

PRACTICE EXAM 16: 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 left-hand tail lamp on a trailer is dim while all other lamps are bright. A voltage drop test on the ground side of that lamp shows 1.8 volts with the lamp on. What is the most likely fault?

- A. A failed alternator regulator on the tractor charging circuit
- B. A weak battery on the tractor that cannot hold voltage
- C. An open fuse in the trailer supply circuit for the marker lamps
- D. A corroded or loose ground at that lamp

2. During a pre-purchase inspection, the dipstick of a diesel tractor shows oil above the full mark. The oil is thin and smells strongly of fuel. Which condition is the most likely cause?

- A. Coolant leaking into the crankcase through a failed oil cooler core
- B. Fuel dilution from a leaking injector or fuel part
- C. A restricted crankcase breather that is trapping combustion gases
- D. Worn valve guides that are allowing oil to pool around the stems

3. A technician finds excessive free play at the steering wheel during an inspection. With the engine running, what is the best way to locate the source?

- A. Have an assistant turn the wheel while watching each steering joint
- B. Replace the steering gear first without testing the other linkage

- C. Measure the tire tread depth on all of the steer tires
- D. Check the level in the windshield washer reservoir and the tank

4. During a roadside inspection of a tractor-trailer with ten service brakes, two brakes are found out of adjustment beyond the allowable stroke. How does this finding apply under the commonly used out-of-service criteria?

- A. Twenty percent of the service brakes are defective, which meets the out-of-service threshold
- B. Only two brakes are affected, so the unit may continue without any restriction
- C. The unit is out of service only if the defective brakes are on the steer axle
- D. The finding applies only to the trailer, not to the combination as a whole

5. A tractor with a manual transmission slips under load and the cab smells of burnt friction material. At inspection the clutch pedal has no free play. Which explanation is most likely?

- A. Excessive free play is preventing the clutch from fully engaging at the flywheel
- B. The clutch brake is dragging because it has too much clearance
- C. No free play, so the release bearing rides and the disc slips
- D. The transmission lubricant is too thick for the season and load

6. A technician is about to begin a periodic safety inspection on a tractor parked over a pit. The engine is running and the parking brake is applied, but the wheels are not chocked. What should be done before anyone enters the pit?

- A. Leave the engine idling to hold air pressure and rely on the applied parking brake alone
- B. Ask the driver to remain in the cab in case the unit has to be moved during the inspection
- C. Cycle the service brakes several times so any trapped air is released from the circuits
- D. Shut the engine off, remove the key, and chock the wheels so the unit cannot move

7. A landing gear crank on a trailer is difficult to turn and the gear box is dry. What is the correct service?

- A. Spray penetrating oil on the crank handle and the gear case only
- B. Lubricate the gear box and legs as specified and check for damage
- C. Weld the gear to the frame to stop the movement entirely
- D. Leave it dry because grease attracts dirt and slows it

8. A hydraulic system on a work truck runs hot, and the pressure gauge shows the relief valve is constantly open even at light load. What is the most likely cause?

- A. The reservoir is overfilled with fresh fluid of the correct grade
- B. The relief valve is set low or stuck partly open
- C. The suction hose has been replaced with a larger size
- D. The cylinder rod is chrome plated and polished

9. A pre-purchase inspection of a truck finds two batteries wired in parallel, one new and one several years old. Why is this a concern?

- A. Parallel wiring lowers the system voltage to six volts at the starter
- B. The newer battery will always supply all of the current by itself
- C. The charging system will shut itself off because it detects two batteries
- D. The weaker battery causes uneven charging and shortens both lives

10. A tractor under inspection shows heavy vapour from the crankcase breather at idle, and oil is collecting around the dipstick tube. Which condition best explains this?

- A. A thermostat that is stuck open and keeping the engine cold
- B. A defective turbocharger wastegate holding boost too low
- C. Excessive blow-by past worn piston rings or cylinder liners
- D. Air entering the fuel system through a loose filter housing

11. A technician shuts down a parked coach and reads zero on both air conditioning gauges before any diagnosis. What does a static reading of zero on both gauges indicate?

- A. The system has lost its entire charge through a large leak or open line
- B. Normal condition, because gauges only show pressure while the compressor is running
- C. A seized compressor that has stopped refrigerant from circulating in the loop
- D. An expansion valve stuck closed and holding all the refrigerant in the receiver

12. A tie rod end on a steer axle has a torn boot and shows play when pried with a bar. What should be done?

- A. Replace the tie rod end and have the alignment checked
- B. Repack the boot with grease and continue service
- C. Tighten the clamp on the boot and recheck in one month
- D. Weld the stud to stop the movement

13. On a combination vehicle inspection the brakes are applied with the engine off, and the gauge drops 40 kPa (6 psi) in one minute. The typical limit is about 28 kPa (4 psi) per minute. What does this result indicate?

- A. Normal leakage, since brake systems lose air constantly
- B. Excessive air leakage, so the source must be found and repaired
- C. A faulty gauge, since leakage cannot exceed 28 kPa at all
- D. A compressor fault that stops air from being replaced

14. A driver reports that the transmission grinds when selecting gears at a stop, even with the clutch pedal fully down. A technician finds more free play than specified and a spongy hydraulic release. What is the most likely cause?

- A. The clutch disc is worn too thin to transmit the full engine torque
- B. The clutch brake is installed backwards on the transmission input shaft
- C. Excess free play or air in the hydraulic release is stopping full release
- D. The flywheel has been resurfaced too much and sits too thin

15. A cab on a truck has a sagging rear corner, and an inspection finds the cab air suspension bag on that side leaking. What is the likely effect if left in service?

- A. No effect at all since the cab bag is only a cosmetic part
- B. A small reduction in fuel economy and nothing else
- C. Brake pedal travel will increase on that side
- D. Poor ride, cab misalignment, and contact with the frame or lines

16. A technician measures battery draw with the vehicle off and a meter set to its milliamp range. What is the correct way to take the reading?

- A. Connect the meter across the battery terminals in parallel with the battery posts
- B. Connect the meter immediately after the key is removed so all modules stay active
- C. Wait for module sleep, then connect the meter in series with the negative cable
- D. Hold the leads against the case of the starter and read the voltage drop

17. A fleet driver complains that the cab heater is weak in winter and the temperature gauge rarely climbs above the lower third of its range. Which fault should the technician suspect first?

- A. A thermostat stuck in the open position
- B. A radiator cap that is not holding rated pressure
- C. A water pump impeller that has eroded from cavitation
- D. A cooling fan clutch that is locked in the engaged position

18. After a pressure wash, an electric truck sets an isolation fault code. What is the most likely cause?

- A. A low tire pressure on the drive axle tires
- B. Moisture in a high-voltage connector lowering insulation resistance
- C. A worn clutch disc in the manual transmission
- D. A restricted fuel filter on the diesel heater

19. At a pre-trip check a drag link castle nut is found with no cotter pin. What is the correct action?

- A. Leave it since the nut is tight and will not back off
- B. Install a piece of wire in place of the missing pin
- C. Add thread locking compound and skip the cotter pin
- D. Torque the nut and install a new cotter pin before use

20. A truck's air compressor continues to build pressure until a reservoir safety valve opens. The governor is suspected. Which fault is most consistent with this symptom?

- A. A leaking drain valve on the wet tank under the cab
- B. A worn brake chamber diaphragm on the rear axle
- C. A governor that fails to signal the compressor to unload
- D. A plugged air dryer purge outlet at the bottom

21. When is a clutch brake normally used on a heavy-duty manual transmission?

- A. To slow the truck down during a downshift at highway speed
- B. To stop the input shaft when engaging first or reverse
- C. To hold the clutch disc firmly against the flywheel during acceleration
- D. To assist the parking brake on a steep grade or long hill

22. During engine cranking, the negative battery cable end is hot to the touch while the rest of the cable is cool. What does this indicate?

- A. A discharged battery with a failed cell and low specific gravity
- B. A worn starter drive gear that is skipping across the ring gear
- C. A restricted fuel filter that is starving the injection pump
- D. High resistance at a cable connection to the battery or chassis

23. The coalescing filter in the closed crankcase ventilation system of a diesel engine is found plugged solid. Which result should the technician expect?

- A. Rising crankcase pressure with oil leaks at seals and oil carried into the intake
- B. Low oil pressure at idle together with a noisy valve train on a cold start
- C. A rise in boost pressure with a whistling sound from the turbocharger
- D. Overheating of the coolant because the thermostat opens too late in service

24. A shop receives a drum of parts-washer solvent that carries a supplier label. The technician wants first aid measures, spill response steps, and the required gloves before decanting some into a small container. Where should this information be found?

- A. On the safety data sheet supplied for that specific product
- B. On the workplace label that the shop applies to the small container
- C. In the vehicle manufacturer service information for the unit being inspected
- D. On the pictogram panel of the drum, which lists the glove material required

25. The antilock lamp on a trailer stays on after the tractor ignition is switched on, and the tractor has no faults. Which check is most appropriate?

- A. The tractor's engine coolant level and the surge tank cap
- B. The trailer's rear door seals and the hinge pin lubrication
- C. The power and ground circuit at the trailer ABS module
- D. The tractor's windshield wipers and the washer fluid jets

26. Hydraulic fluid in a reservoir looks milky. What does this most likely indicate?

- A. The fluid is new and has additives
- B. The pump is running at the correct speed
- C. The filter is clean
- D. Water or air has mixed with the fluid

27. A truck has heavy steering when turning right but normal effort when turning left. The pump flow and fluid level are normal. What is the most likely cause?

- A. A low tire pressure on the left rear dual tire pair
- B. Internal leakage in the steering gear for that direction
- C. A restricted fuel filter on the engine supply side
- D. A weak battery in the number two position

28. A trailer pigtail cable has hardened insulation, cracks, and exposed copper conductors near the plug. What is the correct repair?

- A. Wrap the exposed conductors with electrical tape and keep the cable in service
- B. Coat the cracked insulation with paint to keep the water out of the cable
- C. Replace the cable or damaged section with a rated assembly using sealed connections
- D. Twist the exposed wires together and push them back inside the plug housing

29. Water is found when draining the primary reservoir on a tractor that recently had its air dryer serviced. Which cause should be checked first?

- A. A governor set slightly too high for the system pressure
- B. Saturated desiccant or a purge valve that is not cycling
- C. An air brake chamber with a worn pushrod at the wheel end
- D. A low-pressure warning switch with corroded terminals

30. On a manual transmission with a range and splitter, the splitter will not shift and air can be heard leaking at the shift valve. Which action is appropriate?

- A. Remove the transmission and replace the main shaft gear and bearings
- B. Change the clutch disc, pressure plate, and release bearing
- C. Fill the transmission with a heavier lubricant than specified
- D. Check the air supply, shift valve, and lines for leaks

31. A technician is setting overhead valve lash on a heavy-duty diesel. Which practice is correct?

- A. Position the engine at the crank angle the manufacturer specifies for each valve set and adjust to the stated clearance
- B. Adjust every valve in the engine in a single pass with the crankshaft at top dead center of cylinder one
- C. Set all intake and exhaust valves using the same feeler gauge thickness regardless of the valve
- D. Tighten the adjusting screws until the pushrods turn with heavy resistance

32. A coach air conditioner cools well at highway speed but poorly at idle. Which cause is most likely?

- A. A low engine coolant level in the surge tank of the cooling system
- B. An overfilled windshield washer reservoir behind the front bumper
- C. A worn clutch disc in the manual transmission
- D. Weak condenser airflow from a failing fan or a plugged condenser at low speed

33. A battery on a tractor is boiling and the charging voltage reads 15.8 volts at all engine speeds. Which component is most likely at fault?

- A. The starter solenoid or its hold-in winding
- B. The battery isolation switch on the frame rail
- C. The voltage regulator or sensing circuit
- D. The block heater cord and its ground-fault plug

34. A power steering pump whines and the fluid in the reservoir appears foamy. What should be checked first?

- A. The rear brake lining thickness on the drive axle wheels
- B. The fluid level and the suction hose for air leaks
- C. The charge air cooler hoses and the clamps at the cooler
- D. The wheel nut torque on the front wheels

35. A turbocharged engine produces blue smoke, and oil is found in the intake piping after the turbo. The compressor wheel shows no contact marks. Which cause should be checked first?

- A. A restricted turbo oil drain line or high crankcase pressure
- B. A cracked exhaust manifold upstream of the turbocharger inlet
- C. A plugged diesel particulate filter that is raising exhaust backpressure
- D. Contaminated fuel causing incomplete combustion at idle speed

36. An automatic slack adjuster is found beyond the allowable stroke during an inspection. What is the correct approach?

- A. Manually back off the adjuster nut and drive the unit to the next scheduled service
- B. Replace only the pushrod clevis pin and recheck the stroke
- C. Disable the adjuster and run on manual adjustment indefinitely
- D. Find the cause, such as worn parts or a bracket problem

37. An automatic transmission temperature gauge climbs above its limit while the truck climbs a long grade. What should be done?

- A. Reduce the load or stop to let it cool, then check fluid level, cooler flow, and the filter
- B. Shift to neutral and raise the engine speed to cool the fluid faster
- C. Add a heavier fluid at once to increase the fluid film between the plates
- D. Disable the temperature warning so the control module stops limiting power

38. A starter motor spins freely when energized but does not turn the engine, and no grinding is heard. Which fault is most likely?

- A. The battery cables have excessive resistance at the posts
- B. The ignition switch contacts are burned and not passing current
- C. The starter overrunning clutch is slipping
- D. The solenoid hold-in winding is open and drops out

39. During an inspection, a technician finds a star-shaped crack in the windshield directly in the driver's line of sight. Which requirement applies?

- A. Cracks in the windshield are never an inspection item
- B. The glass must be replaced if the damage obstructs the driver's view
- C. The crack should be filled with paint to prevent growth
- D. The wipers should be removed to avoid spreading the crack

40. A steer tire shows cupped wear, with scalloped high and low spots repeated around the tread. Which condition should the technician inspect first?

- A. Worn or weak shock absorbers or loose suspension and wheel-end components
- B. Excessive toe-in on the steer axle
- C. Tire inflation slightly above the placard pressure
- D. Too much positive caster on the steer axle

41. A truck with a variable-geometry turbocharger whistles loudly and shows boost well above specification at light throttle. Scan data shows the vanes commanded open while the actual position stays near closed. What is the most likely fault?

- A. The charge air cooler is leaking at a hose clamp or end tank
- B. The air filter is plugged and starving the compressor wheel
- C. The vanes or actuator are seized in the closed position
- D. The wastegate on a conventional turbo is stuck open

42. After tightening a series of fasteners during an inspection repair, a technician puts a click-type torque wrench back in its case. How should the wrench be stored to protect its calibration?

- A. At the highest scale setting so the click mechanism stays fully extended
- B. At the last torque value used so it is ready for the next identical job
- C. With the handle locked and the drive end pointing downward in the case
- D. At the lowest scale setting so the internal spring is not left under load

43. A kingpin is checked with a gauge and its wear exceeds the allowable limit. What should be done?

- A. Continue to use the trailer and recheck at the next service
- B. Replace the kingpin or upper coupler before the trailer is used
- C. Grease the kingpin heavily to hide the wear from the inspector
- D. Rotate the kingpin a quarter turn to a new wear position

44. A hydraulic pump is noisy and the fluid appears foamy. The suction strainer is found plugged. What condition is the pump experiencing?

- A. Overpressure from a stuck relief valve
- B. Normal wear from high flow
- C. Cavitation from insufficient fluid reaching the inlet
- D. A leaking cylinder seal

45. A brake drum shows a crack that runs through the friction surface to the outer edge. What should the technician do?

- A. Machine the drum to remove the crack and then reinstall it
- B. Leave the drum if the crack is shorter than the lining width
- C. Weld the crack and grind the repair smooth with the surface
- D. Replace the drum; the crack runs through the friction face

46. The fluid and filter in an automatic transmission show a dark colour, a burnt smell, and fine friction material. What should the technician conclude?

- A. The fluid is normal and the colour simply shows its age
- B. Internal clutches are worn, so repair is needed beyond a fluid change
- C. A fluid and filter change alone will solve the problem permanently
- D. The cooler lines are reversed at the transmission and the radiator tank

47. A 24-volt starter cranks slowly although the batteries and cables test good. Starter current draw is well above specification. What should the technician suspect?

- A. Starter bushing wear, armature drag, or engine mechanical drag
- B. A fault in the alternator rectifier diodes that lowers system voltage
- C. A weak air conditioning compressor clutch dragging on the belt
- D. A plugged oil filter that is restricting oil flow

48. A cab dash message requests a parked regeneration, and the soot load reads very high. The driver pulls over. What is the correct action?

- A. Shut the engine off at once to protect the filter from more heat
- B. Raise the engine speed by hand with the throttle for the entire cycle
- C. Keep the engine running in a safe spot until regeneration finishes
- D. Remove the exhaust sensors so the module cannot interrupt the cycle

49. A compressor has failed internally and the system must be repaired. Which item should be replaced along with the compressor?

- A. The receiver-drier or accumulator, plus flushing as required
- B. The cabin air filter only, with no other parts changed
- C. The engine thermostat and the radiator pressure cap
- D. The windshield washer pump and its hoses

50. A truck pulls to one side on a straight road, and the technician finds equal tire pressures and brakes in good order. Which alignment fault pulls a vehicle toward the side with less positive caster?

- A. Equal toe on both wheels
- B. Unequal caster between the left and right sides
- C. Equal camber on both wheels

D. A slightly higher tire pressure on both sides

51. An electric truck will not start although the high-voltage pack is charged. The 12-volt battery is low. Why does this prevent starting?

- A. The 12-volt battery turns the traction motor directly through a relay
- B. The high-voltage pack needs 12 volts to be recharged by the charger
- C. The 12-volt battery cools the high-voltage pack through a pump
- D. The 12-volt supply powers the modules and contactors that close the high-voltage circuit

52. A wheel-end inspection shows brake lining soaked with oil from a leaking inner wheel seal. Which repair is required?

- A. Clean the lining with brake cleaner and refit it to the same drum
- B. Replace the seal only and rely on the lining to burn off the oil
- C. Replace the linings, fix the seal, and clean the drum
- D. Sand the lining surface lightly and apply fresh grease to the cam

53. A stall test on an automatic transmission shows an engine speed well above the specification. What does this suggest?

- A. A clutch or band inside the transmission is slipping
- B. The engine has lost power in several cylinders
- C. The torque converter is working perfectly
- D. The drive axle ratio is too low

54. A technician is repairing a damaged section of a wiring harness on a truck. Which splice method is best for a lasting repair?

- A. Twist the wires together and wrap them with electrical tape
- B. Use sealed heat-shrink butt connectors, or solder, with staggered splices

- C. Use household wire nuts and tuck them away inside the loom
- D. Place all of the splices at the same point to keep it neat

55. A refractometer reading on a sample of diesel exhaust fluid shows a urea concentration of 20 percent. What should the technician conclude?

- A. The fluid is within normal limits because the reading is close to 32.5 percent
- B. The fluid is diluted or contaminated and must be drained and refilled
- C. The fluid has frozen and only needs to be thawed before use
- D. The reading is acceptable provided that the tank is more than half full

56. A crack is found in a frame rail at a spring hanger. Which approach is acceptable?

- A. Drill a large hole through the flange at the end of the crack
- B. Weld the crack and grind it flush without any reinforcement
- C. Leave the crack alone until it reaches the web
- D. Follow the manufacturer's repair procedure, possibly welding with an approved reinforcement

57. A 15-amp fuse for the headlamp circuit keeps blowing. A technician proposes fitting a 30-amp fuse to stop it. What is the correct response?

- A. Install the 30-amp fuse since it will carry the load
- B. Wrap the fuse holder in tape so the fuse does not blow again
- C. Find and repair the short and keep the specified fuse rating
- D. Replace the headlamp bulbs with a lower wattage type only

58. While carrying out an inspection, a technician finds a cracked frame rail gusset beside a rear spring hanger. How should this finding be handled in line with the inspection program?

- A. Record the location and description on the report and tag the unit according to the defect criteria
- B. Note it as a minor item to watch because the gusset is not the main frame rail itself

- C. Weld the crack on the spot and sign the report without listing the defect
- D. Tell the driver verbally and leave the report blank since the crack is small

59. A sliding tandem on a trailer is repositioned. What must the technician confirm before moving the trailer?

- A. The brake chambers are caged and the brakes are released
- B. The trailer has been fuelled and the reefer is running
- C. The landing gear is lowered and the crank handle is stowed
- D. All slider pins are fully extended and locked in the holes

60. A hydraulic cylinder holding a load slowly drifts down. With the cylinder port blocked and pressure applied, the cylinder continues to drift. What does this indicate?

- A. A leak at the load-holding valve
- B. A faulty pump
- C. Contaminated fluid in the reservoir
- D. Leakage past the piston seal inside the cylinder

61. A technician finishes a spring brake chamber repair and the unit is ready to leave the shop. What must be confirmed regarding the caging bolt used during the work?

- A. The caging bolt is backed out and stored so the spring can apply
- B. The caging bolt is left tight so the spring cannot release the brake while moving
- C. The caging bolt is replaced with a longer bolt to make later service easier
- D. The caging bolt is removed and the hole is left open to drain water

62. A technician replaces the clutch in an automated manual transmission. What step is required before the truck returns to service?

- A. Bleed the air brake system to remove trapped air from the lines

- B. Run the clutch calibration or touch-point learn with the service tool
- C. Reset the engine oil change interval in the instrument cluster
- D. Adjust the free play at the clutch pedal linkage under the dash

63. An engine has the correct diesel exhaust fluid quality, yet scan data shows low nitrogen oxide conversion efficiency and a derate warning. The dosing valve is operating at the commanded rate. Which inspection is most appropriate next?

- A. Replace the fuel filter and bleed the low-pressure supply system
- B. Recalibrate the variable turbocharger actuator using the manufacturer service tool software
- C. Check the dosing injector tip and mixing pipe for crystallized deposits
- D. Check the engine oil viscosity grade against the service interval

64. A steer tire has a cord showing through the sidewall and a bulge. What action is required?

- A. Patch the bulge and keep it on the rear axle
- B. Reduce the tire pressure to ease the load
- C. Remove the tire from service and replace it
- D. Wrap the sidewall with tape and monitor

65. What is the purpose of a diode connected across the coil of a relay in a truck's control circuit?

- A. It suppresses the voltage spike produced when the coil is switched off, protecting the module
- B. It raises the coil voltage so the relay contacts close faster
- C. It stops the relay contacts from welding together under heavy load current
- D. It reverses the coil polarity so the relay releases more quickly each time

66. A tractor shows white exhaust smoke and a steady coolant loss with no external leaks and no oil contamination. Which component is most likely leaking internally?

- A. The engine oil cooler

- B. The radiator top tank
- C. The heater hose connection at the firewall
- D. The exhaust gas recirculation cooler

67. A tractor has the antilock braking lamp on, and a diagnostic code reports a wheel speed sensor circuit fault at the left front. The sensor resistance reads open. What should be checked before replacing the sensor?

- A. The compressor governor cut-in and cut-out pressure settings
- B. The sensor connector and harness for corrosion or loose pins
- C. The brake drum diameter and the lining thickness at that wheel
- D. The dryer purge valve and the desiccant cartridge condition

68. An automated manual transmission will not engage a gear, and a code shows low air supply to the actuator. Which action should be taken?

- A. Check system air pressure and the transmission air line and filter
- B. Replace the transmission control unit and reprogram it immediately without any further testing
- C. Change the drive axle lubricant to a heavier grade
- D. Reduce the tire pressure in the drive tires by 70 kPa

69. A seat belt on a coach shows frayed webbing near the buckle after a minor collision. What action is correct?

- A. Cut off the frayed section and reuse the belt
- B. Tape the webbing and leave the belt in service
- C. Replace the seat belt assembly
- D. Reduce the load carried in that seat

70. After repairing an air conditioning leak, why is a vacuum applied to the system before it is charged?

- A. To add refrigerant oil to the compressor crankcase before charging
- B. To cool the condenser before the charge is added
- C. To raise the pressure to the normal operating level
- D. To remove air and moisture and check for leaks

71. On a trailer inspection, the lights are checked for the correct colours. Which arrangement of side marker lamps is correct?

- A. Red at the front and amber at the rear
- B. Amber at the front and red at the rear
- C. White at the front and red at the rear
- D. Amber at both the front and the rear

72. Cracks are found radiating from the stud holes on a disc wheel. What is the correct action?

- A. Weld the cracks and repaint the wheel
- B. Install larger wheel nuts to hold it together
- C. Ignore the cracks if they are less than 25 mm long
- D. Replace the wheel

73. A tractor overheats on long summer climbs although the coolant level, thermostat operation, and fan clutch engagement are all normal. Which inspection should be done next?

- A. Replace the oil filter and change to a heavier engine oil grade
- B. Check the fuel filter restriction gauge and the lift pump pressure
- C. Look for debris or bent fins blocking airflow through the radiator and charge air cooler
- D. Retime the injection pump to retard the start of injection

74. On a tractor-trailer, the trailer brakes apply automatically when the supply line is disconnected from the tractor. Which valve is responsible for this function?

- A. The trailer emergency relay valve
- B. The tractor quick release valve
- C. The brake application treadle valve
- D. The air dryer governor

75. A transmission-mounted power take-off is being engaged on a dump truck. Which is the correct practice?

- A. Engage it while driving at highway speed to save time on the job
- B. Engage it stationary with the clutch depressed, per the manufacturer's procedure
- C. Engage it with the engine running at full throttle for best torque
- D. Engage it after removing the driveshaft from the rear axle

76. A service truck is carrying an acetylene cylinder to a roadside repair. Which transport practice is correct?

- A. Lay it flat on the deck so the contents settle away from the valve outlet
- B. Carry it loose in the cab so it stays warm and the acetylene stays stable
- C. Keep it upright, secured against movement, with the valve protection cap installed
- D. Leave the cap off so any leaking gas can escape quickly into the open air

77. A refrigerated trailer unit cannot hold its set temperature. The compressor runs, but the condenser coil is plugged with debris. What is the correct action?

- A. Add refrigerant until the pressure rises
- B. Replace the compressor immediately
- C. Turn off the defrost cycle
- D. Clean the condenser coil and recheck pressures and temperature

78. A newly installed hydraulic hose is found twisted along its length. Why is this a concern?

- A. Twisting can loosen fittings under pressure and shorten the life of the hose
- B. Twisting has no effect because the reinforcement is made to rotate
- C. Twisting raises the system pressure and speeds up the actuator
- D. Twisting filters the fluid and removes air from the circuit

79. Before checking headlamp aim, what should the technician make sure of?

- A. The engine is running at fast idle with the high beams turned on
- B. The vehicle is level with correct tire pressure and a normal load
- C. The vehicle has been washed so the headlamp lenses are clean
- D. The batteries have been disconnected for at least ten minutes

80. Why are wheel nuts tightened in steps using a star pattern?

- A. To stretch the studs permanently so they last much longer
- B. To reduce the torque needed on the final tightening pass
- C. To seat the wheel evenly and avoid uneven clamp load
- D. To make the wheel easier to remove at the next service

81. A water-in-fuel lamp comes on at a periodic inspection. The technician drains the separator and the light goes out. What should be done next?

- A. Ignore the warning because draining the separator cleared the light
- B. Find the source of water entry and correct it
- C. Add a larger volume of fuel additive to absorb all remaining water
- D. Replace the fuel lift pump immediately and bleed the whole system

82. A harness fault on a truck is intermittent and clears when the wiring is moved. What is the best way to locate it?

- A. Watch the circuit with a meter while flexing the harness in sections

- B. Replace the entire harness at once without testing any of the circuits first
- C. Increase the fuse rating for the circuit so it stops blowing
- D. Wait until the fault becomes permanent before doing any testing

83. A straight truck pulls to the right during hard braking on a dry road. The brake chambers show equal stroke. Which cause is most likely?

- A. A low-pressure warning switch that is out of calibration
- B. A governor cut-in pressure that has been set too low
- C. A worn compressor piston ring letting oil past the rings at high speed
- D. Contaminated or glazed lining at one of the left wheel ends

84. A driveline clunks when the driver takes up power and a technician finds the slip yoke seized with dried grease. What is the likely result if it is left in service?

- A. The truck will gain fuel economy because of the reduced driveline movement
- B. The differential will lock in place and stop the rear wheels
- C. The transmission will shift sooner under a light throttle at low speed
- D. The shaft cannot change length, so joints and bearings bind and wear

85. A disabled battery-electric truck must be moved to the shop. Which towing practice is correct?

- A. Tow it with the drive wheels on the road at highway speed so the pack recharges
- B. Follow the manufacturer's towing procedure, which may require flatbed transport or lifting the drive wheels
- C. Tow it in neutral on a short chain after disconnecting only the twelve-volt battery
- D. Tow it with the drive axle turning, since the motor cannot be damaged when the truck is off

86. Which condition most often leads to wheel nuts loosening after a wheel installation?

- A. Using a torque wrench at the correct setting each time

- B. Clean mating faces and the correct type of nut
- C. Paint buildup or corrosion on the mounting surfaces
- D. A hub piloted wheel installed on a clean hub

87. A serpentine belt on a diesel engine shows glazing and several missing rib sections during an inspection. What is the correct action?

- A. Replace the belt and check the tensioner and pulley alignment
- B. Apply belt dressing and recheck at the next service interval
- C. Tighten the idler pulley until the glazing disappears from the belt
- D. Trim the damaged ribs and refit the same belt on the pulleys

88. A coach has very low airflow from its vents although the blower runs on all speeds. What should be checked first?

- A. The cabin air filter and evaporator airflow path for restriction
- B. The compressor oil level and the clutch air gap
- C. The engine oil pressure at idle and at high speed
- D. The brake pedal free travel at the treadle valve

89. All gauges on a truck read zero while the engine runs normally, and codes show loss of communication with the instrument cluster. What should the technician check first?

- A. The condition of the engine air filter and its restriction gauge
- B. The tread depth on the steer tires and the tire pressure
- C. Power, ground, and data connections at the instrument cluster
- D. The level of the engine coolant in the surge tank

90. A bus with hydraulic brakes has a pedal that slowly sinks toward the floor with steady foot pressure, and no external leaks are visible. What is the most likely cause?

- A. Air in the compressor discharge line
- B. A worn wheel seal on a drive axle
- C. A weak spring in the hand valve
- D. Internal leakage across the master cylinder piston seals

91. A driveline vibration and squeal come from the centre support bearing. The rubber cushion is cracked. What is the correct repair?

- A. Add grease to the bearing and ignore the cushion
- B. Replace the bearing and cushion and check the shaft alignment and bracket
- C. Tighten the bracket bolts and keep the cracked cushion
- D. Cut the cushion off and run without it

92. An apprentice measures brake lining thickness incorrectly and records the result without checking it. The journeyperson wants the apprentice to learn the method properly. Which approach follows sound mentoring practice?

- A. Take over the task and complete the inspection quietly so the report is correct
- B. Hand the apprentice the service manual and have them reread it unsupervised
- C. Mark the record as wrong in front of the crew and move on without explanation
- D. Demonstrate the measurement, watch the apprentice repeat it, and give specific feedback on any errors

93. During an inspection a trailer's rear underride guard is cracked at a weld and bent upward on one side. What is the correct action?

- A. Paint over the cracked weld and continue to use the trailer as it is
- B. Repair or replace the guard to the required strength before the trailer is used
- C. Straighten the guard cold with a hammer and leave the cracked weld untouched
- D. Remove the guard completely since it is only a cosmetic bumper component

94. A filter bypass indicator reads in the red zone when the hydraulic oil is cold on a winter start. What should the technician do?

- A. Recheck once the oil is warm, since cold oil can read falsely
- B. Replace the filter element immediately every time it reads red when cold
- C. Remove the indicator and ignore the filter from then on
- D. Add thinner oil to the tank until the indicator turns green

95. A coolant temperature sensor circuit on a truck develops an open circuit. What is the most likely result?

- A. The control module shuts down the engine immediately and cannot be restarted
- B. The sensor signal reads zero and the engine runs normally with no fault set
- C. The control module sets a circuit fault and substitutes a default temperature value
- D. The turbocharger boost is reduced to zero for safety

96. A dual tire pair has a 70 kPa (10 psi) difference in pressure between the two tires. What is the likely result?

- A. Both tires will share the load equally across the pair
- B. The lower pressure tire will run cooler and last longer
- C. The higher-pressure tire carries more load and wears unevenly
- D. The wheel studs will carry less load than normal

97. A mirror on a straight truck is cracked and the convex mirror on the passenger side is missing. How should this be recorded and repaired?

- A. As a defect to be repaired, restoring the required view
- B. As acceptable since the other mirrors still work well enough
- C. As a cosmetic note only with no repair being required
- D. As a reason to fit a smaller mirror in place of both

98. A technician finds green corrosion on terminals inside a junction box that holds water after rain. Which repair is most appropriate?

- A. Spray the terminals with silicone grease and close the box without further work
- B. Replace the fuses with higher rated ones so the circuits keep running
- C. Bridge the corroded terminals with a jumper wire and leave the box as it is
- D. Clean or replace the corroded terminals, find the water source, and seal the box

99. The brakes on one axle are slow to release after the pedal is let up, while the other axles release normally. Which component should be checked first?

- A. The air compressor unloader and governor line at the engine
- B. The relay or quick release valve exhaust on that axle
- C. The trailer supply valve on the dash and its control spring
- D. The air dryer heater and its thermostat connection

100. During an inspection, a universal joint has rust-coloured dust around the cup seals and feels stiff when turned by hand. What is the correct action?

- A. Add more grease and continue service
- B. Wipe off the dust and recheck at the next service
- C. Tighten the cup retainers until the joint is free
- D. Replace the universal joint

101. An engine brake does not operate. The control solenoid shows normal voltage when commanded. What should be checked next?

- A. The tire pressures on both the drive axles and the steer axle
- B. The refrigerant charge in the air conditioning system circuit
- C. Oil pressure to the brake housing and the slave piston lash
- D. The clutch free play at the pedal during a full stroke

102. The signal voltage from an accelerator pedal position sensor jumps and drops while the pedal is moved slowly. What is the most likely cause?

- A. A low coolant level in the surge tank of the cooling system
- B. A worn resistive track or contact in the sensor
- C. A restricted air filter on the engine intake system pipe
- D. A loose wheel nut on the left front wheel

103. During an inspection a main leaf in a rear leaf spring pack is found broken. What does this require?

- A. Repair or replacement of the spring and inspection of the pack
- B. Nothing, because the other leaves can carry the load safely
- C. Only an adjustment of the ride height at the leveling valve
- D. Adding a spacer under the axle seat to restore height

104. A viscous fan clutch is found running at full speed on a cold engine with the temperature gauge low. What does this indicate?

- A. The fan clutch is operating normally under heavy load
- B. The fan clutch is stuck in the engaged position
- C. The thermostat is stuck closed
- D. The radiator cap has failed

105. On a humid day, clear and odourless water drips onto the floor from under the dash of a coach while the air conditioning runs. Which cause is most likely?

- A. An overcharge of refrigerant that has pushed liquid into the cab
- B. A failed compressor clutch that is leaking oil into the vents
- C. A plugged evaporator drain tube that is letting condensate back up
- D. A heater core leak that is dripping coolant onto the carpet

106. During an inspection, the low-pressure warning buzzer fails to sound when reservoir pressure is drained below 415 kPa (60 psi). What should be concluded?

- A. The buzzer is optional equipment and may be left unrepaired
- B. The governor is out of adjustment and should simply be reset
- C. The brake chambers are leaking and need new service diaphragms
- D. The warning device or its circuit is defective and needs repair

107. An inter-axle differential lock is used on a tandem drive axle. What is the correct use?

- A. Engage it before wheels spin, at low speed, and disengage once traction improves
- B. Keep it engaged at all times on dry highway pavement
- C. Engage it while the wheels are already spinning at speed
- D. Use it only while the vehicle is parked

108. The speedometer reads zero and cruise control is disabled, yet the truck drives normally. A vehicle speed sensor code is stored. What should be checked?

- A. The air compressor governor and its pressure signal line
- B. The coolant thermostat and the temperature gauge sender
- C. The speed sensor and its wiring and connector
- D. The brake lining thickness on the rear drive axle

109. A truck with an air suspension sits low on one side after standing overnight, but rises when the engine is run. What is the most likely cause?

- A. A worn steering gear box on the front axle housing
- B. A weak battery in the chassis battery box
- C. A plugged oil filter on the engine side
- D. An air leak at a spring, fitting, or valve

110. On a trailer inspection, a dial indicator mounted on a wheel hub shows 0.20 mm of movement when the hub is pushed and pulled. The wheel-end specification is 0.025 to 0.127 mm of end play. What does this reading indicate?

- A. The bearings are within specification because the reading is under one millimetre
- B. Bearing end play is excessive and the adjustment must be corrected
- C. The dial indicator should be zeroed against the brake drum before reading
- D. The reading shows preload, so the spindle nut needs to be loosened slightly

111. After hooking up a trailer, the trailer brakes are found dragging. The glad hands may be connected incorrectly. Which fault would cause this?

- A. The service and supply lines are crossed at the glad hands
- B. The landing gear is fully raised and the crank is stowed
- C. The trailer lights are on and the marker circuit is live
- D. The kingpin is greased and the fifth wheel is locked

112. A technician connects a gauge to a hydraulic circuit to check the pump relief setting. Which procedure is correct?

- A. Install the gauge at the test port and dead-head the circuit briefly
- B. Loosen a fitting and read the pressure from the spray pattern
- C. Connect the gauge to the reservoir drain plug at the bottom
- D. Read the pressure with the pump turned off and the circuit idle

113. A diesel engine shows low oil pressure at hot idle but normal pressure above 1,200 rpm. What is the most likely cause?

- A. A plugged oil filter
- B. Excessive bearing clearance from wear
- C. A restricted pickup screen in the pan
- D. Oil that is too thick for the climate

114. The backup alarm on a vocational truck does not sound in reverse. The alarm unit tests good on the bench. Which item should be tested next?

- A. The air conditioning pressure switch on the receiver-drier body line
- B. The fuel pressure sensor on the low-pressure rail
- C. The reverse switch and its circuit at the transmission
- D. The wheel speed sensor tone ring on the front axle

115. A technician sees air escaping from the vent hole of a service brake chamber each time the brakes are applied. What does this indicate?

- A. A normal exhaust from the quick release valve
- B. A leaking spring brake power spring
- C. A plugged air dryer
- D. A ruptured service diaphragm in that chamber

116. Oil is found on the inside of a drive tire at one wheel end. The axle lubricant level is normal. What is the most likely cause?

- A. A low coolant level in the engine cooling system
- B. A worn steering gear on the front axle housing
- C. A plugged axle breather that raises housing pressure
- D. A weak air spring on the drive axle suspension

117. How should the ride height of an air suspension be adjusted?

- A. At normal pressure on level ground by adjusting the valve linkage
- B. With the system fully drained so the air springs are collapsed flat
- C. By changing the tire pressures until the frame is level
- D. By shortening the shock absorber mounting bolts and spacers

118. A DC fast charging session on an electric truck keeps stopping, and the technician sees discolouration on a charge port pin. What should be done?

- A. Charge at a higher current to overcome the intermittent fault
- B. Inspect the charge port for heat damage and repair it
- C. Ignore the discolouration since it is only a cosmetic issue on the pin
- D. Bypass the communication pins with a short jumper wire to keep charging

119. A heavy-duty engine's air filter restriction indicator is fully in the red zone at a periodic inspection. What is the correct action?

- A. Reset the indicator and continue because it is only a reminder
- B. Tap the element on the ground and reinstall it without inspection
- C. Remove the element completely to improve airflow
- D. Service the air filter element and reset the indicator

120. Why should a conventional incandescent test light be avoided when testing circuits connected to an electronic control module?

- A. It can draw enough current to damage the module
- B. It cannot detect voltage in a 24-volt system at all
- C. It always shows a wrong reading when probing a ground wire
- D. It makes the module reset its stored codes on contact

121. A hydraulic cab tilt pump is slow to raise the cab, and the reservoir fluid level is low. What should be done?

- A. Add any available oil to the reservoir and tilt the cab
- B. Disable the safety prop and tilt the cab by hand
- C. Remove the pump and run the cab tilted by cable

D. Check for leaks, correct them, and fill the reservoir with the specified fluid

122. A technician replaces a failed brake chamber on one end of a drive axle. Which practice is correct?

- A. Install any chamber that will physically fit on the bracket without checking size
- B. Also replace the opposite chamber, using the same type and size
- C. Replace only the failed chamber and leave the other end as it is
- D. Use a different size chamber on each end to compensate for lining wear

123. After a long trip, an infrared reading shows one drive wheel hub is 40 degrees Celsius hotter than the others. What does this suggest?

- A. A normal difference in tire temperature between the wheel positions
- B. A defective fuel filter in the main supply line housing
- C. A bearing adjustment or lubrication problem at that wheel end
- D. A worn clutch disc that is slipping under heavy load

124. A shock absorber has oil streaks down the lower housing and feels weak when stroked by hand. What is the correct action?

- A. Top up the oil through the dust cap
- B. Replace the shock absorber, normally as a pair on the axle
- C. Remove it and drive without it
- D. Paint over the housing to stop the leak

125. A tractor engine shows high crankcase pressure after a turbocharger replacement. The old turbocharger had a worn shaft. What should the technician verify before returning the unit to service?

- A. That the engine oil is replaced with a thinner viscosity grade
- B. That the radiator is flushed with fresh coolant
- C. That the turbo oil supply and drain lines are clear

D. That the fuel injection pump timing is advanced a few degrees

126. Why must refrigerant be recovered from an air conditioning system with proper equipment rather than released?

- A. Releasing it leaves a smell in the cab that is hard to remove
- B. The system will not accept a new charge until it is vented
- C. Releasing it speeds up compressor wear and shortens the clutch life
- D. Refrigerants are regulated for their environmental harm, so certification is required

127. A wiper motor on a coach runs only at high speed. Low speed and intermittent do not work. Which component is most likely at fault?

- A. The speed resistor or control module for the wiper motor
- B. The windshield washer pump and its fluid reservoir line
- C. The vehicle speed sensor on the transmission tail housing
- D. The engine control module software calibration for the engine

128. A technician installs a new spin-on oil filter during an inspection service. Why should a thin film of clean engine oil be applied to the filter gasket before installation?

- A. It fills the filter with oil so the engine has no dry start after installation
- B. It increases the clamping force so the filter can be tightened with less torque
- C. It lets the gasket seat and seal without tearing and makes later removal easier
- D. It prevents oil from bypassing the filter element when the engine is first started

129. A trailer tandem shows scrubbed tire wear on both axles on the same side. Which cause is most likely?

- A. An over-inflated spare tire
- B. Axle misalignment that skews one side of the tandem

- C. A weak battery on the tractor
- D. A plugged breather on the trailer lamp

130. A hydraulic motor on a spreader runs slowly although the pump and relief valve are good. A case drain flow test shows flow well above the limit. What does this indicate?

- A. The reservoir is overfilled
- B. The relief valve is stuck closed
- C. The filter element is new
- D. The motor has excessive internal leakage and is worn

131. At key-on during a bulb check, the antilock braking warning lamp on a tractor never lights. What does this mean for the inspection?

- A. The lamp circuit is defective and must be repaired
- B. The system is functioning correctly and the lamp is simply not needed
- C. The sensors are working so the lamp turns itself off automatically
- D. The compressor governor is holding the lamp off during the bulb check

132. A transmission-mounted output retarder is disabled by the control module while the truck is driven on ice. What is the most likely reason?

- A. The module turns it off during ABS activity to prevent wheel lockup
- B. The retarder fluid is too cold to flow
- C. The output shaft has broken
- D. The vehicle is out of fuel

133. Which practice gives the most reliable tire inflation check during an inspection?

- A. Check the pressure immediately after a long run, when the tire is at its working temperature
- B. Bleed hot tires down until they read the cold pressure value shown on the placard

- C. Check the pressure with a gauge while the tires are cold and compare it with the specified value
- D. Set every tire to the maximum pressure printed on the sidewall regardless of load

134. An oil analysis report on a high-mileage tractor shows high silicon together with rising aluminum and iron wear metals. Which condition should the technician investigate first?

- A. A leaking radiator that is losing coolant into the oil system
- B. Fuel dilution from a leaking injector seal in the cylinder head
- C. Oil that is too thin for the operating temperature of the engine
- D. Unfiltered air entering through a loose intake joint or torn hose

135. A pre-purchase inspection finds the master battery disconnect switch in the off position and the dash dark. What is the correct first step to check the truck's electrical systems?

- A. Jump the starter solenoid directly to the battery with a cable
- B. Close the disconnect switch, then check battery voltage and the dash
- C. Remove the batteries and bench test them before checking anything else
- D. Replace the ignition switch before any other checks are made

Practice Exam 16: Answer Key and Explanations

1. D — A voltage drop of 1.8 volts on the ground side means the return path has high resistance, which leaves less voltage across the lamp, so it glows dim. A bad regulator or weak battery would affect all lamps, and an open fuse would turn the lamp off rather than dim it. Cleaning or repairing the ground restores brightness.

2. B — A rising oil level together with a fuel smell and thin oil points to fuel entering the crankcase through a leaking injector or related fuel component. Coolant contamination makes oil milky rather than fuel scented. A restricted breather raises crankcase pressure but does not add fuel, and worn guides do not raise the level.

3. A — Free play can come from the column joints, steering gear, drag link, or tie rods, and watching each joint while the wheel is turned shows where movement is lost. Replacing the gear first may fix

nothing, and tread depth and washer fluid do not relate to steering lash. The loose joint is repaired or replaced.

4. A — Common inspection criteria place a vehicle out of service when twenty percent or more of its service brakes are defective, and two of ten is exactly twenty percent. Stating that two brakes is minor ignores the rule, and the criteria count brakes across the combination, not just the steer axle or just the trailer.

5. C — Free play ensures the release bearing is off the pressure plate levers when the pedal is up, and with none, the clutch is never fully clamped, so it slips and burns. Excessive free play would cause dragging, not slipping, and a clutch brake or lubricant would not cause burnt smell under load. Adjusting free play restores clamp load.

6. D — Brake checks during an inspection involve releasing and applying brakes, so the parking brake cannot be the only restraint over a pit. Shutting off, removing the key, and chocking removes the chance of movement. An idling engine or a driver in the cab adds hazards, and cycling brakes does nothing to secure the unit.

7. B — Landing gear needs lubrication at the gear box and moving parts, and stiffness often indicates dryness or damage that should be checked. Oil on the crank does not reach the gears, welding the gear creates a hazard, and leaving it dry causes wear. The legs are also checked for bending that causes binding.

8. B — A relief valve that is open all the time converts pump power to heat, so the system heats up, and the cause is a low setting or a valve held partly open. An overfilled reservoir, a new hose, and a plated rod do not make the valve open. Testing the relief setting against specification confirms the fault.

9. D — Batteries in parallel should be matched in age and capacity because the weaker one draws unequal charge and discharge current, which stresses both and shortens their life. Parallel wiring keeps voltage the same, the new battery does not carry all current by itself, and the alternator does not shut off from two batteries.

10. C — Blow-by is combustion gas leaking past worn rings or liners into the crankcase, which raises crankcase pressure and pushes vapour and oil out of the breather and dipstick tube. A cold thermostat or low boost does not pressurize the crankcase, and air in the fuel affects starting and running, not breather vapour.

11. A — With the system off, refrigerant pressure equalizes at a value that depends on ambient temperature, so a healthy system never reads zero on a warm day. Zero on both gauges means the charge has escaped through a large leak or an open line. A seized compressor or stuck valve still leaves static pressure.

12. A — A torn boot lets dirt in and the play shows the joint is worn, so the end is replaced and the alignment is checked because the replacement changes toe. Packing grease or tightening a clamp does not repair a worn joint, and welding the stud makes the joint unsafe and ruins steering geometry.

13. B — A drop of 40 kPa in one minute exceeds the typical limit of about 28 kPa for a combination vehicle with the brakes applied, so there is a leak that must be located with soap solution and repaired. A compressor does not run with the engine off, and the gauge result is not automatically wrong.

14. C — A clutch that does not fully release keeps the input shaft turning, which causes grinding on engagement, and excess free play or air in a hydraulic release limits release travel. A worn disc causes slipping rather than dragging, and a backward clutch brake or a thin flywheel would not produce a spongy pedal.

15. D — A cab air mount carries part of the cab weight, and a leak lets that corner sag, which affects ride, alignment, and clearance to lines and the frame. It is not cosmetic. The effect is mechanical rather than a fuel or brake issue. Replacing the bag and checking the leveling valve restores the cab position.

16. C — Parasitic draw is measured with the meter in series so all current flows through it, and the modules must be allowed to enter sleep mode first or the reading will be falsely high. Connecting the meter across the terminals in the current range shorts the battery, and measuring at the starter case does not give a current reading.

17. A — A thermostat stuck open lets coolant circulate through the radiator continuously, so the engine warms slowly, runs cool, and gives poor cab heat. A weak cap lowers the boiling point but does not overcool the engine. An eroded impeller would cause overheating, and a locked fan clutch would also cool excessively but usually with noise and fuel use.

18. B — An isolation fault means the high-voltage system has lost insulation from the chassis, and water forced into a connector or component after washing is a common cause. Tire pressure, a clutch disc, and a fuel filter are not part of an electric drive system. The area is dried and insulation resistance is tested with appropriate equipment.

19. D — A castle nut on a steering ball stud relies on the cotter pin to stay in place, so a missing pin is a safety defect because the nut can back off and release the linkage. The nut is torqued and a new pin is fitted. Wire or locking compound is no substitute.

20. C — The governor signals the compressor unloader when pressure reaches cut-out, and if it does not, pressure keeps rising until the safety valve opens. A leaking drain or a worn diaphragm loses pressure rather than building it, and a plugged purge outlet causes dryer issues but not unchecked pressure rise. Watching the gauge climb past cut-out confirms the governor.

21. B — A clutch brake squeezes the disc against the transmission input shaft when the pedal is pushed to the floor, so the shaft stops spinning and first or reverse can be engaged from a stop without clash. It is not used on the move, does not hold the disc against the flywheel, and does not help the parking brake.

22. D — Heat concentrates where resistance is high, so a hot cable end during cranking points to a corroded or loose connection that is dropping voltage and wasting energy as heat. A weak battery would not heat one cable end, a worn drive gear causes grinding, and a fuel restriction has no link to cable heat. The connection is cleaned and tightened.

- 23. A** — A closed crankcase ventilation filter lets blow-by gas leave the crankcase while separating oil mist. When it plugs, crankcase pressure rises, which pushes oil past seals and gaskets and can send oil into the intake. It does not lower oil pressure, raise boost, or affect the thermostat. Replacing the filter at its interval prevents the leaks and contamination.
- 24. A** — The safety data sheet has sixteen sections that cover first aid, spill response, and personal protective equipment for the product. The supplier label shows only summary hazards, and the workplace label identifies the decanted contents. Vehicle service information deals with the truck, not with chemical handling or first aid for a solvent.
- 25. C** — A trailer module needs power and ground, usually supplied through the tractor connection, so a lamp that remains on after key-on is investigated at the module circuit and connector. Coolant, door seals, and wipers are not part of the trailer antilock circuit. A corroded pin or broken wire is common.
- 26. D** — Milky hydraulic fluid usually means water has entered or air is whipped into the oil, both of which harm pumps and valves, so the source is found and the fluid is replaced. New fluid, correct pump speed, and a clean filter do not make fluid cloudy. Condensation and a leaking seal are common sources.
- 27. B** — Normal pump output with heavy steering in one direction only points to the steering gear leaking internally for that direction, since pressure cannot build on that side of the piston. A low rear tire would affect handling rather than create one-way effort, and a fuel filter or battery do not affect steering assist.
- 28. C** — Cracked insulation and exposed conductors let water in and can short the lamp or antilock circuits, so the cable or damaged section is replaced with a rated assembly using sealed connections. Tape and paint do not restore insulation strength or flexibility, and twisting bare wires into a housing invites corrosion and shorts.
- 29. B** — An air dryer removes moisture with desiccant and expels it through the purge valve, so water in the tank points to saturated desiccant or a purge valve not cycling. A high governor setting, a worn pushrod, and a corroded warning switch do not let moisture pass the dryer or load the tanks with water.
- 30. D** — A splitter shifts using air, so a shift fault with an audible leak calls for checking the supply pressure, shift valve, and lines first. Pulling the transmission, replacing the clutch, or changing lubricant weight does not address an air leak. Repairing the valve or line is far faster and cheaper than disassembly.
- 31. A** — Manufacturers publish a rotation sequence and crank positions so each valve is on its base circle when adjusted, and the intake and exhaust specifications often differ. A single pass at one position misses valves that are not on their base circle, and tight pushrods mean no lash. Using one thickness ignores the different clearances.
- 32. D** — At highway speed ram air pushes enough air through the condenser to reject heat, but at idle the condenser depends on the fan, so a failing fan or plugged condenser causes poor cooling only at low speed. Coolant level, washer fluid, and a transmission clutch have no effect on refrigerant heat rejection.

33. C — A charging voltage that stays far above the normal range of about 13.8 to 14.4 volts means the regulator is not limiting output, or the voltage sensing circuit is giving it the wrong signal. The starter solenoid, isolation switch, and block heater do not control charging voltage. The overcharge boils electrolyte and damages the batteries.

34. B — Foamy fluid and whine mean air is entering the pump, usually from a low fluid level or a loose or cracked suction hose, so those are checked first. Brake lining, charge air hoses, and wheel nuts do not affect aeration of the steering fluid. The leak is repaired and the system is bled.

35. A — Oil reaching the compressor outlet usually means the turbo oil drain is restricted or crankcase pressure is high, which pushes oil past the seal. A manifold crack lets exhaust leak and lowers boost but does not feed oil to the intake. A plugged filter and bad fuel produce different smoke, not oil in the piping.

36. D — An automatic slack adjuster that is out of adjustment signals a fault such as worn camshaft bushings, a bent bracket, or a worn adjuster, and simply resetting it hides the cause. Manually backing off and driving away leaves the defect, and a clevis pin change or disabling the adjuster does not correct the underlying cause.

37. A — Overheated automatic transmission fluid breaks down and burns the clutches, so the load is reduced or the truck is stopped to let the fluid cool, and the technician then checks the fluid level, the cooler flow, and the filter for restrictions. Revving in neutral adds heat, heavier fluid does not suit the specification, and disabling a warning invites failure.

38. C — A starter that spins freely without turning the engine has lost its drive, and the overrunning clutch that transmits torque from the armature to the pinion is the likely failure. High cable resistance would slow the motor, a burned switch would stop it from running, and an open hold-in winding would cause the solenoid to drop out.

39. B — Windshield damage in the driver's line of sight reduces visibility and can spread, so inspection criteria call for replacement when it obstructs the view. Cracks are inspection items, paint does not repair glass, and removing the wipers reduces visibility further. Replacement uses the correct adhesive and the full cure time before the vehicle is driven.

40. A — Cupping is a repeating pattern of high and low spots caused by the tire bouncing or the wheel moving, so worn shocks, loose wheel bearings, or loose suspension parts are inspected first. Excess toe causes feathering, high pressure causes centre wear, and caster affects steering stability rather than cupping. Replacing the worn parts and balancing the wheel stops the pattern.

41. C — A commanded position that differs from actual position with high boost means the vanes or actuator are stuck closed, which accelerates the turbine and raises boost. A leaking cooler or plugged filter would lower boost. A variable-geometry turbo has no conventional wastegate, so that option does not describe this unit.

42. D — A click-type wrench uses a calibrated spring, and leaving it compressed at a high setting lets the spring relax and drift out of calibration. Backing it down to the lowest scale mark unloads the spring without bottoming it. Storing it at the last value or the maximum keeps the spring stressed.

43. B — A worn kingpin can pull through the fifth wheel jaws or let the trailer move, so the part must be replaced before the trailer is used. Waiting for the next service allows a failure, grease hides nothing, and a kingpin cannot be rotated to a fresh position. Gauging is part of the periodic inspection.

44. C — A plugged suction strainer starves the pump, so vapour bubbles form and collapse, which is cavitation and causes noise, foam, and pitting. Overpressure and cylinder leakage have different symptoms, and normal wear is not noisy and foamy. Cleaning the strainer and checking the whole suction line for collapse or air leaks restores supply.

45. D — A crack that extends through the friction surface to the edge weakens the drum and can lead to failure under heat, so the drum must be replaced. Machining cannot remove a through crack, short cracks are still defects, and welding a drum changes its heat treatment. Light surface heat checks are different from through cracks.

46. B — Dark, burnt fluid with friction material points to clutch wear or overheating inside the transmission, so changing fluid alone will not cure it and internal repair is required. The colour with debris is not normal ageing. Reversed cooler lines would cause overheating and a different pattern, and a fluid change leaves the worn clutches.

47. A — A starter drawing more current than specified while turning slowly points to mechanical drag in the starter, such as worn bushings, or in the engine itself. Alternator diodes affect charging, and the compressor clutch does not load the starter during cranking. A plugged oil filter has no effect on cranking current.

48. C — A parked regeneration burns off soot at high exhaust temperature, so the vehicle should stay parked in a safe, clear area with the engine running until the cycle completes. Shutting off mid-cycle leaves soot in the filter, holding the throttle by hand is not part of the procedure, and removing sensors disables protection.

49. A — A failed compressor sends debris and moisture through the system, so the receiver-drier or accumulator is replaced whenever the system is opened, and the system is flushed as needed. A cabin filter, thermostat, and washer pump are unrelated. Replacing the drier protects the new compressor from moisture, acid, and contamination.

50. B — A vehicle leans toward the side with less positive caster, so unequal caster between the sides produces a steady pull. Equal toe, equal camber, and equal tire pressures do not create a one-sided pull. A technician confirms it by measuring caster on each side with an alignment gauge, then adjusting so the two sides match.

51. D — The 12-volt system powers the modules and contactors that close the high-voltage circuit, so when it is low the contactors will not close even though the pack is charged. It does not turn the traction motor, recharge the pack, or cool it. A failed DC-DC converter can leave the 12-volt battery low.

52. C — Oil-soaked lining cannot be restored, so the linings must be replaced after the seal leak is fixed and the drum is cleaned. Cleaning or sanding does not remove oil absorbed into the friction material, and letting it burn off leaves poor braking and a fire risk. Grease on the cam does not correct the contamination.

53. A — In a stall test the engine speed rises against the locked output, and a higher than specified value means the clutches or bands are slipping and not holding. A weak engine would give a lower value, and a converter in good order would match the specification. The axle ratio does not affect the stall speed.

54. B — Heat-shrink connectors with sealant, or solder with adhesive heat shrink, keep moisture out and hold against vibration, and staggering splices avoids a bulky spot that can chafe. Twisted tape and wire nuts fail from vibration and corrosion, and putting every splice together creates a stiff bundle. Sealed connectors keep resistance low for years of road vibration.

55. B — Diesel exhaust fluid should read about 32.5 percent urea, and a reading of 20 percent shows dilution or contamination that will reduce conversion efficiency and can trigger faults. The system should be drained, flushed, and refilled. A frozen sample would not change concentration once thawed, and tank level is unrelated to quality.

56. D — Frame rails are heat-treated and stressed, so a repair follows the manufacturer's instructions on welding and reinforcement. Drilling flange holes and welding without reinforcement can weaken the rail, and waiting for the crack to grow allows it to fail. A documented repair, using the approved reinforcement and weld procedure, keeps the strength of the frame.

57. C — A fuse blows to protect wiring from overload, so a repeated failure means a short or excess load that must be found and repaired. A larger fuse allows more current than the wire can carry and can cause a fire. Taping a holder defeats protection, and changing bulb wattage alone does not diagnose a short.

58. A — Inspection programs require defects to be documented with location and severity, and structural defects at a spring hanger can affect whether the unit may operate. Welding without recording hides the finding, and a verbal warning leaves no record. Treating a gusset crack as minor ignores that cracks propagate under load.

59. D — A slider tandem is held by locking pins that must be fully extended into the holes, and a pin that is not fully engaged can let the tandem move under braking. Caging chambers, fuelling, and lowering the landing gear are not related. A visual check and a gentle push test confirm the lock.

60. D — If the cylinder keeps drifting with its port blocked, the valve is isolated from the test, so fluid is bypassing the piston seal inside the cylinder. A valve leak would stop drifting when the port is blocked, and a pump fault does not allow drift with the pump off. Reseal or replace the cylinder.

61. A — A caged spring brake is held in the released position, so the bolt must be backed out and stored for the parking and emergency brake to work. Leaving it tight disables the brake, a longer bolt serves no purpose, and leaving the hole open allows water and debris into the chamber.

62. B — An automated manual transmission relies on a stored clutch touch point, and a new clutch changes that point, so the calibration procedure is run with the service tool. Bleeding the brakes and resetting the oil interval are unrelated, and there is no free-play pedal to adjust because the clutch is operated by an actuator.

63. C — Crystallized urea deposits on the dosing tip or in the mixing pipe block spray distribution and reduce conversion even with good fluid, so these are inspected next. The fuel filter, turbo actuator, and oil grade have no link to the SCR conversion fault. Cleaning or replacing the affected part restores spray pattern.

64. C — A bulge or exposed cord shows internal damage that can lead to a blowout, so the tire is removed and replaced. A patch cannot repair a sidewall bulge, lower pressure does not reduce the risk and may increase heat, and tape provides no strength. Moving it to another position only moves the hazard.

65. A — When current to a relay coil is interrupted, the collapsing magnetic field creates a high-voltage spike that can damage the module or transistor driving the coil. A diode across the coil gives that current a path and clamps the spike. It does not raise coil voltage, protect contacts from welding, or reverse polarity. Installing it backwards creates a short.

66. D — An EGR cooler uses engine coolant to cool exhaust gas, and an internal crack lets coolant enter the exhaust stream, causing white smoke and unexplained coolant loss. An oil cooler leak would contaminate oil, and a radiator tank or hose leak would show externally. The lack of oil contamination points to the EGR cooler.

67. B — An open reading often comes from a damaged connector, a corroded terminal, or a chafed wire rather than the sensor itself, so the harness is inspected first. The governor, drum diameter, and purge valve have no part in the wheel speed sensor circuit. A visual and electrical check avoids replacing a good sensor.

68. A — The actuators need air at a set pressure, so a low air code leads first to checking supply pressure, the line, and the filter before expensive parts are changed. Replacing the control unit skips diagnosis, and axle lubricant and tire pressure have no connection to the actuator supply. Repairing the restriction restores operation.

69. C — Seat belts are safety devices, and frayed webbing weakens the belt and can fail in a collision, so the assembly is replaced, especially after a collision. Cutting or taping webbing does not restore strength, and lowering the load in the seat does not address the damaged belt. A new assembly restores the rated strength.

70. D — Pulling a vacuum boils off moisture and removes air, both of which damage the system, and a stable vacuum shows there are no leaks. It does not add oil, cool the condenser, or raise pressure. Charging begins only after the vacuum holds. Skipping it leaves moisture that forms acids and ice.

71. B — Side marker lamps on trailers are amber toward the front and red toward the rear so other drivers can judge the direction and length of the vehicle. Red facing forward, white, or amber at the rear

confuse that reading and fail the lighting requirement. The colour and location are checked during inspection.

72. D — Cracks at the stud holes mean the wheel has fatigued, and the wheel must be replaced because it could fail under load. Welding a wheel alters its heat treatment, larger nuts do not fix a cracked wheel, and a short crack still grows under load. Replacement keeps the clamp load on the studs reliable.

73. C — When coolant level, thermostat, and fan clutch are normal and the engine overheats only under high load and heat, restricted airflow through the radiator or charge air cooler is the next suspect. Bugs, debris, or bent fins reduce heat rejection. A heavier oil, fuel filter checks, and injection timing do not address a cooling airflow limit. Cleaning restores heat rejection.

74. A — The trailer emergency relay valve responds to loss of supply line pressure by sending air from the trailer reservoir to the service chambers, applying the brakes. The tractor quick release valve speeds exhaust, the treadle valve controls service application, and the dryer governor manages compressor loading. Only the relay valve gives automatic application.

75. B — A power take-off engages gears or a clutch, so it is engaged at standstill with the clutch pressed and the engine at idle in line with the manufacturer's procedure to prevent damage. Engaging it at speed or at full throttle stresses gear teeth, and removing the driveshaft has no relation to engagement.

76. C — Cylinders must be upright and secured so they cannot fall or roll, and the cap protects the valve from impact. Acetylene cylinders laid flat can release acetone into the valve, and riding loose in a cab is a fire and impact hazard. Removing the cap exposes the valve to damage.

77. D — A plugged condenser cannot reject heat, so pressure rises and cooling capacity falls, and cleaning it restores performance. Adding refrigerant overcharges the system, replacing the compressor is premature, and turning off defrost does not help. Pressures and temperatures are checked after cleaning, since the high-side pressure should fall and the box temperature should recover.

78. A — A hose is designed to flex but not twist, because pressure tries to straighten the reinforcement and a twisted hose can loosen its fittings, rupture, or fail early. Technicians install the hose with a straight layline and no torque in the assembly. Twist does not change pressure, speed, or filtering, and its reinforcement does not rotate harmlessly.

79. B — Headlamp aim is affected by the vehicle's attitude, so the unit is placed on level ground with correct tire pressure and normal load before the adjustment. A running engine, a clean lens, or a disconnected battery do not set the vehicle attitude. Aiming off a tilted vehicle produces a misaimed lamp.

80. C — Tightening in a star pattern in stages draws the wheel flat against the mounting surface, giving even clamp load, while tightening around the circle can cock the wheel and leave nuts loose. It does not intentionally stretch studs, reduce final torque, or make removal easier. Retorquing after a short distance confirms the clamp load.

81. B — Draining the separator treats the symptom only. Water enters through condensation, a leaking cap, or a contaminated supply, and it damages injectors if the source is not found. Ignoring the lamp

invites a repeat, additives cannot cure a continuous source, and the lift pump is not the cause of water in fuel.

82. A — Intermittent faults come from broken strands, loose pins, or chafed insulation, and flexing the harness while watching voltage or data shows where the signal changes. Replacing a harness blind is costly and may not fix it, a larger fuse hides the cause, and waiting for a permanent fault delays the repair.

83. D — Pulling to the right means the right side is braking harder, or the left is braking less, and with equal stroke the likely cause is lining on the left that is contaminated or glazed and gives less friction. The warning switch, governor setting, and compressor wear do not affect side-to-side braking balance.

84. D — The slip yoke allows the shaft to change length as the suspension moves, and a seized yoke binds the driveline, which causes vibration and loads joints and bearings. It does not improve economy, lock the differential, or change shift timing. Cleaning the splines and lubricating through the fitting at each service prevents it.

85. B — Wheels turning a traction motor can generate voltage and spin it beyond its limits, which can damage the motor and inverter, and some drive units have no lubrication when the truck is off. Manufacturers therefore require flatbed transport or lifting the drive wheels. Towing does not recharge the pack, and disconnecting the twelve-volt battery alone does not make it safe.

86. C — Paint, rust, or debris between the mating surfaces compresses under load and relieves clamp force, so the nuts loosen. A correctly set torque wrench, clean faces, and a correct installation on a clean hub all help the joint stay tight. Cleaning every mating surface before installation, and retorquing after a short distance, prevents the problem.

87. A — Glazing and missing ribs mean the belt has overheated or slipped and will not drive the alternator, water pump, or fan reliably, so it is replaced. The technician also checks the tensioner and pulley alignment, because the same fault will damage the new belt. Dressing hides the symptom, over-tightening loads bearings, and trimming ribs leaves a weak belt.

88. A — Low airflow with a working blower points to a restricted path, and a plugged filter or blocked evaporator is the usual cause. Compressor oil, engine oil pressure, and brake pedal travel are not part of the air path. Replacing the filter and cleaning the coil restores flow and cooling capacity.

89. C — Several gauges failing at once together with communication codes points to a common supply or data problem at the cluster or gateway, so power, ground, and the data link connections are checked first. Air filter, tire tread, and coolant level do not affect network communication. A loose pin or blown fuse is common.

90. D — A pedal that sinks under steady pressure with no external fluid loss points to fluid bypassing the master cylinder piston seals internally. A compressor line, a wheel seal, and a hand valve spring belong to air brakes or the drive axle and cannot affect hydraulic pedal travel. The master cylinder is rebuilt or replaced.

91. B — A cracked cushion lets the bearing run off centre, which causes vibration and squeal, so the support bearing and cushion are replaced and the alignment and bracket are checked. Adding grease cannot restore a cracked cushion, tightening bolts leaves a failed part, and running without the cushion allows more vibration and fatigue.

92. D — Mentoring works best when the journeyperson demonstrates, observes the apprentice performing the task, and offers specific, constructive feedback. Taking over removes the learning, rereading a manual alone gives no correction, and public criticism without explanation discourages questions. The apprentice leaves able to repeat the measurement correctly and independently on the next brake job.

93. B — A rear underride guard protects smaller vehicles from sliding under the trailer, so a cracked weld and bent member reduce its strength and make it a defect. It must be repaired or replaced to the required strength before use. Painting or cold straightening hides the crack, and removing the guard breaks the equipment requirement.

94. A — Cold oil is thick and creates a pressure drop across the filter, so the indicator may show red until the fluid warms. A reading that stays red when warm means a plugged filter. Removing the indicator hides the problem, and mixing in thinner oil changes the fluid grade. Checking at temperature avoids needless replacement.

95. C — On an open sensor circuit the module detects an out-of-range signal, sets a diagnostic code, and substitutes a default value, which may cause the fan to run high or affect cold starting. Immediate shutdown is not typical, and the fault is logged rather than silent. Boost is not forced to zero by a temperature sensor fault.

96. C — Duals must be matched in pressure because the higher pressure tire has a larger share of the load, and the lower one runs flexed and hot, so both wear unevenly. The pair does not share load equally with a difference. Differences also increase the chance of a failure, so both tires should be set to the same specified pressure.

97. A — Mirrors give the driver required views, so a cracked and a missing mirror are defects, and the units are replaced to restore the field of view. Having other mirrors does not remove the requirement, and a cosmetic classification or a smaller mirror does not restore the view. The repair is verified from the driver's seat.

98. D — Corrosion adds resistance and leads to dim lamps, intermittent faults, and heat, so the terminals are cleaned or replaced and the source of the water is found and sealed, or the problem returns. Grease alone traps moisture, larger fuses leave wiring unprotected, and a jumper wire bypasses the fault without curing it.

99. B — A slow release at one axle points to a relay or quick release valve with a sticky piston or restricted exhaust at that location, since the other axles release normally. The compressor unloader, the dash trailer supply valve, and the dryer heater affect the whole system or the trailer rather than one axle.

100. D — Rust-coloured dust at the seals shows the needle bearings are dry and wearing, and stiffness confirms binding, so the joint must be replaced. Extra grease cannot rebuild worn needles, ignoring it risks failure, and tightening the retainers does not free a damaged joint. A failed joint can let the driveshaft drop.

101. C — A compression release brake relies on engine oil pressure acting through a solenoid and slave pistons set to a specific lash, so those are checked after electrical power is confirmed. Tire pressure, refrigerant, and clutch free play have no link to brake operation. A lash error or oil pressure fault prevents the valves from opening.

102. B — A smooth pedal movement should give a smooth rise in voltage, and jumps point to a worn track or contact in the sensor, which is replaced. Coolant level, an air filter, and a wheel nut do not affect the pedal sensor signal. Watching the signal on a scan tool or meter during slow movement shows the dropouts.

103. A — A broken main leaf, which carries the axle location and load, makes the suspension unreliable, so the spring is repaired or replaced and the pack and hangers are inspected. Leaving it ignores the loss of axle control, and ride height adjustments or spacers do not repair a broken leaf. The finding is also recorded.

104. B — A fan clutch should disengage when the engine is cold, so a fan roaring at full speed on a cold engine points to a clutch stuck engaged, which wastes power and overcools the engine. A closed thermostat would cause overheating, and a failed cap lowers the boiling point but does not drive the fan.

105. C — An evaporator removes moisture from the air, and the condensate runs out through a drain tube. If the tube is plugged, the water backs up and overflows into the cab, and on a humid day it is clear and odourless. Coolant from a heater core would smell sweet and may be coloured.

106. D — The low-air warning is required to alert the driver below the specified pressure, so a buzzer that stays silent is a defect in the switch, wiring, or buzzer. It is not optional. A governor setting does not control the warning, and chamber leaks do not explain a silent warning device. The circuit is tested and repaired.

107. A — The inter-axle lock forces both drive axles to turn together for traction, so it is engaged before slipping starts and at a low speed, then released when traction returns. Running it locked on dry pavement stresses the driveline and tires, and engaging it while wheels spin can break parts such as gears.

108. C — A speed sensor fault removes the speed signal, so the speedometer reads zero and cruise is disabled, and the sensor, its wiring, and its connector are checked. A governor, a thermostat, and lining thickness are not part of that circuit. The truck still drives because the signal is not needed for basic operation.

109. D — A slow leak lets air bleed from the spring on that side while parked, and the compressor restores pressure when the engine runs. A steering gear, a battery, or an oil filter has no effect on air suspension height. Soap solution on the air springs and fittings finds the leak.

110. B — A reading of 0.20 mm is above the 0.127 mm limit, so the bearings have too much end play and the adjustment needs correcting. Under one millimetre is not the specification. Preload would show no movement or negative clearance, so loosening the nut would make the looseness worse, and zeroing against the drum measures the wrong thing.

111. A — If the supply and service lines are crossed, the supply side does not charge the trailer reservoir and the spring brakes cannot release, or the brakes are applied by service pressure alone, so the brakes drag. Landing gear position, trailer lights, and grease do not affect brake release. Connecting the lines correctly corrects the problem.

112. A — The gauge goes in a test port or a tee, and the system is run so the circuit is stalled briefly to read the relief setting. Reading from a loosened fitting is dangerous, the reservoir drain shows no system pressure, and with the pump off there is none to read. Brief dead-heading avoids heat.

113. B — Worn bearings have extra clearance that leaks oil at low speed when the pump output is small, but pressure recovers when the pump speeds up. A plugged filter or pickup would reduce pressure at all speeds, and oil that is too thick would raise pressure rather than lower it. The pattern points to bearing wear.

114. C — A backup alarm is triggered by a reverse switch at the transmission, so when the alarm tests good the technician checks the switch and its wiring. The A/C switch, fuel sensor, and tone ring are in other circuits. A bad ground or open wire at the switch is a common finding.

115. D — Air leaking from the service chamber vent hole when the brakes are applied shows the diaphragm is ruptured, so the chamber is replaced. A quick release valve exhausts at its own port, and a power spring leak would show at the spring brake side. A plugged dryer does not cause leakage at a chamber vent.

116. C — A plugged breather lets heat build pressure in the axle housing, and the pressure pushes lubricant past the wheel seal even when the level is normal. Coolant level, steering gear wear, and an air spring have no connection to oil at the wheel end. Clearing the breather and replacing the seal is the repair.

117. A — Ride height is set with the system at normal operating pressure on level ground, using the height control valve linkage to match the specified dimension. A drained system does not show the correct height, tire pressure does not set it, and shock bolts have nothing to do with it. Wrong height causes poor ride and driveline angle problems.

118. B — A discoloured pin suggests heat from poor contact, which can fail and become a fire or shock hazard, so the port is inspected and repaired before charging again. Charging at a higher current makes it worse, and a jumper across the communication pins defeats the safety handshake between the truck and charger.

119. D — A fully red indicator shows the restriction limit has been reached, so the element is replaced or serviced and the indicator is reset. Ignoring it starves the engine, tapping the element does not restore

capacity and can damage it, and running without a filter lets abrasive dust wear the cylinders and turbocharger.

120. A — An incandescent test light draws far more current than a meter, which can overload and damage the sensitive circuits of a control module, so a high-impedance digital meter is preferred. A test light does indicate 24 volts and does not reset codes. Using a digital meter protects the electronics during testing.

121. D — A low level in the tilt circuit points to a leak, so the technician finds and corrects it before topping up with the specified fluid. Adding the wrong oil can damage seals, removing the safety prop creates a crushing risk, and running the cab on a cable is unsafe. The prop is used whenever a cab is raised for work.

122. B — Chambers on an axle must be the same type and size so braking force stays balanced, and they are replaced in pairs because the older one is near the end of its life. Mixing sizes causes unequal force and pulling, and installing an unmatched chamber that merely fits does not guarantee correct brake output.

123. C — A hub much hotter than the others shows extra friction, which usually comes from a bearing adjusted too tight, poor lubrication, or a failing bearing, so that wheel end is inspected right away. Normal tire temperature differences are small, and a fuel filter or clutch disc does not heat a hub.

124. B — An oil-wet housing and weak damping show the seal has failed and the fluid is leaving, so the shock is replaced, and the opposite one on the axle is usually changed as well so damping stays balanced. Most shocks cannot be topped up, driving without one affects control, and paint does not stop a leak.

125. C — A turbo shaft often fails because the oil supply is restricted or the drain line is plugged, and the replacement will fail the same way if the cause remains. Checking both lines protects the new unit. Thinner oil, coolant flushing, and injection timing do not address the oil supply and drain fault.

126. D — Refrigerants harm the ozone layer or add to climate impact, so regulations require recovery with approved equipment by trained and certified personnel. Smell, charge acceptance, and compressor wear are not the reasons. Technicians are required to follow provincial rules when opening and servicing systems, and recovered refrigerant is reclaimed or disposed of properly.

127. A — When only one speed works, the part that creates the lower speeds, such as a resistor pack or control module, is the likely failure. The washer pump only moves fluid, the vehicle speed sensor is unrelated, and engine software does not control wiper speeds. Testing the resistor and the switch confirms the fault.

128. C — A film of clean oil lets the gasket slide and seat evenly instead of binding, twisting, or tearing, and the filter spins off easily at the next service. It does not fill the element and does not raise clamping force. Bypass flow is controlled by the bypass valve, not the gasket film.

129. B — Both axles scrubbing on one side points to the axles being out of square with the trailer centreline, which drags the tires as they roll. A spare tire, a tractor battery, and a lamp breather do not affect tire tracking. The tandem is aligned and the cause, such as a bent hanger, is repaired.

130. D — Case drain flow measures leakage inside the motor, and flow above the limit means internal wear lets oil bypass, so the motor loses speed and torque. An overfilled reservoir, a stuck relief valve, and a new filter element do not cause high case drain flow. The motor is repaired or replaced.

131. A — The warning lamp is expected to light briefly at key-on and then go out, and a lamp that never lights could hide a real fault, so the bulb or circuit is repaired. A lamp that stays dark is not proof of a healthy system, and the governor does not control the lamp. It is a recordable defect.

132. A — A retarder adds braking torque to the drive wheels, and on a slippery surface that can lock them, so the module disables it when the antilock system is active. Cold fluid would reduce effect but not set a deliberate shutdown, a broken shaft would stop the truck from moving, and fuel level is unrelated.

133. C — Tire pressure rises as the tire heats during operation, so the cold reading is the reference for the specified pressure. Checking cold with an accurate gauge gives a reliable comparison. Bleeding hot tires down leaves them underinflated once cooled, and inflating every tire to the sidewall maximum ignores load and causes uneven wear and a harsh ride.

134. D — Silicon in oil usually comes from dirt, and when it appears alongside rising aluminum and iron wear metals, abrasive dust is entering the engine through a loose intake joint, torn hose, or poorly sealed air filter. Coolant leaks show sodium or glycol, and fuel dilution shows as thin, fuel-scented oil. Thin oil would not add silicon.

135. B — A master disconnect in the off position isolates the batteries from the vehicle, so closing it restores power before checking voltage and the dash. Jumping the solenoid skips the diagnosis, removing batteries is unnecessary, and replacing the ignition switch ignores the simple cause. Check the obvious condition first, then test.