

PRACTICE EXAM 19: 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 truck's alternator makes 14.2 volts at idle, yet the batteries are dead each morning after sitting overnight. What test should be done next?
 - A. A cold cranking test on the starter motor with the batteries fully charged
 - B. A compression test on all cylinders with the engine at operating temperature
 - C. A parasitic draw test with the key off and the vehicle fully asleep
 - D. A leakdown test on the air brake system with the engine shut down

2. A highway tractor has a loud roaring fan at cold start-up that does not quiet when the engine is cold. The fan runs at full speed continuously. What is the most likely cause?
 - A. A water pump with a worn impeller that circulates too little coolant
 - B. A viscous fan clutch that has failed in the engaged condition
 - C. A thermostat that is stuck open and passes coolant to the radiator
 - D. A radiator cap whose pressure valve opens at too low a pressure

3. A truck wanders on the highway and needs constant steering correction. The steering gear shows no play when checked on the bench. What should be checked next?
 - A. Steering gear mounting bolts and the frame bracket for looseness
 - B. The air dryer cartridge condition and the purge valve operation

- C. The turbocharger boost leak at the charge air cooler hoses
- D. The cab mounting bushings at the rear of the sleeper

4. A tractor-trailer pulls to the right under moderate brake application but not under hard braking. Pushrod stroke is even on all chambers. What is the most likely cause?

- A. Lining or drum condition on the right side giving unequal friction
- B. A weak governor cut-in setting that lets the compressor build pressure too slowly
- C. Too much free play in the steering wheel and in the drag link joints
- D. A leaking air dryer purge valve at the supply reservoir inlet port

5. A truck with a hydraulic clutch will not release fully. The pedal slowly sinks toward the floor when held and no fluid leaks are visible outside. What is the most likely cause?

- A. A worn pilot bearing in the flywheel and a noisy input shaft
- B. An internal leak in the clutch master or slave cylinder
- C. A glazed clutch disc surface from long periods of slipping
- D. A loose clutch brake on the transmission input shaft

6. A technician finds a hairline crack in the weld at the base of a pedestal jack stand during the morning inspection. What should be done with the stand?

- A. Grind the crack out and use it for lighter vehicles only
- B. Use it only under axles that carry no drive load
- C. Tag it out of service and remove it from the shop floor
- D. Weld over the crack and return it to the rack right away

7. A trailer with air suspension is parked overnight and the frame is sitting on its bump stops by morning. Tractor air supply was disconnected. What is the most likely cause?

- A. The landing gear gearbox is low on lubricant after a long week

- B. The trailer tires have equalized to the same cold inflation pressure
- C. The kingpin has shifted forward in the plate after the uncoupling
- D. A slow air leak in an air spring, fitting or height control valve

8. A hydraulic hose on a loader shows a bulge in the cover about 100 mm from the end fitting, though no fluid is leaking. What should be done?

- A. Replace the hose assembly, since the bulge shows internal reinforcement failure
- B. Wrap the bulge with tape and monitor it at the next service interval
- C. Tighten the end fitting until the bulge flattens and the cover relaxes
- D. Reduce the system relief pressure slightly and keep the hose in service

9. A 24 volt system uses two 12 volt batteries wired in series. One battery tests weak. What is the best repair practice?

- A. Replace only the weak battery with any available 12 volt unit from the shop shelf
- B. Replace both batteries with a matched pair, unless the stronger one is nearly new
- C. Wire a third battery in parallel to bridge the weak one and share the load
- D. Charge the weak battery overnight and leave the rest of the system unchanged

10. Oil is being pushed past the dipstick tube and the front crankshaft seal on a high-mileage diesel. The crankcase ventilation filter is heavily saturated. What is the best first step?

- A. Replace the front crankshaft seal and the dipstick tube O-ring
- B. Install a thicker engine oil to reduce the amount of oil leakage
- C. Remove the breather hose to let the crankcase vent to the air
- D. Replace the crankcase ventilation filter and recheck crankcase pressure

11. A driver reports a sweet smell and fogging on the inside of the windshield when the heater runs. The coolant level keeps dropping. What is the likely cause?

- A. A leaking A/C compressor shaft seal spilling refrigerant oil
- B. A blocked cab air filter that is trapping moisture in the ducts
- C. A leaking heater core allowing coolant vapour into the cab air
- D. A worn blower motor that is overheating and burning its insulation

12. A truck steers normally at highway speed but is very heavy when turning at a standstill. The fluid level and hoses are good. What test should come first?

- A. Measure power steering pump relief pressure with a gauge and a shut-off valve
- B. Replace the steering gear sector shaft and then recheck the steering effort
- C. Check the wheel nut torque on the steer axle wheels and the hub seals
- D. Bleed the clutch hydraulic system and then test the pedal travel again

13. During a brake balance check on a roller dynamometer, one drive-axle wheel produces about half the retarding force of its mate. Chamber air pressure at both is equal. What should be inspected first?

- A. The compressor discharge line for carbon build-up that restricts the flow of air
- B. The steering gear for a worn sector shaft bushing and excessive free play
- C. The slack adjuster and cam shaft for binding or the lining for contamination
- D. The alternator drive belt for correct tension and for glazed ribs

14. A clutch slips under load and the technician finds oil on the face of the disc and flywheel. What must be done before fitting the new clutch?

- A. Sand the new disc surface so that it absorbs any oil on the flywheel
- B. Use a thicker transmission lubricant to slow the oil leak down
- C. Fit a pressure plate with a stronger spring and keep the old flywheel
- D. Find and repair the oil leak source, such as the rear main seal

15. A tilt cab will not latch fully after being lowered, and the cab shows a small gap at one side. What should be checked first?

- A. The air compressor intake filter and the compressor discharge line
- B. The latch hooks and striker pins for wear or damage
- C. The clutch disc thickness and the release bearing travel
- D. The brake chamber pushrod length and the slack adjuster arm

16. A starter solenoid clicks, the headlights stay bright, and the engine does not crank. Battery voltage is 12.6 volts. What is the best next test?

- A. Measure the specific gravity of the engine coolant with a hydrometer
- B. Check the wheel speed sensor resistance at the axle connector
- C. Measure voltage drop across the solenoid contacts while attempting to crank
- D. Check the engine fan clutch for engagement at operating temperature

17. A technician inspects a removed wet cylinder liner and finds clusters of small pits on the outside surface facing the coolant. Which condition most likely caused this damage?

- A. Scuffing caused by the piston rings running without enough oil
- B. Corrosion from using a coolant that is too rich in glycol
- C. Heat damage caused by running the thermostat in the open position
- D. Cavitation erosion caused by low additive levels in the coolant

18. A technician must work on an electric truck's high-voltage cables. What is the first step in the safe procedure?

- A. Put on insulated boots and start the cable work immediately
- B. Switch off, remove the service disconnect and wait before testing for zero voltage
- C. Cut the orange cable to check whether it still has power in it
- D. Wash the battery pack with water to cool it before working

19. Where should the steering wheel free play be checked for a proper inspection?

- A. With the engine running, the wheels straight and the tires on the ground
- B. With the engine off and the front axle raised on stands for access
- C. With the wheels turned fully against the steering stops and held there
- D. With the steering wheel removed from the column and the shaft exposed

20. After a brake reline, a driver reports that the brake pedal feels normal but the truck takes longer to stop than before. The pushrod stroke was set at the maximum allowed. What most likely explains this?

- A. Brake lining that is too thick and creates more drag at the drums
- B. Air tanks that hold too much pressure for the compressor to supply
- C. A steer axle with too much positive caster for the vehicle load
- D. Brakes adjusted too loosely, so the chambers run out of stroke early

21. A range-shift manual transmission will not shift from low range into high range even though the lever moves freely. Air pressure at the supply gauge is normal. What should be checked first?

- A. The tire pressure on the steer axle and on the trailer duals
- B. The condition of the brake drums and the lining on the rear axle
- C. Air supply to the range cylinder through the filter regulator and valve
- D. The engine coolant level and the condition of the radiator cap

22. A technician bench tests a relay coil and finds infinite resistance between terminals 85 and 86. What does this show?

- A. The coil winding is open and the relay needs replacement
- B. The contacts are welded closed and the relay is stuck energized
- C. The relay is working normally and the coil is within the range
- D. The diode in the coil is shorted and passing current both ways

23. A turbocharged engine shows oil on the inside of the compressor outlet pipe and the charge air cooler, while the oil level drops slowly. The compressor wheel spins freely. What should be checked first?

- A. Fuel injector nozzle spray patterns on the test bench
- B. Turbocharger oil drain restriction and crankcase pressure
- C. Radiator fan clutch engagement at highway speeds
- D. The DPF differential pressure at idle and at high rpm

24. A technician spills a solvent and needs first aid information for skin contact. Which part of the safety data sheet should be consulted first?

- A. The disposal considerations section, which describes how to get rid of waste
- B. The first-aid measures section, which describes treatment after skin or eye contact
- C. The regulatory information section, which lists transport and labelling rules
- D. The manufacturer contact section, which gives the supplier's mailing address

25. A trailer's brakes drag after the parking brake knob is pushed in. The system has full air pressure. What should be checked first?

- A. Whether the spring brakes release fully, and the relay valve operation
- B. The tire tread depth on the trailer and the tire inflation pressure
- C. The engine thermostat on the tractor and the radiator cap pressure
- D. The cab air filter condition and the condition of the blower motor

26. A hoist cylinder slowly lowers when the control valve is in neutral and the body is raised. What is the likely cause?

- A. Low air pressure in the brake system supply tanks
- B. A loose wheel nut on the dump body axle
- C. Internal leakage past the piston seals or a holding valve
- D. A weak alternator on the engine and a low battery

27. A steer tire shows a feathered pattern across the tread, smooth in one direction and sharp in the other. What does this indicate?

- A. Low engine oil pressure at the main bearings during idle
- B. Overinflation of the tire well above the cold pressure rating
- C. A slack adjuster that is out of adjustment on the steer brake
- D. Incorrect toe setting scrubbing the tire sideways

28. A trailer ABS lamp stays on when connected to a tractor. Wheel sensors test good. What should the technician measure first?

- A. Voltage and ground at the ABS power pin of the seven-way connector
- B. The trailer kingpin height above the ground when the trailer is coupled
- C. The dock bumper wear on the rear frame of the trailer
- D. The reefer unit fuel level and the battery charge on the unit

29. A technician applies the service brakes with the engine off and sees system pressure fall to zero in about three minutes with no audible leaks at the chambers. Where is the best place to listen next?

- A. At the steering gear box for hydraulic fluid hissing from the pressure fittings
- B. At the brake valve and relay valve exhaust ports for continuous air escaping
- C. At the radiator cap for escaping steam and coolant when the engine is warm
- D. At the clutch brake in the bell housing for a squealing noise when applied

30. A splitter-equipped manual transmission stays in the lower split and does not respond to the splitter button. The vehicle's air pressure is good. What is the best first check?

- A. Clutch disc thickness at the flywheel and the release bearing travel
- B. Rear axle gear oil viscosity and the level at the fill plug
- C. Fifth wheel lock bar adjustment and the top plate lubrication
- D. Splitter air supply, solenoid or valve operation and the air lines

31. During a cylinder cutout test, one cylinder produces no change in engine speed or fuel quantity when it is disabled. What does this indicate?

- A. That cylinder is working harder than all of the other cylinders in the engine at idle
- B. The ECM has aborted the test because the coolant is too cold for the test to continue
- C. That cylinder is contributing little power, so its injector, valves or compression need testing
- D. The turbocharger is overspeeding and masking the load change from the disabled cylinder

32. A cab air conditioning system blows slightly cool air and the sight glass shows bubbles at normal ambient temperature. What does this suggest?

- A. Too much engine oil in the crankcase of the engine
- B. A fully charged system that is working correctly in the heat
- C. A low refrigerant charge from a leak
- D. A restricted cab air filter on the heating side of the case

33. When diagnosing a CAN network fault, a technician unplugs control modules one at a time and the fault clears when one module is disconnected. What does this suggest?

- A. The CAN terminating resistors are working correctly on both bus ends
- B. The truck battery voltage is too high for the modules on the bus
- C. The data link cable is acting as an antenna and picking up noise
- D. That module or its connector is loading or shorting the network

34. Cupped wear patterns appear around the circumference of a steer tire. Which causes should be checked?

- A. An overfilled coolant system with the level above the full mark
- B. Worn shocks, loose wheel bearings or an out-of-balance condition
- C. A leaking fuel injector that is dripping into the cylinder head
- D. A weak starter motor that is slow to crank in cold weather

35. An oil analysis report shows high sodium and potassium with a trace of glycol and a drop in viscosity. What does this combination point to?

- A. Coolant leaking into the oil, such as from an oil cooler or head gasket
- B. Normal wear metals from the first few hundred hours of operation after a rebuild
- C. Dust entering the engine through a torn air filter housing or loose intake clamp
- D. Fuel injector leakage diluting the engine oil with unburned diesel fuel

36. A glad-hand connected to a trailer leaks air from the seal when the trailer is coupled. What should be done?

- A. Tighten the air line with locking pliers to compress the seal against the face
- B. Replace the damaged glad-hand grommet and recheck for leaks with soapy water
- C. Apply sealant tape to the glad-hand faces before coupling the two halves
- D. Switch the service and emergency lines to see if the leak moves with them

37. A transmission magnetic drain plug has a fine grey paste on it, with no metal chips. What does this indicate?

- A. Normal wear, so the lubricant can be changed on schedule
- B. A broken gear tooth that needs immediate replacement of the gear set
- C. Contamination from a failed brake chamber on the rear axle
- D. A cracked bell housing on the engine and flywheel area

38. A set of LED marker lamps flickers and dims when the brakes are applied. The bulbs are good. What is the likely cause?

- A. Low engine oil pressure at the main bearings during idle
- B. A worn clutch disc at the flywheel in the transmission bell housing
- C. A weak steering pump that is cavitating with air in the fluid
- D. A poor shared ground connection or corroded lamp ground

39. Water drips from the headliner near the door after a rain. The door seal looks intact. What is a reasonable next step?

- A. Drill extra holes in the roof panel so that the water can run out
- B. Replace the engine thermostat and the water pump gasket
- C. Check the drain holes and the seal contact line with a water test
- D. Add extra insulation to the cab floor and the back wall

40. A steer tire shows heavy wear on the inside shoulder only. The tire pressure is correct. What alignment condition is most likely?

- A. Excess positive caster from a shifted axle on the spring seat
- B. Excess negative camber, possibly from a worn or bent axle part
- C. Too much toe-out only, with the camber and caster within limits
- D. Excess steering axis inclination from a bent kingpin and knuckle

41. A diesel engine produces a puff of blue smoke only at start-up after sitting overnight, then runs clean. Oil consumption is slightly high. What is the most likely cause?

- A. Leaking injectors that flood the cylinders with fuel overnight
- B. A restricted air filter that starves the engine of combustion air
- C. A thermostat stuck open that keeps coolant temperature too low
- D. Worn valve stem seals that let oil seep into the cylinders while it sits

42. A technician measures wheel hub end play with a dial indicator. Where should the indicator plunger be positioned?

- A. Square to the tire tread, with the indicator base clamped to the outside of the brake drum
- B. On the outside of the rim flange with the base resting on the shop floor beside the wheel
- C. Parallel to the axle centreline against the hub end, with the base fixed to the spindle
- D. Across the wheel studs with the base fixed to the spring brake chamber bracket

43. A trailer's clearance lamps work but the stop lamps do not light when the tractor brakes are applied. What is the best first test?

- A. Check the stop lamp pin voltage at the seven-way connector
- B. Test the trailer kingpin for wear and check the plate height
- C. Replace the landing gear crank and lubricate the gearbox
- D. Check the reefer fuel level and the battery on the refrigeration unit

44. A technician adjusts a system relief valve. How should the setting be verified?

- A. By listening for the pump to whine at maximum speed and load
- B. By tightening the adjusting screw until it stops against the stop
- C. With a pressure gauge in the circuit, run against the relief setting
- D. By counting the number of turns from the previous setting made

45. A truck's compressor builds pressure normally but the system pressure drops quickly after the engine is shut off with the brakes released. The air dryer purge valve is the only component that leaks audibly. What should the technician do?

- A. Increase the governor cut-out setting by about 100 kPa to cover the loss
- B. Fit a larger compressor to build pressure faster than the leak can lose it
- C. Drain the wet tank daily and ignore the dryer purge valve leak
- D. Replace or repair the purge valve or its seat, then recheck the leakdown rate

46. An automatic transmission pan shows dark, burnt-smelling fluid and friction material on the magnet. What does this suggest?

- A. Clutch pack wear from slipping, so the transmission needs overhaul
- B. Normal operation for a vehicle that was driven a short distance
- C. A leaking brake booster that has contaminated the fluid with oil
- D. A faulty air conditioning compressor that overheated the transmission

47. After a wiring repair, three unrelated sensors set low-voltage codes at the same time. What common fault is most likely?

- A. Low engine coolant level at the radiator and the surge tank
- B. A short to ground on the shared five volt reference circuit
- C. Worn brake linings on the steer axle drums and shoes
- D. A leaking fuel tank cap on the filler neck of the tank

48. A compression-release engine brake gives weak retarding on one bank of cylinders only. Codes show no electrical faults. What should be inspected first?

- A. The power steering pump pressure relief valve setting under full load
- B. The clutch pedal free play at the cab linkage and release fork
- C. The brake lash setting and slave piston adjustment on the weak cylinders
- D. The transmission output shaft speed sensor air gap at the tone wheel

49. An A/C compressor clutch will not engage. The system pressure is zero. What should the technician do first?

- A. Bypass the low-pressure switch and run the compressor without charge
- B. Repair the leak, then evacuate and recharge to the specified amount
- C. Add oil to the compressor with no refrigerant in the system
- D. Jump the clutch wire permanently so that the compressor always runs

50. A tire shows wear on both shoulders with less wear in the centre. What is the probable cause?

- A. Chronic overinflation of the tire for many months of operation
- B. A bent steering arm on the knuckle at the steer axle
- C. Too much caster on the front axle after a spring change
- D. Chronic underinflation that lets the tire flex at the shoulders

51. A hybrid truck sets an isolation fault code and the insulation resistance reading to chassis ground is far below the specification. What is the next step?

- A. Isolate sections of the high-voltage system to find the leaking component
- B. Clear the code and drive the vehicle to see if it returns
- C. Replace the 12 volt battery and the low-voltage fuses
- D. Bypass the isolation monitor so that the truck can be driven

52. Water drains from an air tank during a routine check and the oil content is high. The compressor discharge line is carbon-coated. What is the likely cause?

- A. A governor that cuts in at too high a pressure and runs the compressor longer
- B. A foot valve with an incorrect return spring that holds air in the system
- C. Excess oil passing through the compressor, so the compressor and dryer need service
- D. A tractor protection valve that is closing too late in the pressure drop

53. An automatic transmission with a lock-up torque converter shudders at about 55 kilometres per hour when the converter locks, and the fluid is old. What is a sensible first step?

- A. Replace the rear axle ring gear right away to stop the vibration
- B. Increase the engine idle speed to change the lock-up point
- C. Disable the tire pressure monitor so its signal stops the shudder
- D. Check the fluid condition and level and do the specified fluid service first

54. To test a magnetic wheel speed sensor, a technician spins the wheel by hand and measures with a multimeter. Which reading shows a working sensor?

- A. An AC voltage that rises as the wheel turns faster
- B. A steady DC voltage that does not change with wheel rotation
- C. A reading of zero ohms across the coil of the sensor winding
- D. An open circuit reading while the wheel is stopped and not turning

55. A truck makes low boost and black smoke under load, but the air filter restriction reading is normal and no codes are stored. What is the most likely cause?

- A. A thermostat that opens too early in cold weather and cools the engine too much
- B. A leak in the charge air piping or a loose clamp after the turbocharger
- C. A clogged cab air filter on the heating and ventilation system of the truck
- D. A worn alternator belt that slips at low engine speed and under electrical load

56. A tandem drive tractor leaves tire wear on the rear axle only and the trailer tracks slightly to one side. What should be measured?

- A. The compressor discharge temperature at the discharge line fitting
- B. The thrust angle and axle alignment of the tandem
- C. The clutch pedal free travel at the cab and the release fork
- D. The battery specific gravity in each cell of the batteries

57. A technician finds the alternator output at 15.6 volts and the battery is hot and gassing. What is the best conclusion?

- A. The battery has a lower capacity than expected for this truck model
- B. The alternator belt is slipping on the pulley under electrical load
- C. The starter drive is dragging on the flywheel ring gear teeth
- D. The voltage regulator is overcharging and the charging system needs repair

58. A web sling has a cut that reaches about one fifth of its width at the edge. The load is only half of the sling's rated capacity. What is the correct action?

- A. Use it with the cut turned toward the inside of the lift and avoid sharp edges
- B. Sew the cut closed with heavy thread and continue using it at a reduced load
- C. Remove the sling from service because the cut reduces strength by an unknown amount
- D. Keep using it since the load is under half of the rated capacity of the sling

59. A trailer ABS controller sets a code for a wheel speed sensor on one axle. The wire insulation is cracked near the axle. What is the correct fix?

- A. Repair or replace the damaged harness with the proper connector and seals
- B. Wrap the cracked wire with tape and clear the code from the controller
- C. Move the sensor to a different axle and leave the wire in place
- D. Remove the ABS fuse from the trailer so the lamp stays off

60. A hydraulic fluid sample shows a particle count above the target cleanliness code. What is the correct action?

- A. Add a bottle of fluid additive to the reservoir and recheck later
- B. Increase the system relief pressure to push the particles through
- C. Replace the pump without checking the fluid cleanliness first
- D. Filter or replace the fluid and filters and find the contamination source

61. A spring brake chamber will not release even with full system pressure. The technician needs to move the vehicle a short distance in the shop. Which method is correct?

- A. Cut the parking brake hose and let the spring extend until it is fully released
- B. Remove the entire chamber clamp with a pry bar to free the brake
- C. Cage the spring brake using the manufacturer's caging tool and repair the chamber afterward
- D. Disconnect the service line so the spring can relax and release the brake

62. A technician checks the lubricant in a manual transmission with the truck parked on a steep driveway. The oil appears to be at the fill hole. What is the correct conclusion?

- A. The reading is unreliable, so recheck with the truck on level ground
- B. The level is correct, because the oil always settles at the fill hole
- C. The transmission is overfilled, so oil should be drained until it stops running
- D. The reading is only valid when the engine is running at high idle

63. A DPF with a high differential pressure fails to regenerate. Before replacing it, what should the technician investigate?

- A. The tire pressures on the drive axles and the trailer
- B. The cause of the excess soot, such as a faulty injector
- C. The air dryer purge cycle in the brake circuit
- D. The torque value of the wheel nuts on the steer axle

64. A technician finds a crack in the top flange of a frame rail beside a crossmember. Which repair follows accepted practice?

- A. Weld across the flange and grind the weld flush with the rail surface
- B. Follow the chassis manufacturer's repair procedure, normally a reinforcing plate with no welds across the flange
- C. Drill a hole through the flange at the crack end and run a bolt in it
- D. Fill the crack with body filler and paint over the area to seal it

65. After the vehicle sleeps for 30 minutes, a draw test shows 0.8 amp. What is the best way to find the circuit responsible?

- A. Replace the batteries with higher capacity units and retest the next day
- B. Disconnect the alternator and drive the vehicle for several days
- C. Pull fuses one at a time while watching the ammeter
- D. Wire an additional charger to the batteries on a permanent basis

66. A refractometer reading shows diesel exhaust fluid at 20 percent urea in a tank that should hold 32.5 percent. What is the correct action?

- A. Drain and flush the system, then refill with fresh ISO 22241 fluid
- B. Add more DEF to the tank to bring the average up to specification
- C. Add a small amount of coolant to prevent the fluid from freezing
- D. Leave the fluid alone because the SCR can work at any strength

67. A drum brake shows a crack that extends from a bolt hole toward the friction surface edge. What action is required?

- A. Weld the crack and machine the drum to size so it can be used again
- B. Fill the crack with epoxy filler and reinstall the drum on the hub
- C. Drill a stop hole at the end of the crack and keep using the drum
- D. Replace the drum, because cracks that reach the friction surface are not repairable

68. A truck with an automated manual transmission sets a fault for the shift actuator position and will not engage gears. The supply air is wet at the valve. What is the best next step?

- A. Inspect the air supply and dryer, then repair the actuator
- B. Ignore the code until the next scheduled service interval comes due
- C. Replace the clutch disc immediately and clear the stored fault codes
- D. Reduce the tire inflation pressure on the drive axles and retest

69. After a windshield replacement, the customer is told not to drive for a minimum time. What is the reason?

- A. The glass needs to be heated slowly and evenly to reach full strength
- B. The wipers need time to settle on the new glass surface before use
- C. The urethane needs time to cure so it can hold the glass in a crash
- D. The rubber seal needs to be painted and dried before the glass is used

70. An evaporator core freezes and blocks the airflow after the truck runs for a short time. The charge is correct. What is a likely cause?

- A. Too much coolant in the cooling system after a recent service
- B. A leaking steering gear seal on the pitman arm shaft
- C. A cracked brake drum on the rear axle of the truck
- D. Low airflow from a dirty cab filter or a weak blower

71. The headlights dim whenever the right turn signal is switched on. Bulbs and the alternator are fine. What is the most probable cause?

- A. A cracked brake drum on the rear axle of the truck
- B. High resistance in a shared ground, like a loose frame connection
- C. A loose clutch linkage at the pedal and the release fork
- D. A worn drive axle pinion bearing at the carrier housing

72. A truck with air suspension leans to one side. The leveling valve linkage is intact. What should the technician check next?

- A. The engine fan clutch for engagement when the engine is hot
- B. The turbo wastegate for sticking when the engine is under boost
- C. The low-side air spring and the height control valve
- D. The clutch pressure plate for heat damage and uneven wear

73. An engine idles roughly and stalls at low rpm. A scan tool shows the EGR valve position stays open when commanded closed. What is the most likely cause?

- A. A failed starter solenoid that holds the pinion out after the engine starts
- B. A stuck-closed turbocharger wastegate on the intake side of the engine
- C. A cracked wheel speed sensor ring on the front axle of the truck
- D. A sticking EGR valve that is held open by carbon build-up

74. A medium truck with hydraulic brakes has a spongy brake pedal after a caliper replacement. The fluid level is full. What is the correct next step?

- A. Adjust the pedal height stop to shorten the free pedal travel
- B. Bleed the brake system in the specified sequence to remove trapped air
- C. Replace the brake pads on both axles with thicker friction material
- D. Top up the master cylinder reservoir with a different brake fluid type

75. A driveline vibration is felt at 90 kilometres per hour regardless of engine rpm in a lower gear. It disappears if the truck is coasted in neutral at the same speed. What does this suggest?

- A. It is tied to engine or driveline torque, not to wheel balance
- B. It is caused by an unbalanced steer tire at that road speed
- C. It comes from an out-of-round brake drum on the rear axle
- D. It comes from a worn fifth wheel top plate and jaws

76. After raising a tractor's rear axle with a floor jack, what must be done before the technician goes under the vehicle?

- A. Pump the jack to its full height so the lift is as rigid and stable as possible
- B. Place a wooden block between the jack saddle and the axle housing and leave the jack loaded
- C. Place stands under the axle seats or frame points, lower onto them and chock the wheels
- D. Set the parking brake and rely on the jack's internal check valve to hold the axle

77. A swing door on a van trailer will not stay latched, and the locking rod is bent. What should be done?

- A. Tie the door closed with rope and a ratchet strap for the trip
- B. Remove the door seal to allow more movement of the door panel
- C. Replace the trailer tires and rebalance the wheels on the axle
- D. Straighten or replace the rod and adjust the latch cam and retainer

78. A new hydraulic hose is installed and the technician allows it to twist as the fitting is tightened. What is the potential result?

- A. A twisted hose weakens and can fail early
- B. The hose becomes stronger under pressure when it is twisted
- C. The fluid flows faster through the hose when it is twisted
- D. The fitting threads self-lock tightly when the hose is twisted

79. A wiper motor runs slowly on high speed but the voltage at its power connector is normal. What should be checked next?

- A. The air dryer cartridge condition and the purge cycle on the dryer
- B. The motor ground connection and the current draw
- C. The turbocharger boost pressure at the intake manifold port
- D. The tire tread depth on the drive axle and the steer axle

80. When setting ride height on an air suspension, what condition should be met before adjusting the height control valve linkage?

- A. The air tanks drained and the suspension fully deflated to the bump stops
- B. The system fully charged, with the vehicle on level ground
- C. The vehicle jacked up with the wheels off the ground and axles hanging
- D. The engine running at high idle with the brakes applied to hold it

81. A clear section of fuel line shows foam and bubbles when the engine runs. The lift pump is working. Where is the leak most likely located?

- A. On the suction side between the tank and the lift pump
- B. On the high-pressure rail return line that runs back to the tank
- C. At the turbocharger oil feed fitting on top of the center section
- D. At the fuel injector nozzle tips inside the combustion chamber

82. Which wiring repair method is preferred for a splice in an exposed under-frame harness?

- A. Twisting the wires together and wrapping the joint with electrical tape
- B. A solder joint left bare with no insulation or strain relief
- C. A crimped butt connector with adhesive-lined heat shrink
- D. A wire nut taped to the frame rail with a cable tie

83. On a truck with ABS, one wheel speed sensor reads erratically only at high speed. The tone ring teeth are clean and the sensor is secure. What should be measured next?

- A. The brake chamber pushrod stroke at the affected wheel end
- B. The compressor governor cut-in pressure on the supply circuit
- C. The drag link end play at the steering arm ball joints
- D. The sensor air gap and the sensor's output waveform or resistance

84. A driveshaft with a centre support bearing makes a rumble that changes with road speed. The support rubber is cracked and the bearing is rough. What is the correct repair?

- A. Pack the bearing with extra grease and continue to operate the truck
- B. Remove the support and leave the shaft unsupported between the joints
- C. Replace the centre bearing and rubber mount, then check shaft alignment
- D. Tighten the shaft with a larger clamp around the support housing

85. An electric truck charges slowly on a DC fast charger and the pack is hot. What is the likely explanation?

- A. The battery management is limiting charge rate to protect the pack
- B. The charger plug is too clean for the contacts to make contact
- C. The truck's tires are overinflated and add rolling resistance
- D. The air brake system is leaking air at the trailer connection

86. A leaf spring pack has a broken main leaf and a noticeable sag on one side. What is the best practice?

- A. Replace only the broken leaf on one side and leave the rest in place
- B. Replace the springs on both sides of the axle to keep height even
- C. Add a block under the spring seat to raise the sagging side upward
- D. Weld the broken leaf back together and keep using the spring pack

87. A truck loses power under load. A gauge shows low fuel pressure at the gallery that gets worse as the load increases, and the tank is full. What is the best test next?

- A. Check the alternator output at the battery terminals under full electrical load
- B. Check the clutch release bearing for noise with the pedal depressed
- C. Check the brake chamber pushrod travel with the service brakes fully applied
- D. Measure the pressure drop across the fuel filters to check for restriction

88. Before opening the refrigerant circuit on a truck A/C system, what is required in Canada?

- A. Vent the refrigerant outdoors to avoid contaminating the system
- B. Recover the refrigerant with approved equipment and follow provincial certification rules
- C. Heat the lines with a torch to boil off the refrigerant first
- D. Drain the refrigerant into a bucket in the cab for disposal

89. A circuit breaker for the cab accessory circuit trips repeatedly. What should the technician do?

- A. Replace it with a breaker of twice the rating to stop the nuisance trips
- B. Wrap the breaker in tape so it cannot reset or trip again
- C. Disconnect the ground on the circuit so that no current can flow
- D. Find the overload or short causing the trip rather than raising the rating

90. An ABS warning lamp stays on after start-up and a code points to the modulator valve solenoid circuit. What is the first test?

- A. Check connector pins, wiring continuity and solenoid resistance against specification
- B. Replace the modulator valve right away without testing the circuit first
- C. Clear the code and drive the vehicle until the fault returns again
- D. Disconnect the ABS fuse to prevent false warnings during the trip

91. When greasing a slip yoke, what indicates the correct amount of lubricant has been applied?

- A. The grease gun handle becomes impossible to pump any further
- B. The yoke starts to move without any resistance on the splines
- C. Fresh grease appears at the dust cap or seal vent
- D. The driveshaft turns more slowly when the truck is lifted

92. An apprentice is about to drive a wheel bearing cup in with a punch and hammer. As the mentor, what is the best response?

- A. Let the apprentice finish the job and then replace the cup only if it looks damaged afterward
- B. Stop the job calmly, show the correct driver and have the apprentice repeat the step
- C. Take the tools from the apprentice and complete the job yourself so it is done quickly
- D. Tell the apprentice to ask the parts counter staff how that kind of job is done

93. Which colours identify the two air lines on a standard tractor-trailer connection, and what does each line carry?

- A. Red is the service control line and blue is the emergency supply line
- B. Both lines are blue, and the red line is only used for the trailer lights
- C. Blue is the service control line and red is the emergency supply line
- D. Yellow is the service control line and green is the emergency supply line

94. A hydraulic system overheats during normal work and the oil cooler is clean. The relief valve is opening continuously. What is a likely cause?

- A. It runs at relief pressure from an overload or a stuck spool
- B. The tires are set at the wrong pressure for the load carried
- C. The clutch is out of adjustment and slipping on the flywheel
- D. The air brake dryer is not purging at the right interval

95. A coolant temperature sensor is unplugged and the ECM shows minus 40 degrees Celsius. When the harness terminals are jumpered together, the display moves to the highest temperature. What does this prove?

- A. The ECM input circuit is shorted internally to power inside the module
- B. The harness has an open circuit between the connector and the ECM
- C. The sensor is good and the wiring has a high-resistance fault
- D. The harness and ECM input are good, so the sensor is faulty

96. After installing new springs, why should U-bolt torque be rechecked after a short run?

- A. The U-bolts stretch and then shrink back to their original length
- B. The spring steel gets harder and the bolts tighten on their own
- C. The axle seat expands with heat and holds the bolts tight again
- D. The spring pack settles, so clamp load drops and the bolts loosen

97. A seat belt in a cab has been in a collision and the retractor locked up. What should be done?

- A. Clean the belt with mild soap and water and keep using it
- B. Replace the belt assembly and inspect the anchors for damage
- C. Cut off the damaged section and sew the ends together again
- D. Disable the buckle switch so the warning light no longer comes on

98. A technician replaces a damaged wire run with a much longer one for the same load. Which change is needed?

- A. A thinner gauge wire to reduce the weight of the harness run
- B. A wire with no insulation to improve the conduction of current
- C. A heavier gauge wire so that voltage drop stays within limits
- D. A smaller fuse in the circuit to protect the longer wire

99. When a double check valve between the two service circuits is blocked, what failure can occur?

- A. The stop lamp or trailer supply may lose its air feed
- B. The engine will stall each time the brake pedal is pressed and released
- C. The steering will become very light at low speeds on dry pavement
- D. The clutch will release before the pedal has moved any distance

100. A tandem with an inter-axle differential lock shows tire scuffing and driveline windup after turns, and the lock indicator stays on. What is the likely fault?

- A. A faulty alternator regulator that overcharges the battery system
- B. A cracked brake drum on the trailer axle during braking
- C. A leaking cab air bag at the rear cab suspension mount
- D. A stuck inter-axle lock air valve keeping the differential locked

101. A dash oil pressure gauge reads zero but there is no engine noise and no warning from the ECM. What should be done before engine shutdown is considered?

- A. Add a quart of oil and see if the gauge reading changes
- B. Verify actual pressure with a mechanical gauge at the oil gallery port
- C. Replace the oil filter without testing the pressure
- D. Change to a heavier oil grade and recheck the dash gauge

102. A slow crank complaint shows starter current draw well above specification. What does this most likely indicate?

- A. High resistance in a corroded battery cable or a loose ground strap
- B. A weak charging voltage from the alternator at idle speed
- C. Mechanical drag or shorted windings in the starter or engine
- D. A loose ground at the headlamp that causes dim light output

103. After coupling a trailer, what visual check confirms the fifth wheel is locked correctly?

- A. The trailer landing gear is fully raised and the crank is stowed away
- B. The handle is fully in and the jaws are closed on the kingpin
- C. The trailer brake lines are crossed and the glad-hands are connected
- D. The tractor engine is idling and the trailer brake is applied hard

104. A pressure test of a cooling system holds at 100 kPa for a minute, then falls steadily with no external leaks. The dipstick shows milky oil. What is the likely cause?

- A. An internal leak such as a head gasket, liner seal or oil cooler failure
- B. A radiator cap that has a weak vacuum relief spring on the filler neck
- C. A loose fan belt that slips at higher engine speeds and loads
- D. A thermostat that is opening slightly too early in the warm-up cycle

105. A cab has a musty smell from the vents when the A/C starts. What is the best service step?

- A. Replace the cabin air filter and clean the evaporator case and drain
- B. Add oil to the compressor and run the A/C on the highest setting
- C. Lower the tire pressure on the drive axles by about 20 kPa
- D. Replace the engine oil filter and the engine air filter housing

106. A truck has air brakes with automatic slack adjusters. The technician finds the brake stroke excessive, and manual adjustment brings it back within limits but it returns to excess within a week. What should be concluded?

- A. That is normal because automatic adjusters need a manual turn every week
- B. The air compressor is delivering too much pressure to the brake chambers
- C. The automatic adjuster is not working and must be inspected or replaced
- D. The wheel bearings need extra preload to stop the stroke from drifting

107. A drive axle universal joint squeaks at low speed and a grease fitting will not accept grease even with the gun fully pumped. What is the likely condition?

- A. The slip yoke splines are overfilled and need to be drained
- B. The transmission output seal is leaking onto the shaft joint
- C. The axle breather is plugged and trapping pressure in the housing
- D. The joint's bearing cups are dry or seized and the joint needs replacement

108. An intake grid heater is not warming the air on a cold start and no current is measured at the heater. What is the best first test?

- A. Replace the turbocharger and recheck the intake air temperature
- B. Flush the cooling system with fresh coolant and bleed the heater lines
- C. Check for power at the heater relay output, then the control signal
- D. Replace the clutch disc and pressure plate on the transmission

109. Why should the fifth wheel top plate be lubricated at the scheduled intervals?

- A. To increase the clamping force of the jaws on the trailer kingpin
- B. To prevent the kingpin from rotating at all inside the jaws
- C. To raise the trailer's ride height above the tractor frame rails
- D. To reduce friction and wear on the plate and fifth wheel

110. A technician is told to keep wheel mounting surfaces between the hub and a disc wheel clean and dry. Why is lubricant kept off those surfaces?

- A. Lubricant makes the brake drum run hotter and lets it warp more often in service
- B. Lubricant lets the clamped parts slip and lose clamp load, so nuts loosen
- C. Lubricant attracts road dust that slowly wears down the wheel studs and threads
- D. Lubricant increases the torque that the wheel nuts can safely hold on the studs

111. A sliding tandem on a trailer will not release when the pull handle is operated. What should the technician check?

- A. Air pressure to the slider lock cylinder and binding lock pins
- B. The reefer fuel pump and the fuel filter on the unit
- C. The kingpin height and the fifth wheel plate angle
- D. The cab air conditioner filter and the blower resistor

112. A hydraulic fan drive runs at full speed all the time and the engine runs cool. What should be checked first?

- A. The fan control solenoid or valve and its command signal
- B. The rear axle ratio and the gear oil level in the carrier
- C. The front hub seals and the wheel bearing end play
- D. The brake pedal height and the stop lamp switch setting

113. When checking a wet-liner engine, a dial indicator shows the liner standing 0.03 mm below the specified protrusion. What problem can this cause?

- A. Excess crankcase oil pressure at the main bearings during sustained hard operation
- B. Cold-start fuel gelling in the injection pump and the fuel filter housing
- C. Premature wear of the transmission input shaft pilot bearing and its bushing
- D. Combustion gas or coolant leakage past the head gasket and liner seal

114. A battery isolator relay does not close when the ignition is switched on, so the auxiliary battery is not charged. Which step comes first?

- A. Remove the alternator and bench test it before doing anything else
- B. Measure voltage at the relay coil terminals with the ignition on
- C. Replace both batteries as a precaution against a weak battery
- D. Tighten the wheel nuts on the drive axle to the specified torque

115. Why must a technician apply the parking brakes and chock the wheels before releasing the spring brakes with a caging tool?

- A. The caging tool will not operate while the engine is running at idle
- B. The brake drums need to cool down fully before the tool is fitted
- C. Releasing the spring can let the vehicle roll, so mechanical restraint is needed
- D. The tool needs the trailer supply line connected before it will function

116. Gear oil is found inside a drum brake and the lining is soaked. What is the correct repair?

- A. Replace the wheel seal, clean the hub and replace the contaminated linings
- B. Clean the lining with solvent and return the axle to service
- C. Add more gear oil to the axle housing and recheck the level
- D. Replace only the drum and keep the old oil-soaked lining

117. A steer tire shows a bulge in the sidewall after the truck struck a curb. The tire holds air. What should the technician do?

- A. Lower the inflation pressure and keep using the tire on the rear axle
- B. Remove the tire from service and replace it, because the casing cords are damaged
- C. Patch the sidewall from the inside and return the tire to the steer axle
- D. Grind the bulge flat and keep the tire since it is still holding pressure

118. A hybrid truck will not enter ready mode and the dash shows a low-voltage warning. The high-voltage pack charge is normal. What should be checked first?

- A. The radiator cap pressure rating on the cooling system
- B. The wheel nut torque on the drive axle and the front axle
- C. The air dryer cartridge on the brake supply system
- D. The 12 volt auxiliary battery, because it powers the controllers and contactors

119. A technician checks crankshaft end play with a dial indicator while prying the crank back and forth. What does a reading above specification indicate?

- A. Excessive wear in the connecting rod small end bushings of the engine
- B. A bent flywheel housing that needs to be straightened or replaced
- C. Worn thrust bearing surfaces that need to be replaced or machined
- D. A faulty harmonic balancer that must be rebalanced or replaced

120. A scope shows a CAN high line that switches between about 2.5 and 3.5 volts. What does this normally indicate?

- A. A short to battery voltage on the CAN high wire near the module
- B. A normal CAN high signal with the correct recessive and dominant levels
- C. A short to ground on the CAN low wire between two modules
- D. A failed terminating resistor on one end of the network

121. A cab suspension air spring on a rear cab mount is leaking, and the ride is harsh with the cab sitting low. What is the best repair?

- A. Replace the leaking air spring and check the leveling valve and lines
- B. Add a bump stop block under the cab to hold it up at the rear
- C. Lower the air pressure at the tractor protection valve on the frame
- D. Replace the engine mounts and the transmission mount rubber

122. A driver complains that the air system builds pressure slowly in cold weather, and the compressor unloads normally when the system is full. Governor and dryer are fine. What should be checked?

- A. The clutch release bearing for end play and for wear on the sleeve
- B. The steering pump belt for correct tension and for cracks in the ribs
- C. The trailer kingpin for wear on the lock surface and the plate height
- D. Compressor intake air filter and discharge line for restriction

123. A driveline retarder on a bus switches itself off whenever the ABS activates during braking on ice. What does this indicate?

- A. A fault in the transmission fluid cooler lines on the retarder
- B. A faulty wheel bearing on the rear axle during braking
- C. Normal operation, because the retarder is disabled during ABS activity
- D. A broken engine brake solenoid on the cylinder head cover

124. When is the correct time to measure tire inflation pressure for an accurate reading?

- A. Right after a long highway trip while the tires are still hot to touch
- B. Only after raising the pressure to the maximum on the sidewall
- C. Only when the trailer is fully loaded and running on the highway
- D. When the tires are cold, after the vehicle has been parked for several hours

125. A truck warms up slowly, the cab heater blows only lukewarm air, and the coolant gauge stays well below normal on the highway. What is the most likely cause?

- A. A thermostat stuck in the closed position
- B. A thermostat stuck in the open position
- C. A radiator with several tubes plugged internally
- D. A water pump with a broken impeller blade

126. A sleeper's auxiliary heater uses a small diesel burner and will not start in cold weather. What is the first check?

- A. Brake lining thickness at the rear axle drum brakes
- B. Fifth wheel lubrication on the top plate and the jaws
- C. Fuel supply and the glow element or igniter, plus fault codes
- D. Wheel nut torque on the steer axle and the drive axle

127. A fleet telematics unit wired directly to the battery drains it over a long weekend. What is the best correction?

- A. Rewire the unit to a switched feed or a low-power sleep mode
- B. Install a larger battery and leave the wiring alone as it is
- C. Remove the alternator belt whenever the vehicle is parked for the weekend
- D. Disconnect the unit's antenna each night before the truck is parked

128. A service writer asks a technician to explain a repair to a customer who is upset about the bill. Which approach is best?

- A. Read the part numbers from the repair order and point to the total at the bottom of the page
- B. Tell the customer that the shop's rates are fixed and cannot be discussed or changed
- C. Skip the details and offer a discount without describing any of the work that was done
- D. Describe the failure, the repair and why it was needed in plain terms, and listen to concerns

129. A roll-up rear door on a trailer binds partway up and the springs seem weak. What is the safe approach?

- A. Follow the manufacturer's procedure for spring tension, using the correct tools
- B. Cut the spring to release the tension quickly with a cutting torch
- C. Hold the spring in your hand while adjusting the cable drum
- D. Remove the safety stops at the track to free up the door

130. Before disconnecting a line near a hydraulic accumulator, what must be done?

- A. Open the line quickly so that the pressure can escape at once
- B. Release the stored pressure by following the manufacturer's bleed-down procedure
- C. Heat the accumulator with a torch to lower the gas pressure
- D. Tap the accumulator shell with a hammer to settle the gas charge

131. A technician measures brake application time and finds the rear axle brakes apply noticeably later than the front brakes on a straight truck. The lines and chambers are the same size. Which component is the most likely cause?

- A. A tire with slightly lower tread depth on the steer axle of the truck
- B. A fan belt that is slightly loose on the water pump pulley
- C. A restricted or slow relay valve on the rear brake circuit
- D. A cab mount that has lost some of its rubber stiffness over time

132. A drive axle emits a whine only while the truck coasts down a hill with the throttle released, and not under power. Which condition is most likely?

- A. Ring and pinion tooth contact that has worn on the coast side
- B. A leaking brake chamber diaphragm on the rear axle and spring brake
- C. A cracked air tank on the chassis near the rear crossmember
- D. A worn clutch release fork at the transmission bell housing

133. A hub with an oil-filled wheel end shows a milky fluid in the sight window. What does this suggest?

- A. The hub has too much grease packed into the bearing cavity
- B. The brake drum has overheated and cooked the hub oil
- C. The axle ratio is too low for the truck and the load
- D. Water contamination in the hub oil, so the seals need service

134. A technician finds the engine brake is weak and the engine oil is also at an elevated temperature. The cooler thermostat is operating. Which supporting system should be checked next?

- A. The air dryer cartridge desiccant condition and the purge valve
- B. The engine oil cooler flow and coolant flow through the cooler
- C. The steering gear sector shaft adjustment and mounting bolts
- D. The fifth wheel lock jaw wear gauge reading at the plate

135. A technician measures 0.9 volt of drop on the battery ground cable while cranking, and the engine turns slowly. The cable looks clean. Where is the resistance most likely hiding?

- A. In the starter armature windings and the brush holder assembly
- B. In the alternator rectifier diodes and the regulator housing
- C. At the cable crimp or the frame ground connection
- D. In the fuel injector solenoid coils and the harness connector

Practice Exam 19: Answer Key and Explanations

1. C — If charging voltage is normal but batteries discharge overnight, current is leaving the battery with the key off. A parasitic draw test with an ammeter finds the circuit by pulling fuses one at a time. A starter, compression or air leakdown test has no connection to the overnight discharge. Pull fuses one at a time to find the load.

2. B — A viscous fan clutch should free-wheel when the engine is cold and engage only when heat is sensed. A fan that roars at full speed from cold start indicates the clutch is locked up. A stuck thermostat or weak cap changes coolant temperature behaviour, but neither would force the fan to turn at full engine-driven speed.

3. A — A steering gear that shifts on its mounting can create play at the wheels even when the internal parts are within limits. Checking the mounting bolts and frame bracket is a quick, important step. The air dryer, turbocharger and rear cab mounts are unrelated to steering wander. Torque the bolts and inspect brackets for cracks.

4. A — A pull that appears at light to moderate pressure but disappears at full application points to unequal friction, such as glazed or contaminated lining or a different drum surface, on one side. Even pushrod stroke rules out the chamber travel. Governor settings, steering free play and dryer purge leaks do not change side-to-side brake torque.

5. B — A pedal that sinks under steady pressure with no external leak means fluid is bypassing the piston seals inside the master or slave cylinder, so the release stroke is lost. A pilot bearing or glazed disc would not cause the pedal to sink, and a loose clutch brake affects shifting from rest.

6. C — A cracked weld in a load-bearing stand can fail without warning under a raised vehicle. The stand must be tagged and removed so nobody uses it. Field repairs by grinding or welding without the manufacturer's approval void the rated capacity, and restricting it to lighter jobs still leaves a hidden hazard for the next person.

7. D — A trailer on its own air tank holds ride height only if the springs, lines and valves are airtight. Settling overnight points to a slow leak at an air spring, push-in fitting or height control valve, which a soap solution will locate. Landing gear lubricant, tire pressure equalization and kingpin position do not drain air from the suspension.

8. A — A bulge in a hose cover means the wire or fibre reinforcement has failed or fluid has entered between layers, so the hose can burst without warning even though it is dry. Hoses with this damage are replaced, not taped or tightened. Lowering relief pressure leaves a weakened hose under stress and does not make it safe.

9. B — In a series pair, mismatched or aged batteries charge unevenly and shorten each other's life. Replacing both with a matched pair is the standard practice unless the stronger one is close to new. Using any battery, adding a third or just recharging the weak one leaves the imbalance. Mixed ages and capacities charge unevenly and shorten life.

10. D — A saturated crankcase ventilation element restricts the flow of blow-by gas, so pressure builds and pushes oil past seals and the dipstick tube. Replacing the filter restores normal venting and may stop the leaks without any seal work. Seals would leak again if the pressure remained, and venting to open air is not an approved fix.

11. C — A sweet odour and oily fogging on the glass come from heated glycol coolant escaping from the heater core, and the falling coolant level confirms an actual leak. A pressure test of the heater circuit would verify it. A compressor seal leak, a clogged filter or a hot blower motor do not use up engine coolant.

12. A — Heavy steering at a standstill with good fluid and hoses points to low pump output or a weak relief setting, because parked turns need the highest assist pressure. Measuring pump relief pressure with a gauge shows whether the pump or the steering gear is at fault. Wheel nuts and clutch hydraulics do not affect steering assist.

13. C — With equal air pressure delivered, a weak brake force means the mechanical stage is not converting force into torque, usually from a seized cam or slack adjuster, or oil-soaked or worn lining. Compressor carbon, steering gear play and alternator belt tension do not influence the braking force at one wheel.

14. D — Oil on the friction surfaces ruins any new clutch quickly. The source must be located and repaired, and the flywheel cleaned or resurfaced. Sanding a disc, changing lubricant or fitting a stiffer spring does not remove the contamination source. Resurface or replace the flywheel, then install the new disc dry and clean.

15. B — A cab that will not seat fully usually has a problem at the latch mechanism or striker, such as bent parts, debris or wear. Checking those parts first is the correct sequence. The compressor intake, clutch disc and pushrod length have no relation to the cab latch. Straighten, replace or adjust parts as needed.

16. C — Bright lights show the battery has power, but the starter gets none, so resistance exists in the starter circuit. A voltage drop test across the solenoid contacts shows a worn contact set or bad connection. Coolant specific gravity, wheel sensors and a fan clutch are unrelated to a crank-no-start fault.

17. D — Vibration of the liner wall creates tiny vapour bubbles that collapse against the coolant side and erode the surface, a process called cavitation. Proper coolant additives form a protective film that resists it. Piston ring scuffing would mark the inside bore, and glycol concentration or thermostat position does not produce clustered pitting on the coolant surface.

18. B — High-voltage work begins by shutting the system down, isolating the pack with the service disconnect, waiting for capacitors to discharge and verifying zero voltage with a rated meter. Only then is the work started. Cutting cables or washing the pack is dangerous. Verify zero voltage with a rated meter before touching any conductor.

19. A — Free play is checked with the power steering active, wheels straight and tires on the ground, by turning the steering wheel until the road wheels begin to move. Raising the axle, turning to the stops or removing the wheel would not give a meaningful reading. Excess play beyond the limit calls for adjustment or repair.

20. D — Setting stroke at the maximum limit leaves little reserve, so under hard braking the pushrod may reach the end of travel and lose force. The brake feels normal at light pressure but stops poorly. Shorter stroke at the correct adjustment gives better reserve. Lining thickness, tank pressure and caster do not explain a longer stopping distance in this case.

21. C — Range shifts on many heavy-duty manual transmissions are made by an air-operated cylinder. If the lever moves but the range does not change, the air supply, filter regulator or range valve is a likely fault. Tire pressure, drum condition and coolant level have no effect. The lever moving freely shows the linkage is not the problem.

22. A — A good relay coil shows a limited resistance, often between about 50 and 120 ohms. An infinite reading means the winding is broken, so the relay cannot energize and must be replaced. Welded contacts would be tested on the switched terminals, not the coil. Replace the relay and retest the circuit with the new part.

23. B — Oil in the compressor discharge means oil is being pushed across the compressor-end seal. A restricted turbo drain line or high crankcase pressure keeps oil from draining and forces it past the seal, so those are checked before replacing the turbocharger. Injector spray, fan engagement and DPF pressure do not explain oil in the intake path.

24. B — A WHMIS safety data sheet has 16 sections, and the first-aid measures section tells a worker what to do after skin, eye, inhalation or swallowing exposure. It is the right place to look when someone has been exposed. Disposal, regulatory and supplier details are useful later but do not guide immediate treatment of the person involved.

25. A — If the brakes drag with full air, the spring brakes may not be fully releasing because of a faulty valve, a leaking chamber or a binding mechanism. Tread depth, thermostat and the cab filter do not cause brake drag. Check the spring brake release air line pressure and the relay valve exhaust for sticking or leaking.

26. C — Drift under load with the valve in neutral shows oil bypassing the piston seals or a faulty holding valve. Brake air pressure, wheel nuts and the alternator do not cause cylinder drift. Isolate the cylinder and check the piston seals by holding pressure and watching for movement, then repair or replace the faulty part.

27. D — Feathering is a sign of sideways scrub from incorrect toe. The ribs wear with a sharp edge on one side. Overinflation causes centre wear, and engine oil pressure and slack adjusters have no effect on tread pattern. Measure toe, correct it to specification and check the tie rod ends for wear.

28. A — Trailer ABS needs a dedicated power feed and ground through the connector. Low voltage or a poor ground makes the controller set a fault and keep the lamp on. Kingpin height, bumper wear and reefer fuel are not part of the ABS electrical supply. Low voltage or a poor ground makes the controller set a fault code.

29. B — A leak that is not audible at the chambers or lines often escapes at a valve exhaust. A leaking brake valve or relay valve seat vents air continuously out of the exhaust port when the brake is applied. The steering box, radiator cap and clutch brake have nothing to do with an air pressure leak-down.

30. D — A splitter is controlled by air through a valve. With normal system air, the fault is often at the valve, solenoid, lines or cylinder. Clutch disc, axle oil and fifth wheel adjustment do not affect the splitter. Check for supply pressure at the valve, then the solenoid signal, then the cylinder itself, tracing the circuit from the source forward.

31. C — When a healthy cylinder is cut out, engine speed drops or the fuel command rises to compensate. No response means the cylinder was already making little or no power. The technician then checks its injector, valve lash and compression to find out why. A cold-coolant abort or turbo overspeed would not give a cylinder-specific lack of response.

32. C — Bubbles in the sight glass in a system that should show a clear liquid stream mean the charge is low. The leak must be found and repaired before recharging. A full charge would show a clear stream, and engine oil level or a heater filter has no relation. Find the leak before recharging.

33. D — If the network recovers when one node is removed, that node or its wiring is pulling the bus down or causing interference. The next step is to inspect its connector and wiring. Normal terminating resistors do not clear a fault when a module is removed. Then inspect that module's connector, pins and wiring for damage.

34. B — Cupping comes from the tire bouncing along the road, which can be caused by worn shocks, loose wheel bearings or imbalance. Coolant level, fuel injector leaks and starter condition do not cause cupping. Check the shock absorbers for leaks, the wheel bearings for end play and the tire for balance before replacing the tires.

35. A — Sodium and potassium are coolant additive elements, and glycol confirms antifreeze. Together they show coolant has entered the oil, usually through an oil cooler, a head gasket or a liner seal. Dust shows up as silicon, and fuel dilution lowers viscosity and flash point without adding glycol or coolant elements.

36. B — A worn or hardened grommet cannot seal the glad-hand face, so the damaged seal must be replaced and the connection rechecked with a soap solution. Squeezing the line, adding tape to sealing faces, or crossing the service and emergency lines can damage the seal or create an unsafe connection. Always retest with soap solution after the repair.

37. A — A small amount of fine metal paste on the magnet is normal for gear sets in service. Chips or chunks would point to damage. No metal in large pieces means the unit can stay in service with the normal fluid change interval. Large chips or slivers would call for a teardown, but fine paste does not.

38. D — Brake lamp loading changes current through a shared ground. If that ground is high in resistance, the voltage at other lamps shifts and the LEDs flicker. Oil pressure, clutch wear and steering pump cavitation do not affect the lighting circuit ground. Cleaning and tightening the ground often cures flicker, while bulbs and engine parts remain unaffected by it.

39. C — Water often enters through blocked drains or a seal contact point that is not tight, and then travels along the body to appear somewhere else. A controlled water test traces the leak. Drilling holes, replacing a thermostat or adding insulation does not locate or stop the leak. Fix the entry point once the path is found.

40. B — Inside shoulder wear with correct pressure points to the tire leaning inward, which is excess negative camber, often from worn kingpins or bent parts. Caster and steering axis inclination influence handling and return, not shoulder wear directly. Check kingpins, bushings and the axle beam for wear or bending, and measure camber against specification.

41. D — Oil that seeps down worn valve stem seals collects in the cylinders overnight and burns off as blue smoke at the first start, then the smoke clears as the engine runs. Leaking injectors would give white or grey smoke and fuel dilution, a restricted filter gives black smoke, and a cold thermostat does not produce blue smoke.

42. C — End play is movement along the spindle axis, so the plunger must be parallel to the axle centreline and the base must be rigidly fixed to a part that does not move with the hub. Pushing and pulling the hub then shows the total axial travel. A plunger square to the tread would measure radial runout instead.

43. A — If the lamps are fed through the connector, voltage on the stop lamp pin with the brakes applied shows whether the signal reaches the trailer. A missing signal points to the tractor side, and a good signal points to the trailer wiring. The kingpin, landing gear and reefer fuel are unrelated.

44. C — A relief valve setting must be measured with a calibrated gauge at the relief pressure. Listening, bottoming the screw or counting turns does not give a reliable pressure value and can lead to

dangerous over-pressure. Install a gauge, run the pump over relief and adjust the valve until the gauge shows the specified pressure.

45. D — A leaking purge valve vents the supply to the atmosphere and defeats the leakdown limit. Repairing the valve or seat fixes the actual fault. Raising pressure settings or fitting a bigger compressor only masks the leak, and draining the wet tank does not address the leaking valve. Masking the leak with settings would hide a failing component.

46. A — Burnt fluid and friction material in the pan show clutch plates have been slipping and wearing. Changing fluid alone does not fix the cause. The transmission needs diagnosis and probably an overhaul. A brake booster or A/C compressor does not affect the transmission fluid. Fluid alone cannot cure that damage, so plan a teardown.

47. B — Many engine and chassis sensors share a regulated five volt reference supply from the ECM. If that line is shorted to ground, every sensor on it reads low and sets codes together. Coolant level, brake lining wear and fuel cap leaks do not create simultaneous low-voltage sensor codes. Unplug one sensor at a time to find the short.

48. C — Engine brake performance depends on the master-slave piston lash, which controls how far the exhaust valves are opened at the right time. If lash is wrong on some cylinders, they produce little retarding. With no electrical codes, a mechanical lash check is the logical first step. The other items are unrelated to engine brake valve timing.

49. B — A system with no pressure has lost its refrigerant, so the low-pressure switch is correctly preventing compressor operation. The leak must be repaired, then the system evacuated and recharged. Bypassing the switch can destroy the compressor. Recharging without repair would simply leak out again, and bypassing protection risks compressor damage and cost.

50. D — Underinflation lets the tire flex and puts more load on the shoulders, wearing them faster than the centre. Overinflation wears the centre. A bent steering arm creates an uneven or single-sided pattern, and caster does not produce symmetrical shoulder wear. Check pressures with a calibrated gauge when the tires are cold and correct them to the load rating.

51. A — A low insulation resistance reading means current could leak to the chassis, which is a shock hazard. Isolating components one at a time locates the leak. Clearing codes, replacing the 12 volt battery or bypassing the monitor leaves a dangerous fault. Follow the manual to isolate one circuit at a time while measuring insulation resistance.

52. C — Oil in the tanks and carbon in the discharge line point to oil passing the compressor rings or a restricted engine-side supply. This oil contaminates the dryer and the valves. The governor, foot valve and tractor protection valve do not push compressor oil into the air system. Left alone, the oil will also foul the dryer and valves.

53. D — Lock-up shudder is often related to degraded fluid or the wrong fluid, since the lock-up clutch needs correct friction properties. Servicing with the specified fluid and checking level is a low-cost first

step. The rear axle ring gear, idle speed and TPMS have no effect. Clean, correct fluid often cures shudder at low cost.

54. A — A magnetic sensor generates an AC signal whose voltage increases with speed as teeth pass the pole piece. A steady DC voltage or zero-ohm coil would not be a normal sensor behaviour, and an open circuit means the coil winding is broken. Zero voltage, or a reading that never changes, points to a failed sensor or damaged wiring.

55. B — Black smoke with low boost means the engine is getting less air than the fuel it is given. With a clean intake filter, a leak in the charge air piping, clamp or cooler is a common cause. The cab filter, thermostat and alternator belt are not part of the air path from the turbo to the engine.

56. B — Uneven tracking and tire wear on one axle of a tandem suggests the axles are not parallel or square to the frame. Measuring thrust angle and axle alignment shows the problem. Compressor temperature, clutch travel and battery gravity are unrelated. Correct the alignment so the axles run square and parallel to each other and the frame.

57. D — Normal regulated charging is typically around 13.8 to 14.8 volts for a 12 volt system. A reading well above that, with a hot gassing battery, shows the regulator is allowing too much output. A slipping belt would reduce charging, and starter drag does not raise the voltage. Replace the regulator or alternator, then recheck charging voltage.

58. C — Cuts in the load-bearing fibres of a web sling are a removal criterion because the remaining strength cannot be known. A light load does not make the damage safe, since shock loading and shifting can overload the damaged section. Sewing or hiding the cut does not restore the original rating, so the sling is discarded.

59. A — A damaged sensor lead can cause intermittent signals and ABS faults. Repairing or replacing the harness with the correct seals restores reliable operation. Tape and clearing codes is temporary, and swapping axles or removing a fuse leaves the problem. A repair with sealed connectors prevents moisture from getting into the wiring again later.

60. D — High particle counts cause wear and valve sticking. Cleaning or replacing the fluid, changing the filters and finding where contamination entered is the proper response. Additives, higher pressure or replacing the pump without addressing fluid cleanliness do not fix the problem. Then verify with a new sample that the cleanliness code has improved.

61. C — A caging tool or bolt compresses the power spring to release the brake mechanically, allowing the vehicle to be moved safely. The chamber must then be replaced or repaired. Cutting hoses or prying clamps releases spring force suddenly and is dangerous, and the service line does not hold the spring.

62. A — Lubricant level is checked at the fill plug opening with the transmission level, because a slope shifts the oil toward one end of the case and gives a false reading. Move the truck to level ground and recheck before adding or draining anything. Engine speed does not change the static level.

63. B — A plugged DPF is usually the result of another problem, such as faulty injectors, excess oil consumption or a failed sensor. Replacing the filter without fixing the cause will plug the new one.

Brake air dryer cycles, tire pressures and wheel nut torque do not affect exhaust soot loading. Replacing it alone would only repeat the failure.

64. B — Frame rails are heat-treated and welding across flanges can weaken them. The manufacturer's procedure normally uses a reinforcing member and limits welds, and drilling flanges can create new stress risers. Body filler provides no strength. Welding across a heat-treated flange can create a brittle zone that cracks again, so reinforcement plates are fastened as specified.

65. C — A draw this high drains the batteries in a day or two. Removing fuses one by one while watching the meter shows which circuit contains the load, and the wiring or device can then be diagnosed. Bigger batteries or an extra charger only hides the problem. Then diagnose the wiring or device on that circuit.

66. A — Diluted DEF no longer meets the specification, so the SCR dosing will not reduce NOx properly and the engine may derate. Topping up cannot reliably correct a large error, and contamination can leave deposits. Draining, flushing and refilling with ISO 22241 fluid restores correct operation. Coolant must never be added to the DEF tank.

67. D — A drum with a crack that runs into the friction surface can fail under thermal load, throwing pieces and losing braking. Industry practice is to replace the drum, not to weld, fill or drill it. Machining does not remove a structural crack. Industry practice treats any crack reaching the friction surface as a replacement item, regardless of size.

68. A — Moisture in the control air can corrode valves and slow the shift actuator. Fixing the cause, including checking the dryer, and servicing the actuator or valve is the right approach. Delaying service, replacing the clutch disc or lowering tire pressure does not address the shift fault. Also check the dryer, since wet air will return the fault.

69. C — Windshield urethane must cure to develop bond strength, and the glass helps support the roof and airbag deployment. The safe drive-away time is set by the adhesive maker. Heat, wipers and paint are not the reason for waiting. Follow the adhesive maker's safe drive-away time exactly, because it depends on temperature and humidity.

70. D — Insufficient air across the evaporator lets the coil drop below freezing and ice up. A restricted filter, a weak blower or a blocked duct is a common cause. Coolant volume, steering seals and brake drum cracks have no effect on evaporator icing. Check the blower speed, the filter and the ducts for blockages.

71. B — When a second load comes on and lights dim, voltage is being lost in a shared path. A loose or corroded ground adds resistance, so the added current drops more voltage. Brake drum, clutch linkage and axle bearing faults do not affect lighting voltage. Clean and tighten the ground, then retest the lamp voltage.

72. C — A lean on an air suspension shows that one side is not holding or receiving air pressure. Checking the air spring for leaks and the height control valve operation locates the fault. The fan clutch,

wastegate and pressure plate have nothing to do with ride height. Check the leveling valve linkage after the spring is repaired.

73. D — An EGR valve held open at idle lets exhaust gas into the intake when the cylinders need fresh air, causing a rough idle and stalls. Carbon build-up is the usual reason it sticks. A starter solenoid does not affect a running engine, and a wheel speed sensor ring has no connection to engine intake.

74. B — A spongy pedal after opening the hydraulic circuit usually means air is trapped in the lines or caliper. Bleeding in the manufacturer's sequence removes it and restores a firm pedal. Changing pedal height or pads does not remove air, and mixing different brake fluid types can damage seals and lower the boiling point.

75. A — If the vibration changes with torque and goes away when coasting in neutral, it is related to power transmission through the engine, driveline or U-joints under load. A tire or drum out of balance would remain at the same road speed. A fifth wheel does not cause such vibration. Check driveshaft balance, phasing and joint angles next.

76. C — A jack is a lifting device, not a support. Hydraulic seals can bleed down or the load can shift, so the vehicle is lowered onto rated stands placed at approved points and the remaining wheels are chocked. Blocks, parking brakes and check valves do not provide a reliable positive mechanical support while someone is under the axle.

77. D — A bent locking rod stops the cam from engaging the retainer, so the rod must be corrected or replaced and the latch adjusted for secure closure. Rope, removing the seal or changing tires does not keep the door latched. A door that cannot lock securely can open in transit and cause damage or injury.

78. A — A twist in a hose shortens its life, as the reinforcement is stressed unevenly. The line should be installed without twist, using a back-up wrench at the fitting. A twisted hose is not stronger and does not flow faster. Use a back-up wrench at the fitting and keep the hose lay line straight.

79. B — If supply voltage is normal but the motor runs slowly, resistance in the ground side or excess mechanical load is likely. Checking the ground connection and the current draw shows which. Air dryer, boost pressure and tire depth do not affect a wiper motor. Slow speed with normal supply voltage points to the ground side or load.

80. B — Ride height should be set with the system at normal operating pressure and the vehicle on level ground, so the suspension is at its working position. A deflated suspension, a jacked vehicle or applied brakes would give a false setting. Setting the height at partial pressure would let the suspension sag once the system is fully charged.

81. A — Bubbles in the fuel mean air is being drawn in. The suction side, between the tank and the lift pump, is under vacuum, so loose fittings or cracked lines there pull in air rather than leak fuel out. High-pressure and return lines leak fuel outward, and turbo oil fittings are unrelated to fuel aeration.

82. C — A properly crimped connector with adhesive-lined heat shrink gives a strong mechanical joint and seals out water and salt. Twisted wires with tape, bare solder joints and wire nuts do not resist

vibration or moisture, so corrosion and failure follow. These connectors also resist vibration, water and road salt, which are constant threats under a truck frame.

83. D — An intermittent signal at speed often comes from a wrong air gap, wheel-end runout or a failing sensor coil. Checking the gap, resistance and output while the wheel spins shows which. Pushrod stroke, governor settings and steering linkage play do not affect the sensor signal. Measuring both together separates a gap fault from a failing coil.

84. C — A rough bearing and cracked support allow shaft movement and vibration. Replacing the bearing assembly and checking alignment restores support. Extra grease, removing the support or adding clamps cannot fix a failed bearing and may damage the shaft. Replacing only the bearing without the rubber or without checking alignment will leave vibration and bring the noise back quickly.

85. A — Battery management reduces charging current when cells are too hot to protect the battery. Waiting for cooling or checking the thermal system is the proper response. Tire pressure, brake leaks and a clean plug are not related. Allow the pack to cool or fix the thermal system, and then charge rate normally returns.

86. B — Replacing springs as pairs on an axle keeps height and stiffness equal, which protects handling and loading. Replacing a single leaf, adding a block or welding a spring leaf compromises strength and balance. Replacing in pairs keeps the load, stiffness and ride height equal on both sides of the axle, which protects handling.

87. D — A restriction in a fuel filter limits flow as demand rises, so pressure falls at the gallery under load. Comparing inlet and outlet pressures shows where the restriction is. Alternator output, clutch bearing noise and brake pushrod travel are unrelated to fuel supply pressure. Comparing inlet and outlet pressures shows exactly where the restriction sits.

88. B — Refrigerants are controlled substances because of their effect on the ozone layer or climate. They must be recovered with approved equipment by properly certified technicians. Venting, heating lines or draining into the cab is unsafe and not allowed. Venting is not allowed, and recovered refrigerant must be handled according to the rules in your province.

89. D — A breaker protects the wiring, so frequent tripping means excess current from a short or overload. The cause must be found and corrected. A higher rating can let the wire overheat, and taping the breaker or removing the ground does not solve the fault. Higher ratings let the wiring overheat before the device trips.

90. A — Most solenoid circuit codes come from wiring or connector issues. Checking the pins, harness continuity and coil resistance finds the actual fault before an expensive part is replaced. Clearing the code or pulling the fuse leaves the vehicle without ABS and does not fix anything. Wiring and connector faults cause most solenoid circuit codes in service.

91. C — Slip yoke splines need lubrication so they can slide freely. Grease is added until a small amount of fresh grease appears at the seal or vent. Forcing grease until the gun locks up can blow a seal, and the other cues do not show correct fill. Overfilling can blow out the cap, so stop at the first sign.

- 92. B** — Effective mentoring corrects an unsafe or damaging method immediately and respectfully, demonstrates the right technique, and lets the learner practise it under observation. Allowing the damage to happen wastes parts and teaches the wrong habit, while taking over the job removes the learning and sending the apprentice elsewhere avoids the mentor's responsibility.
- 93. C** — Heavy-duty combination vehicles use colour coding to prevent crossed connections: the emergency or supply line is red and the service or control line is blue. Crossing them can leave the trailer brakes applied or unable to charge. Fleets often also use different coupling styles to prevent mix-ups, but the colours remain the common identification.
- 94. A** — A relief valve that opens continuously passes oil at high pressure back to the tank, turning energy into heat. An overload or a valve that is stuck or set too low is a likely cause. Tire pressure, clutch adjustment and dryer purging do not heat the hydraulic oil. Check the relief setting and the load next.
- 95. D** — An unplugged sensor looks like an open circuit, so the ECM reads extreme cold. Jumpering the terminals simulates a very low resistance and the reading should jump to extreme heat. Seeing both responses proves the harness and ECM input work, which leaves the sensor as the fault. An open or shorted harness would not respond to the jumper.
- 96. D** — New springs settle under load, which reduces clamping force on the U-bolts. Rechecking torque after a short run keeps the axle secure. Loose U-bolts cause spring or axle damage. The bolts do not self-tighten from hardening or seat expansion. Recheck torque to specification after the first short run, then again at the scheduled interval.
- 97. B** — A belt that has been loaded in a collision may have stretched webbing or a damaged retractor and pretensioner. The assembly should be replaced and the anchors checked. Cleaning, sewing or disabling a switch do not restore protection. A belt that was loaded in a collision can be weakened even if the webbing looks fine.
- 98. C** — Resistance in a wire rises with length, so a longer run produces more voltage drop at the same current. Using a heavier gauge reduces resistance and keeps the load voltage acceptable. A thinner wire makes things worse, and removing insulation or reducing the fuse does not help. Always size wire for the current and the total circuit length.
- 99. A** — A double check valve selects the higher of two circuit pressures for a shared device such as stop lamp switches, trailer service control or other loads. If it is blocked, that device may lose its air supply from one or both circuits. The other listed symptoms belong to different systems.
- 100. D** — The inter-axle lock should be used only on slippery roads and released on dry pavement. If the lock stays engaged, the two axles are forced to turn together in curves, which causes windup and tire scuffing. Charging, trailer drum and cab air bag problems do not explain it. Release the lock on dry roads and repair the air valve.
- 101. B** — A dash reading can be wrong because of a failed sender, wiring fault or gauge, so the true pressure must be measured with a known mechanical gauge. That test shows whether the engine is truly

at risk. Guessing with oil, a new filter or a heavier grade can waste time and may hide an actual lubrication problem.

102. C — Higher-than-normal starter current points to extra mechanical load or an electrically shorted motor, which pulls more current. High resistance in a cable would reduce current. Alternator voltage and headlamp grounds are not part of the cranking current path. A high-resistance cable would cause the opposite pattern, with lower current and a slow crank. Measure draw before replacing parts.

103. B — A correct lock is confirmed by the locking handle being in the fully closed position and the jaws wrapped around the kingpin with no visible gap, followed by a tug test. Landing gear position, brake line routing and idle speed do not show lock status. Then perform a tug test to confirm the lock.

104. A — If pressure drops and no leak is visible, coolant is escaping internally, and milky oil confirms coolant has entered the lubrication system. Likely sources include a head gasket, liner seal or oil cooler. A weak cap vacuum spring, slipping belt and early thermostat do not let coolant enter the oil.

105. A — Moisture and debris in the evaporator case and a clogged filter promote odour. Cleaning the case and drain and replacing the cabin filter addresses the cause. Compressor oil, tire pressure and engine oil filter are unrelated. Moisture breeds mold and bacteria on the coil, so cleaning the case and drain removes the source of odour.

106. C — Automatic slack adjusters should hold stroke without repeated manual adjustment. Manual adjustment is only a temporary correction when the adjuster is faulty, and a stroke that drifts out again points to an internal fault or worn linkage. Compressor pressure and bearing preload do not make the stroke grow. Repeated manual adjusting only hides the real fault.

107. D — A joint that will not take grease and squeaks at low speed has dry or seized needle bearings, often from corrosion or a blocked passage. Continued use can overheat it and cause a driveshaft failure, so the joint is replaced. Slip yoke grease, a leaking output seal or a plugged axle breather would not block grease at one joint.

108. C — No current at the heater means the feed is interrupted somewhere upstream. Testing the relay output and the control signal sorts out whether the relay, wiring or ECM command is at fault. The turbocharger, coolant flush and clutch disc are unrelated to the grid heater. This test narrows the fault to the relay, wiring or command.

109. D — The trailer's skid plate rides on the fifth wheel top plate and grease reduces wear and steering effort. Lubricant does not change clamping force, stop kingpin rotation or alter height. Without grease the plates scrub together, wear faster and make turning harder; grease also resists corrosion on both surfaces at scheduled intervals.

110. B — The hub and wheel face are clamped together by the nuts, and friction at that interface helps carry load. Lubricant or heavy paint buildup between the faces reduces that friction and lets the joint relax, which loosens the nuts. Only the stud threads and nut contact faces are treated as the manufacturer directs.

111. A — Many sliders use pins that are retracted by an air-operated or manual mechanism. A lack of air or binding pins from rust or damage stops the release. The reefer pump, kingpin height and A/C filter have no role. Free the pins, lubricate them and fix the air supply so that the slider moves normally and locks securely.

112. A — A hydraulic fan drive speed is controlled by a valve or solenoid that responds to temperature. If it stays at full speed, a stuck valve or a wrong command signal is likely. Axle ratio, hub seals and pedal height have no connection. A valve stuck on or a wrong command holds the fan at full speed.

113. D — Liner protrusion sets the clamp pressure on the head gasket where it seals the liner. If the liner is too low, the gasket is not compressed enough and can leak combustion gases or coolant. This is a base-engine sealing issue, not one of oil pressure, fuel gelling or transmission input shaft wear.

114. B — If the coil does not get voltage, the relay cannot close, so the first test is whether the control signal and ground are present. This separates a coil problem from wiring or a switch fault. Replacing the alternator or batteries is premature, and wheel nuts are unrelated. That separates a coil fault from wiring or switch faults.

115. C — Caging a spring brake removes the mechanical force that holds the vehicle. If the vehicle is not otherwise restrained by chocks or stands, it may roll away. The tool operation does not depend on the engine, drum temperature or trailer line. Wheel chocks and the other brakes hold the unit in place until the repair is finished.

116. A — Oil on lining cannot be cleaned out and will reduce braking. The seal that leaked must be replaced and the hub area cleaned, and the linings must be replaced as an axle set. Cleaning with solvent or replacing only the drum leaves contaminated friction material. Always replace linings as an axle set after contamination.

117. B — A sidewall bulge shows that casing cords have broken from impact, so the remaining tire structure can fail suddenly even though it holds air. Such tires are scrapped and never patched or ground. Moving a damaged tire to another axle or running it at lower pressure only shifts the same risk elsewhere.

118. D — Hybrid and electric trucks still rely on a 12 volt battery to wake the controllers and close the high-voltage contactors. A weak or dead auxiliary battery can prevent ready mode even when the traction pack is charged, so it is tested and charged first. The cooling cap, wheel nuts and air dryer have no effect on startup.

119. C — Thrust bearings control the axial movement of the crankshaft. Prying the shaft and reading the travel with a dial indicator shows how much clearance exists, and too much means the thrust surfaces are worn. Rod bushings, flywheel housing and balancer faults do not change axial crankshaft movement. Gauge readings then confirm the diagnosis before any parts are ordered.

120. B — On a healthy CAN network, the high line rests near 2.5 volts and rises toward 3.5 volts during a dominant bit, while the low line moves in the opposite direction. This is the normal waveform. A short

to battery or ground would show a steady abnormal level instead. Steady abnormal levels would indicate a short instead.

121. A — A cab air spring that leaks cannot hold the cab at ride height, so the ride becomes harsh. Replacing the spring and checking the leveling valve and lines restores normal ride. Blocks mask the problem, and the protection valve and engine mounts are not part of the cab suspension. A new spring restores correct ride height.

122. D — A restricted intake or discharge line reduces compressor output, which is more obvious at slow engine speeds and in cold, thick oil. The clutch bearing, steering pump belt and kingpin wear do not influence how fast the air system builds pressure. Cold oil and a restricted air path lower compressor output most at slow engine speeds, so inspect them.

123. C — Retarders add braking torque through the driveline, which can lock drive wheels on slippery surfaces. Many systems disable the retarder when ABS is active. This is the designed behaviour, not a fault in the cooler, bearing or engine brake solenoid. No repair is needed unless it also fails to apply when ABS is not active.

124. D — Tire pressure rises as the tire warms, so the recommended cold inflation pressure is only valid when the tire is cold. Hot readings run higher and should not be bled down to the cold specification. Raising to maximum and loading status are not the measurement rule. Hot readings run higher and should not be bled down.

125. B — A thermostat that stays open lets coolant flow through the radiator all the time, so the engine takes a long time to reach temperature and may never get fully hot. A stuck-closed thermostat, plugged radiator or weak pump would cause overheating instead of the engine running cool. An overheating engine would point elsewhere, which this truck does not show.

126. C — A diesel-fired heater needs fuel and ignition to start, so the supply, the igniter or glow element and any fault codes are checked first. Brake lining, fifth wheel grease and wheel nut torque have nothing to do with the heater. A burner needs fuel and a spark or glow to light, so check those before other parts.

127. A — A device that draws power constantly will drain the battery during long storage. The correct approach is to feed it from a switched circuit or confirm it has a low-power sleep state. Larger batteries only delay the problem, and the belt and antenna do not cure the draw. Always confirm the unit's standby current after the change.

128. D — Clear, factual and respectful communication builds trust. Explaining what failed, what was done and why, in terms the customer understands, while listening to the concern, resolves most billing disputes. Reading part numbers does not explain value, and refusing to discuss or offering a discount without information leaves the real question unanswered.

129. A — Door counterbalance springs store a lot of energy and can cause serious injury. The manufacturer's procedure uses proper winding tools and stops. Cutting springs, holding them by hand or removing stops is unsafe. Springs under tension can release suddenly and cause serious injury, so use winding bars and follow the maker's steps carefully.

130. B — An accumulator stores energy in the form of compressed gas and fluid, so pressure can remain after the engine is off. The manufacturer's bleed-down procedure must be followed before any lines are opened. Quick opening, heating or hammering are dangerous. Verify the pressure is zero on a gauge before loosening any fitting, since gas pre-charge can remain.

131. C — Rear brakes are usually fed through a relay valve, which speeds up application by supplying air from a nearby reservoir. If that valve is sticking or restricted, rear chambers fill slowly and the rear brakes apply late. Tire tread, belt tension and cab mount stiffness have no effect on application timing.

132. A — Gears contact opposite tooth faces under power and under coast. A whine that occurs only on the coast side points to wear or incorrect setup on that face of the ring and pinion. A brake diaphragm, air tank and clutch fork do not make a noise tied to coast-side gear loading.

133. D — Oil that looks milky has mixed with water, from a leaking seal, cap or vent. The hub oil must be drained and replaced and the seals inspected. Overheated drums and low ratios do not make oil look milky. Find the leak path, drain the oil, replace the seal and refill to the correct level with the specified lubricant.

134. B — High oil temperature points to poor heat removal, and the oil cooler depends on coolant flow to carry heat away. A restricted or leaking cooler, or low coolant flow, can raise oil temperature and affect engine performance. The air dryer, steering gear and fifth wheel are separate systems unrelated to the oil temperature problem.

135. C — A drop that high on a ground path means resistance somewhere between the battery post and the starter or frame. A cable can look clean while corrosion hides under the crimp or at a frame connection. Alternator diodes and injector coils are not in the cranking ground path. Clean and retighten the ground, then repeat the drop test.