed. Short runs and long idle periods do not restore the

charge. Overcharging from a regulator would produce gassing, not sulphation, and a clean case has no effect on capacity.

10. D — Extended idling and light load keep cylinder temperatures low, so fuel burns incompletely and leaves unburned residue called wet stacking, while the rings can polish the liners smooth. The thermostat would cause overheating, not cool running, and detergent additives do not glaze liners. A regulator fault would show in the rail pressure data.

11. A — Heater output depends on hot coolant flowing through the core, so trapped air or a stuck control valve can keep it cold even with a hot engine. The compressor seal, cabin air filter, and refrigerant charge relate to cooling, not the heater circuit. Bleeding the system and checking the valve operation confirms which cause applies.

12. C — Pump output depends on engine speed, so heavy steering at idle that disappears when speed rises suggests low fluid, a slipping belt, or a weak pump. The air dryer, axle ratio, and cab mounts have no effect on steering assist at idle. Checking fluid level and belt tension first is quick, and flow testing follows if those are normal.

13. B — The governor senses reservoir pressure and tells the compressor to unload at the cut-out setting, so an incorrect cut-out value points directly to a faulty or misadjusted governor. The dryer purge valve removes moisture, a pushrod affects brake travel, and the foot valve controls application pressure, not compressor cut-out. Adjusting or replacing it restores the specified cut-out.

14. A — Oil on the disc reduces friction unevenly, causing grab and chatter, and the source is typically the engine rear main seal or the transmission input shaft seal, so the seal is replaced along with the disc. A clutch brake, pedal spring, or air booster leak does not put oil on the friction surfaces.

15. D — A cab that can shift means the latch is not holding, which is a safety hazard if the cab tilts forward under braking, so the vehicle is parked and the latch repaired. Driving on, wedging blocks, and greasing a mount do not secure the latch. A latch fault means the cab could pitch forward during an emergency stop.

16. D — Voltage drop across a cable under load shows resistance, and 0.9 V is well above the typical limit of a few tenths of a volt, so the cable or its terminals need cleaning or replacement. A shorted armature would show elsewhere, and a damaged ring gear tooth causes a noise, not a drop across the cable.

17. A — Late post-injection used for regeneration sprays fuel into the cylinder, and some of it can wash the cylinder wall and drain into the sump, so repeated regenerations raise fuel dilution. An oil cooler separates oil from coolant, not fuel. A worn oil pump or overfilled crankcase cannot move oil to the fuel system as described.

18. B — High-voltage components can remain energized after key-off, so the procedure includes shutdown, rated PPE, and a voltage check. Touching cables, spraying water, or relying on the key off can expose the technician to lethal voltage. Only after the circuit is verified dead is it safe to unplug connectors or handle the cables.

19. C — Free play can come from several joints in the linkage, so each component is inspected for movement while the wheel is turned, to find the actual source. Replacing the wheel, tires, or pump without inspection wastes time and does not locate worn joints. Dial indicators or pry checks at each joint show exactly where the movement originates.

20. B — Compressors lubricated from engine oil can pass oil into the air system when rings are worn or inlet restriction creates vacuum that draws oil in, so both are checked. A chamber diaphragm leaks air, not oil, and governor timing or a stuck relay valve cannot introduce oil into the tank.

21. D — The clutch brake stops the input shaft so the first or reverse gear engages smoothly when stationary, so a worn or misadjusted unit leaves the shaft spinning and gears clash. Cooling air, a U-joint, and a fuel filter do not influence input shaft speed when the clutch pedal is fully pressed.

22. C — An alternator needs adequate speed to produce current, and a slipping belt or weak tensioner leaves it turning slowly at idle, with a squeal that confirms the slip. The fuel pump, ignition switch ground, and glow plug relay do not drive the alternator or explain the squeal that rises with load.

23. A — Conflicting readings mean one source is wrong, so a master gauge confirms real pressure and the sensor, connector, and circuit are tested if the pressure is normal. Replacing the pump without proof is premature, a lighter oil does not fix a sensor, and clearing the code ignores a warning that could be real.

24. C — When a hazardous product is decanted into a container that will not be used immediately, WHMIS requires a workplace label with the product identifier and safe-handling information, and the worker must be trained on the product. A can left on a shelf for days clearly qualifies, and an invoice or partial pictograms do not meet the requirement.

25. B — A persistent trailer ABS lamp indicates a fault, so the codes are read and the power and sensor circuits are tested, which shows what component is at fault. Replacing tires, removing lines, and disabling the module do not diagnose and leave unsafe braking. A scan tool or diagnostic lamp sequence on the trailer module identifies the failed circuit.

26. D — Viscosity index is a measure of how much an oil thins as it warms and thickens as it cools, and a higher value means steadier viscosity across a yard tractor's temperature range, from cold mornings to hot afternoons. It says nothing about heat build-up rate, water tolerance, or electrical conductivity of the oil.

27. A — An off-centre wheel with the truck tracking straight means the drag link length or steering gear position is out of centre, so the drag link is adjusted to centre both. Toe controls tire alignment rather than the centre position, tire pressure does not recentre a wheel, and replacing the gear does not address the linkage length.

28. D — A smart alternator follows commands from the engine module over the network, so low voltage may be the commanded value, a communication fault, or a wiring issue. The scan tool shows command versus actual output. Over-tightening the belt damages bearings, and bypassing the regulator removes the control the system depends on.

- 29. B** — Heat checks and bluing on one axle only show that axle is dragging or carrying too much of the braking load, often from a seized slack adjuster, a sticking camshaft, or a valve imbalance. Compressor temperature does not reach the drums, and alignment is unrelated to drum heat on a different axle.
- 30. A** — A pedal that sinks suggests fluid is bypassing the master cylinder seal or leaking, and air in the system makes it soft, so the technician inspects the cylinders and lines and bleeds the system. A stronger spring does not repair leaks, disc wear shows differently, and engine oil would damage the seals.
- 31. C** — In a leakdown test, the location of the escaping air identifies the leak path. Air heard at the intake manifold means the intake valve is not sealing. Air from the tailpipe points to the exhaust valve, bubbles in the coolant suggest a gasket, and air at the crankcase breather or oil filler points to the rings.
- 32. C** — A low-pressure switch protects the compressor from running without refrigerant, so a leak that drops the charge keeps the clutch from engaging. A plugged heater core, blower resistor, and thermostat do not influence the switch. Gauges connected to the low and high sides, reading near zero, confirm the leak, and the leak must be found and repaired before recharging.
- 33. A** — If voltage reaches the solenoid's S terminal and the batteries are strong, the click shows the plunger moves but the main contacts are not conducting, so they are burnt or worn. A neutral safety switch fault would prevent the signal reaching the S terminal, and a cracked case or governor has no effect.
- 34. D** — Feathering, where tread blocks wear with a raised edge on one side, is a classic result of incorrect toe, because the tire is dragged sideways as it rolls. Caster mostly affects stability and steering return, and the other angles cause different wear patterns. Matching the wear pattern to the alignment angle saves time and avoids parts replacement.
- 35. B** — At road speed, ram air supplies the radiator, so a defective fan drive hides until the truck sits still and relies on the fan. A thermostat that opens too early would run the engine cold, and a strong cap spring does not block return flow in the way described. A worn impeller would fail at higher speeds too.
- 36. A** — A wheel speed sensor can read correctly at rest but produce an erratic signal when the tone ring wobbles or hub end play moves the air gap at speed. So hub end play, sensor gap, and tone ring condition are inspected. The compressor line, dryer cartridge, and brake light switch do not affect wheel speed signals.
- 37. C** — A thin paste of fine particles on the magnet is normal wear, but large flakes and bright glitter point to gear, bearing, or synchronizer damage in progress. The transmission should be drained, inspected, and the cause found before failure. Break-in debris is fine and short-lived, and clutch fluid or additives do not make metal flakes.
- 38. D** — A working charging system should raise voltage well above resting battery voltage, typically about 13.8 to 14.8 V at 1,500 rpm, so 12.4 V means the battery is discharging under load. The technician tests alternator output, belt drive, and the wiring. A full battery would not pull voltage down, and the starter is not engaged.

39. B — Slow, noisy movement usually results from friction in the channel or a worn regulator or motor, so the technician inspects and lubricates the channel and checks the regulator. A fuel pump relay, brake chamber, and clutch bearing are in different systems. A quick current check at the motor shows whether the motor or regulator is failing.

40. D — Cupping appears when a tire bounces repeatedly as it rolls, which happens with worn shocks, imbalance, or loose components, so the suspension and balance are inspected. A power steering reservoir, a dryer mount, and a fifth wheel plate do not make the front tire bounce. Balancing the wheels and replacing worn shocks stops the bounce and cupping.

41. A — Liner vibration forms vapour bubbles that collapse against the sleeve wall, and without enough supplemental additive to build a protective film, the surface erodes into pits. Testing coolant additive concentration at service intervals prevents it. Distilled water is the preferred mixing water, and an early-opening thermostat or extra antifreeze does not cause cavitation.

42. B — A missing ground removes the path that trips a protective device when a fault energizes the grinder's housing, so the cord is tagged out and replaced. Removing the pin, taping it, or limiting use does not restore protection and leaves a shock hazard, which is why a damaged cord is never kept in service.

43. C — Dirt, rust, and dry pivots make twist-locks stiff, so they are cleaned and lubricated and inspected for bent parts. Hammering can damage them, welding removes the function, and oil on a casting does not free the mechanism. After cleaning, cycle the handle through its full travel and confirm each lock seats and releases completely.

44. D — The relief valve limits maximum pressure, and one stuck open or set low lets oil return to the tank, so pressure never builds. A fuel shut-off, an unloader, and a dryer purge valve are in other systems. A gauge at the pump outlet shows whether the relief valve is holding the system below its working pressure.

45. C — Application timing depends on how quickly air reaches the trailer chambers, so a sticking relay valve or a pinched, restricted service line delays applying them. A compressor gear problem would affect build-up rather than timing, and a saturated dryer or hub seal does not delay trailer chamber response. Checking line restriction and valve response confirms it.

46. B — Range and splitter shifts are air operated, so if the splitter works but the range does not, the problem is likely in the range circuit's air supply, such as a clogged filter regulator or a leaking line. Clutch wear, wheel bearings, and a turbo actuator have no effect on the range cylinder.

47. A — A drop of 0.7 V on a ground path means resistance is stealing voltage from the loads, so the ground connection needs cleaning or repair. Higher wattage lamps draw more current and worsen the drop, replacing the alternator does not fix a resistive ground, and a larger fuse removes protection.

48. A — A thermostat stuck open lets coolant circulate through the radiator all the time, so in cold weather the engine never reaches its normal operating range and heater output stays weak. A belt

problem would reduce flow rather than cool the engine, and cap pressure or overflow level cannot hold temperature down by itself.

49. C — Ice forms when the evaporator's surface goes below zero degrees, usually because airflow is restricted or the temperature control fails, so the filter, blower, and control are checked. The heater valve, head gasket, and U-joint do not cause an evaporator to freeze. Replacing the filter and checking the blower speed usually stops the icing.

50. D — Vertical play shows wear in the kingpin bushings and thrust bearing, and it is measured with a dial indicator while the wheel is lifted and lowered with the axle supported appropriately. Rocking the steering wheel, checking hydraulic pressure, and measuring a drum do not give kingpin vertical clearance. More than the specified limit calls for replacement.

51. B — Cold cells cannot accept high charging current, so the battery management system limits regeneration, as it does when the battery is full. Chambers, nuts, and the tire system do not change regen. The technician confirms this with battery temperature and charge data, since the limit is a normal protective strategy rather than a fault.

52. A — With the system pressurized and the brakes applied, a soap solution on fittings, valves, and chambers shows bubbles at the leak. Running the engine masks small leaks, disconnecting the trailer line tests a different circuit, and measuring pushrod stroke checks adjustment, not leakage. Marking each bubbling joint lets the repair be targeted instead of replacing valves blindly.

53. B — Converter clutch shudder is often caused by degraded or incorrect fluid that changes friction behaviour, so the first step is to check fluid condition and specification and service fluid and filters. Replacing the converter without testing is premature, and idle speed and an output yoke do not address the lockup issue.

54. D — When the coil is energized and power reaches terminal 30 but nothing appears at terminal 87, the contacts are not closing the circuit, so the relay has failed internally. A shorted coil would blow a fuse, a missing load ground affects the load rather than terminal 87, and battery voltage at terminal 30 shows the battery is adequate.

55. C — Each kilopascal of cap pressure raises the boiling point of the coolant, so a lower-rated cap lets it boil at a lower temperature and vent coolant earlier. This causes loss of coolant and overheating under load. The cap does not change pump flow or freeze protection, and a lower rating cannot raise the boiling point.

56. D — Mounting hardware carries large dynamic loads, so loose or stretched bolts are replaced with the specified grade and tightened to the torque specification. Hand tightening, soft bolts, and welding bolt heads can all lead to failure of the mounting. Bolts that have stretched under repeated loading cannot hold their clamp load, so reusing them invites cracking at the plate.

57. A — Dim lamps with a large drop on the ground pin point to high resistance at the ground connection, usually corrosion or a loose terminal, which reduces the available voltage at all lamps. A

blown fuse would turn lamps off, and a single failed bulb or weak emergency battery cannot dim all lights.

58. C — Brake dust can contain hazardous fibres, and any dry method that puts it into the air spreads it around the shop. An enclosed HEPA vacuum or wet cleaning captures it at the source. Compressed air blow-off, dry sweeping, and shaking rags all release respirable particles, and a paper mask is not adequate protection.

59. B — Gladhand seals harden and wear, so leaks at the connection are fixed by replacing the seals and checking the faces. Tape, clamps, and grease on the outside do not restore a pressure seal. Inspect the coupling faces for gouges or corrosion too, because a damaged face can leak through even a new seal.

60. B — Hydraulic hose must be rated for the system pressure and must use the right fittings and length, because a weaker hose can burst. Air brake tubing, fuel hose, and radiator hose are not rated for hydraulic pressures. Crimped fittings must also match the hose series, so the assembly is pressure tested after installation to confirm there is no leakage.

61. A — Weak return springs let shoes drag or release slowly, causing heat and uneven wear, so springs are replaced as a set on the axle along with the proper hardware. Reusing them, replacing only one, or heating them to restore tension ruins the temper and leaves unbalanced brakes that can drag or release unevenly.

62. C — Overfilling lets the rotating parts churn fluid into foam, and aerated fluid cannot transmit steady hydraulic pressure, so clutches slip and the transmission overheats. Foam does not improve shift quality, and fluid cannot lower the engine oil level or reduce converter load. Draining fluid to the correct level on the dipstick restores normal operation.

63. D — A restricted air filter or intake pipe creates vacuum at the compressor wheel, which can pull oil past the turbo's shaft seal into the charge air. Checking filter restriction is the first step. A valve cover gasket leaks externally, and exhaust valve guide wear sends oil to the exhaust side, not the intake piping.

64. A — Air suspension holds height only while air pressure holds, so a slow leak in a spring, fitting, or valve lets the axle settle overnight while the compressor restores it when the engine runs. A drive shaft tube, differential oil, and brake lining do not change ride height. Soap solution on the fittings locates the leak.

65. B — Bulb-out monitors measure current, and LEDs draw far less than incandescent bulbs, so the module may think a bulb has failed. A compatible load resistor or module setting corrects the reading. LEDs run on direct current, produce little heat, and use less current, not more. A resistor in parallel restores the expected current draw.

66. D — Commanded and actual positions that disagree point to a sticking vane mechanism or actuator fault, so an active test sweep shows whether the vanes move freely or bind with soot. Replacing a cooler or clearing codes does not test the suspect component. A variable-geometry unit has no conventional wastegate spring to adjust.

67. C — An automatic adjuster that drifts out of range is signalling a real problem, such as worn linings, a binding camshaft, or a damaged adjuster, so the cause must be found. Manually resetting it hides the issue, and replacing a chamber or adding grease does not repair the mechanism. Skipping that diagnosis lets the fault return.

68. D — A milky pink appearance means coolant has mixed with the fluid, commonly through a leaking cooler section inside the radiator, so the cooler is replaced and the system flushed with fresh fluid. Additives do not cause a milky look, vent air does not emulsify, and a wheel bearing cannot contaminate the transmission.

69. A — An air seat holds its position with air pressure, so a slow sink points to a leak in the bag, fittings, or valve. Coolant level, a weak battery, and the fifth wheel jaw have no connection to the seat air system. Soap testing the bag and fittings finds the leak before parts are replaced at random.

70. C — A leaking core cannot be dependably patched, so it is replaced, and the system is pressure tested and refilled with the correct coolant to confirm there are no other leaks. Stop-leak can plug the radiator and heater passages, and epoxy does not seal a pressurized, thermally cycling core. Clamping hoses only bypasses the heater temporarily.

71. B — Intermittent loss of network communication tied to washing points to water intrusion at a connector, splice, or damaged harness, which can short the data lines. Software updates do not trigger from water, battery temperature does not change from a wash, and heater elements are not related to the data link.

72. D — U-bolts hold the axle to the spring pack and carry heavy loads, so damaged or loose ones are replaced as a complete set and tightened to the correct torque in sequence. Thread locker, filing, and reusing old bolts leave weakened hardware that can stretch or fail. Replacing only the nuts ignores the damaged bolt threads.

73. C — A charge-air cooler is a pressure vessel, so a pressure decay test with the ports capped and the specified low pressure applied is the standard check, with the gauge showing a drop if the core leaks. Coolant does not circulate through it, and idle leaks may not show because boost pressure is minimal at idle.

74. A — Grease on friction material soaks into it and cannot be removed reliably, so the linings are replaced and the seal and bushings are renewed to stop the leak. Solvent does not clean porous lining, extra grease worsens the problem, and replacing only the drum leaves contaminated linings that will grab or slip.

75. B — Many automated manuals rely on the engine to drive the lubrication, so towing with the drive wheels turning the output can run the gears without oil and damage them. The driveshaft is removed or the drive axle is lifted. Neutral at highway speed still back-drives the shafts, and the highest gear or an idling engine does not solve it.

76. A — End play is axial movement, so a dial indicator on a rigid magnetic base with its plunger parallel to the spindle on the hub end reads it directly while the hub is moved in and out. A micrometer

cannot measure movement, a feeler gauge at the drum gives clearance of a different part, and torque only shows drag.

77. C — A burnt terminal shows high resistance and heat, so the connector or terminal is replaced and the cause, such as corrosion or a loose pin, is corrected. Tape, unused pins, and a bigger fuse leave the problem in place. Inspect the pin tension and the wire crimp because a loose pin overheats again quickly.

78. B — Particles scour precise surfaces and jam valves, so clean fluid extends component life. Cleanliness does not make pumps faster, does not remove the need for oil, and does not change weight. Water, dirt, and metal wear particles are what the filter and reservoir breather are designed to exclude, so keeping fluid and containers clean is routine service.

79. D — SPN 110 is engine coolant temperature, and FMI 0 means the value is valid but well above the normal range, which suggests actual overheating. The technician confirms with a gauge and checks the cooling system. Cold readings, low level, or pressure would be shown by other FMI codes, so those actions miss the fault.

80. C — Oil leaking from the body shows the seal has failed and the shock has lost damping, so it should be replaced, normally in pairs for balance. Wiping it clean ignores the failure, adding oil is not possible, and driving without it harms stability and tires. Pairing the shocks keeps damping equal across the axle.

81. D — Diesel exhaust fluid should be 32.5 percent urea. A reading near 20 percent means contamination with water, so the dosing system cannot reduce NOx properly. The tank must be drained, flushed, and refilled with fresh fluid. Adding water makes dilution worse, and warming the tank does not change concentration. Refilling follows the system flush.

82. A — Gauges depend on the cluster being powered and receiving data, so a missing supply, ground, or data link signal explains the blank readings while the engine and lamps continue to work. Injector rates, compressor temperature, and tire pressure values are unrelated to the cluster's basic power and data. Checking those supplies is a quick bench test.

83. B — The discharge check valve holds pressure in the system when the compressor is not running, so a leak lets air back through to the compressor head. A foot valve or quick release valve leak vents to the atmosphere, not back through the compressor, and a ruptured diaphragm leaks at the chamber.

84. B — Shift actuators on air-assisted automated manuals require adequate supply pressure, so a low-air condition can leave the unit unable to select a gear, making air pressure the first check. Disc thickness, shaft phasing, and steering fluid do not control actuator operation. Building air to normal pressure and retrying the shift usually restores operation if no leak exists.

85. A — Contactors and control modules rely on the 12 V system to start, so a dead battery or failed DC-DC converter can prevent the high-voltage system from closing. A clutch, a DPF, and a head gasket do not exist or apply on a battery electric truck. Testing the 12 V battery first is the quickest way to confirm.

86. C — Torque and radius rods hold the axle in position fore and aft, so worn bushings let the axle shift under braking and driving loads. The sector shaft, fan clutch bearing, and alternator pulley are in different systems and cannot allow axle movement. Replacing the bushings restores axle location and removes the shuffle on take-off.

87. D — Urea can crystallize at the nozzle and restrict the spray, reducing NOx conversion and setting a fault, so visual inspection of the doser is the simplest first step. The particulate filter does not control NOx, EGR contributes but does not explain a poor doser spray, and resetting the batteries only clears memory.

88. C — Systems are designed for a specific refrigerant, oil, and fittings, so refrigerants must not be mixed, and the label type is used with proper equipment. Mixing can damage components and contaminate recovery equipment. Recovery equipment is dedicated to one refrigerant, and the system label shows the type and the oil, so the technician follows it and does not guess.

89. D — A heater that draws no current can be an open element, a failed relay, or a missing command, so the technician checks power, ground, and element continuity in order. The turbo does not control the heater, ether near a grid heater is hazardous, and a permanent jumper removes control and protection.

90. A — The quick release valve speeds exhaust at the chamber, so a sticky diaphragm or blocked exhaust port holds air in the line and delays release at that wheel end. Cam wear affects stroke, desiccant affects moisture, and governor setting affects pressure, so none of them slows exhaust at the valve.

91. B — A clunk on changing torque direction signals free play in the driveline, and worn slip yoke splines or universal joints take up that play with a bang, so the joints and splines are measured. Tire inflation, a thermostat, and a weak battery do not produce driveline backlash. Measuring joint play confirms which part is worn.

92. D — A repair order records three things: the complaint as described, the cause as found, and the correction as performed. The shudder is the complaint, and the seal bypass is the cause, because it explains the symptom. Replacing the cylinder or topping up oil describes the correction, and the driver comment repeats the complaint.

93. B — Sliding tandems are secured by locking pins that must fully engage the rail holes, so a bent pin or binding release can keep it from locking, and the pins and mechanism are inspected. The dryer, steering fluid, and coolant overflow are unrelated. Lubricating the mechanism and straightening or replacing bent parts restores locking.

94. A — A bulge shows the reinforcement layers have separated or broken, so the hose can burst under pressure and release high-pressure fluid. The assembly is replaced right away with a correctly rated hose. Taping, reducing relief pressure, or tightening the fitting does not restore strength and leaves a hazardous hose in service.

95. C — With no exhaust flow, the differential pressure should read near zero. A significant reading suggests a sensor offset or blocked or water-filled lines, so the sensor and its hoses are checked first.

Baking the substrate is premature, and the turbo bearings and injector balance have no effect on a key-on engine-off reading.

96. B — A tug test with the trailer brakes set and a visual check that the jaws surround the kingpin with the release handle locked proves the coupling is secure. Air line connection, landing gear handle movement, and tire or lamp checks are important but do not confirm the fifth wheel lock.

97. D — Cracked mounts have lost their isolation, so they are replaced and the hardware is checked and torqued. Sealant cannot restore strength, loose bolts let the cab move dangerously, and a floor mat does not address the cause. The technician should also check the cab tilt latches and the mounting brackets for cracks while the mounts are removed.

98. C — With power at the inlet and a continuous cord, current should flow through the element, so a cold block means the element is open or the heater is faulty. A starter, head gasket, or battery terminal fault does not stop a block heater from drawing current and warming the coolant.

99. A — The governor signals the unloader to stop compression at the cut-out pressure, so a stuck governor or unloader lets the compressor keep pumping until a safety valve may open. A chamber leak would lower pressure, a fifth wheel jaw is unrelated, and a gauge error would not make real pressure rise.

100. C — Rust-coloured dust at a joint cap is the debris of fretting corrosion, which appears when lubrication is poor or bearings are worn, and it signals the joint needs inspection and probably replacement. Fresh grease is not dusty, brake dust is dark, and the sign is not normal. Replacing the joint prevents it from seizing.

101. B — EGR coolers pass hot exhaust gas through passages surrounded by coolant, and a cracked passage lets coolant enter the exhaust stream, where it vaporizes into white smoke and the coolant level drops with no external leak. The cooler does not create boost pressure, and restricting flow would not burn coolant.

102. A — Voltage drop equals current multiplied by resistance, so 40 amperes through 0.01 ohm gives 0.4 volts, which is a small, acceptable loss of the 12 volt supply. The larger values come from slipping a decimal place or doubling the resistance, and none of them match the straightforward Ohm's law product.

103. D — The top plate and release mechanism need proper grease to reduce wear and friction, and old contaminated grease is cleaned off before fresh grease is applied at the scheduled interval. Running dry causes wear, and engine oil or penetrating oil does not provide lasting lubrication. Wiping the plate clean before greasing prevents abrasive buildup.

104. B — The lamp signals water in the primary filter or separator, which can damage injectors, so draining the separator and checking that the lamp goes out is the correct first step, followed by finding the source. Injectors are replaced only after water is proven in the high-pressure side, and disabling the sensor hides the warning.

105. C — Strong blower noise with weak vent flow points to a restriction, so the filter, inlet, and ducts are checked first. Pushrod stroke, tire pressure, and coolant concentration are unrelated to airflow. Technicians can confirm the restriction by removing the filter momentarily or measuring pressure drop, and replacing the cabin filter is a quick, low-cost repair that comes first.

106. D — Air trapped in the system is bled in sequence, normally starting farthest from the master cylinder so fluid pushes air out along the longest line first. Opening all screws at once draws air back in, and bleeding only the replaced caliper can leave air in the lines at other wheels.

107. A — The inter-axle lock forces both axles to turn together, which helps in slippery conditions, but it should be engaged at low speed with steady power, not while spinning or on dry pavement where it causes driveline wind-up and tire wear. It is not meant for highway speed or parking. Unlock it again once traction is restored.

108. C — When a whole side of lamps fails together, the shared part of that circuit, usually a common ground or supply wire, is open, so the harness section is checked. A tire sensor, an air spring, and a worn kingpin are all unrelated to the marker lamp wiring. A continuity test along the harness finds the break.

109. D — A tire run badly underinflated under load flexes its sidewalls, overheats, and can suffer hidden cord and liner damage that may not show externally. It must be removed from the rim and inspected inside and out before it is reinflated. Simply reinflating, overinflating, or plugging the tread leaves a possibly weakened casing in service.

110. B — Mentoring combines safe practice with explanation. A cracked socket can shatter under impact, so the work stops immediately, the socket is tagged out, and the reason is taught. Delaying the correction allows the hazard to continue, taking over teaches nothing, and a face shield with lower pressure treats the symptom instead of removing a defective tool.

111. A — Uneven wear shows one brake is working harder or dragging, usually from adjustment problems or sticking components, so the technician inspects the brakes on both axles. A fuel tank level, a heater core, and a seat air bag are unrelated. Measuring pushrod stroke and checking each slack adjuster shows which brake is out of adjustment.

112. C — Oil flowing across the relief valve at high pressure turns hydraulic power into heat, and constant bypassing can overheat the fluid. Speed does not cool it, and filters do not absorb the heat. Fixing the cause, such as a mis-set relief valve or an undersized line, and fitting adequate cooling prevents damage to seals and the fluid.

113. B — A restricted filter or suction line is a common cause of low supply pressure, and gauges before and after the filter locate the restriction cheaply before a pump is condemned. The turbo, DEF tank, and oil level have no direct link to fuel supply pressure, so they are not sensible checks.

114. A — A slow, warm motor suggests resistance in its supply or ground wiring, or a worn motor, so a voltage drop test locates the resistance before parts are replaced. Fuel pressure, compression, and coolant concentration are unrelated to a wiper motor's electrical circuit. Cleaning the ground and checking the brushes or windings follows if the drop is normal.

115. D — Glycol-based brake fluid absorbs moisture over time, and water lowers its boiling point, so heavy braking can boil the fluid and form compressible vapour, giving a soft pedal. Moisture does not raise boiling point or lining friction, and compressors are not part of a hydraulic brake system. Flushing and replacing the fluid at intervals prevents this.

116. A — An axle housing needs to breathe as it heats and cools, and a plugged breather lets pressure build, forcing oil out past seals even when they are new, so the breather is cleared or replaced. The dryer, steering box, and cab suspension have no connection to axle oil pressure. Clearing the breather is a quick check.

117. D — Excess preload squeezes the bearings and creates friction and heat, so the hub runs hot, while too much clearance would cause noise and movement. A hub cap with grease and a correctly inflated tire are normal and not a source of heat at the hub. Readjusting the nut to the specified preload cures the heat.

118. B — Battery thermal loops are designed for coolant with controlled electrical conductivity, so the manufacturer's specified fluid must be used, because the wrong fluid can create leakage paths or corrosion near high-voltage parts. Mixing with generic coolant, tap water, or used engine coolant risks insulation faults and cooling problems. Always confirm the specification in the service information.

119. C — High-pressure pumps depend on a clean, air-free supply, so low supply pressure or aeration is checked first because it is easy to confirm and a common cause. Turbo position, thermostat opening, and exhaust back-pressure do not control cranking start-up. Only after the supply side is proven would the rail be diagnosed.

120. C — Constant-powered devices that do not sleep can drain batteries, so the technician measures the draw and then corrects the supply to a switched or sleep-capable source. A larger alternator does not help a stopped engine, disconnecting an antenna may not stop the draw, and a second battery just delays the problem.

121. A — Worn hinges or bushings let the door sag, so it no longer lines up with the latch, and the technician checks hinge play and adjusts or replaces them. A compressor belt, a governor setting, and a plugged DPF have no effect on door alignment. Replacing the bushings and adjusting the striker restores the fit.

122. D — A new steering angle sensor has no reference for straight-ahead, so a scan tool calibration sets it, otherwise stability control may misjudge the driver's intent. Disconnecting the batteries or driving a straight line does not run the calibration, and adjusting a bracket by eye cannot set a calibrated reference. Skipping it can disable the system.

123. B — A hydraulic retarder relies on fluid shearing to create braking, and it needs adequate fluid level and cooling, so low fluid, poor cooler flow, or controller faults reduce effect and raise temperature. Pushrod stroke, alternator output, and air filter restriction are unrelated to retarder performance. Cooling and fluid problems are the most common causes.

124. C — Sensors transmit identification, and the system stores which wheel each belongs to, so after rotation a relearn procedure updates the positions. New tires, alignment, and coolant bleeding do not change the stored sensor locations. Some systems learn the new positions automatically after a short drive, while others need a tool, so the technician follows the manufacturer's method.

125. B — Many control modules display minus 40 degrees when the sensor circuit is open, because a high-resistance signal looks like extreme cold. A shorted circuit would read very hot instead. A cool radiator or fan clutch fault would change the real temperature, not produce an out-of-range value, so the harness and connector are inspected.

126. D — A good system holds a deep vacuum, so a rising gauge means air is leaking in or moisture is boiling off, either of which leaves the system unfit for refrigerant charge. The technician finds the leak or continues evacuation. A closed expansion valve and oil quantity do not make the gauge rise, and a tight system holds.

127. A — A fuse protects the wiring, so one that keeps blowing signals a short or overload that must be found and fixed. A larger fuse or a bridge allows more current than the wire can carry and risks fire. A breaker of double the rating leaves the wiring unprotected too. Find the short first.

128. C — Clear, accurate communication about a safety defect matters more than convenience. A brake out of adjustment makes the vehicle unsafe and non-compliant, so the technician must say plainly that it is out of service and document the defect. Deferring, downplaying, or handing the decision to the driver leaves an unsafe truck on the road.

129. D — Suspension hanger cracks are safety-critical, so the trailer is removed from service and the bracket is repaired using an approved procedure. Watching the crack, drilling, or clamping can lead to failure under load. Only a certified welder following the manufacturer's repair procedure should restore it, and the repair is inspected before the trailer goes back to service.

130. A — A pitted rod will keep cutting new seals, so it must be replaced or re-chromed and sealed with new parts. Sanding leaves a rough surface, thicker oil does not seal pits, and over-tightening the gland damages seals. Rod condition is checked with a straightedge, and the rod bushing and gland are inspected when the cylinder is rebuilt.

131. B — A large pressure drop that recovers slowly suggests excess air consumption through a leak or weak compressor output, so leaks in the reservoirs, chambers, and lines are checked along with build-up rate. Axle ratio, cab mount bushings, and wheel nuts have no influence on how much air the brake system uses.

132. C — Heavy low-speed work generates a lot of heat at the torque converter, and the cooler must remove it, so restricted cooler flow, a blocked radiator face, or low fluid are the first checks. Brake lining, a wastegate setting, and wheel nut torque do not affect transmission temperature. A dirty cooler face blocks airflow quickly.

133. A — A sidewall bulge shows broken cords in the casing, which can fail suddenly, so the tire is removed from service and cannot be repaired. Lowering pressure, monitoring, or patching leaves a

weakened tire on a steering axle. Tires with sidewall damage are unsafe on a steering axle even when the bulge is small.

134. D — Because only one bank is weak, the cause lies in components specific to that bank, so lash adjustment, solenoid operation, and slave piston movement are checked first. Injector timing affects fuelling, the air dryer is unrelated, and a compressor wheel affects both banks equally rather than only one. Testing the solenoid current confirms it.

135. B — Power loss can clear learned values and set communication codes, so the technician reads the codes, clears those that are not true faults, and runs any relearn procedures. Replacing modules without testing is wasteful, pulling every fuse is not a structured diagnosis, and leaving the lamps on ignores a fixable condition.