

PRACTICE EXAM 5: 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 24-volt circuit on a coach powers a cabin fan motor that has a resistance of 6 ohms. What current does the motor draw?

- A. 4 amperes
- B. 0.25 amperes
- C. 144 amperes
- D. 30 amperes

2. A transit bus engine shows oil pressure of 140 kPa at hot idle and 380 kPa at governed speed. The shop's specification is a minimum of 100 kPa at idle. What does this indicate?

- A. The oil pump is failing at idle
- B. Oil pressure is within specification at both speeds
- C. The pressure relief valve is stuck fully open
- D. The bearings are badly worn

3. A transit bus has excessive free play at the steering wheel. Which should be inspected first before condemning the steering gear?

- A. The air dryer cartridge and purge valve assembly
- B. The alternator drive belt and its idler tensioner

- C. Linkage joints, ball joints, and kingpin bushings
- D. The windshield wiper arms and their linkage pivots

4. A technician checks the air governor on a transit bus. At which pressure range does a typical heavy-duty governor stop the compressor from building more air (cut-out)?

- A. About 140 to 205 kPa (20 to 30 psi)
- B. About 415 to 480 kPa (60 to 70 psi)
- C. About 860 to 930 kPa (125 to 135 psi)
- D. About 1,400 to 1,500 kPa (200 to 220 psi)

5. A motorcoach with a manual transmission has a clutch pedal that has lost all its free play. What is the most likely consequence if this is left uncorrected?

- A. A stronger parking brake holding force at the wheels
- B. Release bearing wear and a slipping clutch
- C. A cooler transmission with a lower oil temperature
- D. Faster compressor buildup after each cold engine start

6. A transit garage technician must work in an inspection pit beneath a bus that has just been fuelled, and a small diesel spill is visible on the pit floor. Which hazard is greatest in the pit?

- A. Lighter-than-air gases rising out of the pit opening
- B. Static discharge from the overhead pit lighting
- C. Excess oxygen from the pit exhaust fan
- D. Heavier-than-air fuel vapour settling in the low space

7. On an air-brake semitrailer, which hose coupling colour normally identifies the emergency (supply) line in Canada?

- A. Red

- B. Blue
- C. Yellow
- D. Black

8. A hydraulic cylinder with an 80 mm bore receives 15 MPa pressure on the cap end. What is the approximate extending force?

- A. 75 kN
- B. 37.7 kN
- C. 150 kN
- D. 12 kN

9. With the ignition off, a technician measures 120 ohms across the CAN high and CAN low pins at the diagnostic connector of a transit bus. What does this suggest?

- A. The bus wiring is normal for a healthy network
- B. Both terminating resistors are shorted together
- C. One terminating resistor is open or missing
- D. The alternator is overcharging the bus network

10. A technician measures a crankshaft main journal with an outside micrometer and finds 0.08 mm of taper along the journal length. The maker allows 0.025 mm. What is the correct action?

- A. Install thicker bearing shells to take up the taper
- B. Polish the journal lightly with fine emery cloth
- C. Reuse the crankshaft and add extra thick oil
- D. Regrind the crankshaft to a standard undersize

11. A coach roof air conditioner has a compressor clutch that cycles on and off every few seconds. The gauges show low pressure on both sides. What is the likely cause?

- A. An overcharged system with far too much refrigerant
- B. A low refrigerant charge from a leak
- C. A clogged cabin air filter restricting airflow only
- D. A weak heater core leaking into the evaporator case

12. A coach has hard steering at low speed along with a whining noise, and the power steering reservoir is low and foamy. What is the most likely cause?

- A. Worn rear brake linings dragging on the drums
- B. A failed thermostat stuck open in the engine
- C. A weak starter motor with worn brushes and a sticking solenoid
- D. Air drawn in from a suction leak or low level

13. A technician removes the compressor discharge line on a coach and finds thick carbon deposits inside it. What is the most likely cause?

- A. Water leaking into the air dryer from the purge line
- B. Low ambient temperature in the winter months
- C. Excess heat or oil carryover from the compressor
- D. A brake chamber diaphragm tear on the rear axle

14. A transit coach shudders on takeoff in first gear, and the clutch disc shows oil staining. What is the most appropriate next step besides replacing the clutch?

- A. Add more clutch pedal free play at the release linkage
- B. Repair the oil leak source, such as a rear main seal
- C. Install a thicker flywheel shim behind the clutch disc
- D. Use a longer pushrod on the brake chamber yoke

15. A coach windshield is replaced using urethane adhesive. What determines when the vehicle may be driven away safely?

- A. The adhesive's safe drive-away time for the conditions
- B. Whenever the glass looks clean on the outer surface
- C. After exactly one hour in all cases of temperature
- D. As soon as the wiper arms are connected again

16. Why should a hydrometer not be used to judge the state of charge of an AGM battery in a coach?

- A. The electrolyte sits in glass mats, not free liquid
- B. AGM electrolyte is not acid and gives false readings
- C. A hydrometer works only above 20 volts of charge
- D. AGM batteries never discharge below full charge

17. A coach engine overheats on long grades, but the radiator cap, belt, and fan all test normal. The upper hose is hot and the lower hose is cool at operating temperature. What is the most likely fault?

- A. A faulty oil pressure sender wire at the block
- B. A weak fuel lift pump starving the injectors
- C. An overfilled windshield washer reservoir tank
- D. A restricted radiator core or a stuck thermostat

18. What is the first step before servicing a high-voltage component on a hybrid transit bus?

- A. Remove the 12-volt lighting fuses and begin work
- B. Follow the maker's disable procedure and verify zero volts
- C. Touch the orange cable to test it with a screwdriver
- D. Raise the tire pressure on the drive axle

19. A technician finds a bus wandering on a straight road. Tires and air pressure are normal. Which alignment angle is most likely incorrect?

- A. Rear axle tag height after the coach is loaded

- B. Parking brake travel at the spring chambers
- C. Caster, which affects directional stability
- D. Engine idle speed at operating temperature

20. The desiccant cartridge on a city bus air dryer is found soaked with oil. Which action addresses the cause as well as the symptom?

- A. Replace only the cartridge and then return to service
- B. Replace it and investigate the compressor for oil
- C. Dry the cartridge in an oven and reuse it
- D. Add alcohol to the supply tank at every shift

21. A hydraulic clutch on a bus has a spongy pedal that sinks slowly to the floor. The master cylinder fluid level is normal. What is the most likely fix?

- A. Replace the transmission fluid and the filter
- B. Tighten the flywheel bolts to specification
- C. Bleed air and check the slave cylinder for leaks
- D. Adjust the parking brake cable at the lever

22. A technician tests the starter circuit on a transit bus with the engine cranking and measures 0.9 volts of drop across the negative battery cable from the battery post to the engine block. What is the interpretation?

- A. The ground path has excessive resistance and needs repair
- B. The cable is in good condition
- C. The starter is overcharging the battery
- D. The battery is fully charged and the drop is irrelevant

23. What is the main purpose of a pressure-type radiator cap on a heavy-duty cooling system?

- A. To stop the coolant from ever expanding
- B. To filter fine debris out of the coolant
- C. To lower coolant temperature below ambient air
- D. To raise the coolant boiling point by pressurizing

24. A motorcoach technician needs to loosen a rusted exhaust clamp bolt using a six-point impact socket on an air impact wrench. Which choice is correct?

- A. Use chrome hand sockets, since they cope with high shock
- B. Use a torque wrench handle to break the bolt loose
- C. Use a flare-nut wrench with the impact wrench
- D. Use impact-rated sockets and extensions, not chrome hand sockets

25. The left turn signal on a trailer does not work, but the right signal and the marker lamps do. The bulb is good. What should be checked first?

- A. The air dryer cartridge and purge cycle
- B. The connector terminal and wiring for that signal
- C. The fifth wheel jaws and release handle
- D. The wheel bearings and hub seals

26. A hydraulic system on a bus fan drive is noisy and the fluid appears foamy in the reservoir. What is the likely cause?

- A. Excess fluid temperature from a blocked cooler and a fouled filter
- B. A worn wiper motor drawing on the system
- C. Air drawn in from a suction leak or low fluid
- D. An under-inflated front tire loading the pump

27. A coach has steer tires with feathered edges across the tread, with ribs smooth to the touch in one direction. Which cause is most likely?

- A. Incorrect toe setting
- B. Over-inflated trailer tires
- C. A cracked windshield
- D. A weak parking brake

28. A coach has a parasitic draw of 450 mA that stays constant 40 minutes after the key is switched off and all modules should be asleep. What is the best next step?

- A. Replace the batteries immediately and retest
- B. Replace the alternator and recheck the draw
- C. Add a larger battery bank to cover the draw
- D. Pull fuses singly while watching the meter

29. On a motorcoach, at what air pressure range should the dash parking-brake valve typically pop out automatically as the system pressure falls?

- A. About 275 to 345 kPa (40 to 50 psi)
- B. About 690 to 760 kPa (100 to 110 psi)
- C. About 520 to 585 kPa (75 to 85 psi)
- D. About 35 to 70 kPa (5 to 10 psi)

30. A coach transmission output yoke seal leaks again a week after replacement, and the yoke shows a worn groove where the seal lip rides. What is the correct repair?

- A. Fill with thicker gear oil to slow the leak
- B. Fit a wear sleeve or replace the yoke
- C. Apply sealant to the new seal lip
- D. Raise breather pressure to hold the oil in

31. A technician finds a milky, light-brown substance on the underside of an oil fill cap on a bus engine, with coolant level dropping slowly. What should be checked first?

- A. Oil filter media for metal debris and sludge
- B. Fuel injector spray patterns for correct atomization quality
- C. A pressure test and a combustion gas test
- D. Power steering fluid for aeration and foaming

32. Why must an air conditioning system be evacuated with a vacuum pump before recharging?

- A. Add oil to the compressor through the service port
- B. Remove moisture and air and confirm vacuum holds
- C. Heat the refrigerant so that it flows more easily
- D. Clean the condenser fins by drawing a strong vacuum

33. A technician measures 1.4 volts AC at the output terminal of a running alternator on a transit bus with the meter on AC volts. What does this indicate?

- A. A failed rectifier diode or an open winding
- B. A normal charging output for a healthy running unit
- C. A dead cell in one of the two batteries
- D. A worn drive belt slipping under very high load

34. A technician finds cupped wear around the steer tire tread of a coach, with scalloped patches spaced evenly. What is the most likely cause?

- A. Too much toe-in on the steer axle
- B. An overcharged alternator on the engine
- C. A dirty cabin air filter and blower motor
- D. Worn shocks or a wheel imbalance causing bounce

35. A coach turbocharger shows oil on the compressor-side housing and blue smoke at idle. The air filter restriction gauge reads normal. Which cause is most consistent?

- A. A leaking fuel return line at the head
- B. A stuck-open thermostat holding the engine cool
- C. A worn compressor-end seal or restricted oil drain
- D. A weak starter solenoid with worn contacts

36. A transit bus has a clamp-type Type 24 brake chamber on the rear axle. With the brakes fully applied, the pushrod stroke measures 50 mm. What does this indicate?

- A. Out of adjustment, over the 44 mm limit
- B. Normal stroke for any chamber size in service
- C. Within limits because it is a Type 30
- D. Invalid because air pressure was too low

37. A motorcoach with a range-shift transmission will not shift out of low range, but all gears in low range work normally. What should be checked first?

- A. The compressor governor setting for cut-in and cut-out
- B. The engine oil filter and its bypass valve
- C. The air supply and valve for the range cylinder
- D. The tail shaft yoke and slip spline

38. A coach alternator output reads 15.9 volts at idle with no loads and a good battery, and the battery is gassing. Which part is most likely at fault?

- A. The starter motor
- B. The voltage regulator
- C. The thermostat
- D. The parking brake valve

39. A transit bus driver reports a rattle and vibration in the cab at idle, and inspection shows cracked rubber cab mounts. What is the correct action?

- A. Add extra grease to all the rubber mounts
- B. Tighten the mounts hard against the steel frame
- C. Cover the cracks with tape and monitor them
- D. Replace the mounts and check the brackets

40. A transit bus steer tire shows wear on both outer and inner shoulders while the centre is hardly worn. What does this indicate?

- A. Over-inflation
- B. Chronic underinflation
- C. Perfect alignment
- D. A stuck thermostat

41. What does a boost leak between the charge air cooler and the intake manifold typically cause on a turbocharged diesel?

- A. High power with white smoke at warm idle
- B. A lower coolant temperature at the dash gauge
- C. Higher oil pressure at full governed engine speed
- D. Low power and black smoke under load

42. A technician is welding a cracked bracket on a coach frame near the rear electronics bay. What should be done first to protect the vehicle electronics?

- A. Leave the vehicle powered so the modules stay awake
- B. Place the ground clamp on the rear bumper only
- C. Disconnect the battery cables and follow the maker's module precautions
- D. Wrap the harness in plastic film and keep the keys on

43. A technician cranks the landing gear of a semitrailer during a hookup. Which practice is correct?

- A. Raise it fully and secure the crank handle
- B. Leave it half down while driving to save time
- C. Use it to lift the loaded trailer
- D. Lubricate it only with water

44. A hydraulic pump whines loudly and its output is poor. The suction filter is heavily clogged. What condition is occurring?

- A. Hydrolock in the diesel engine cylinders
- B. Wheel hop from a loose suspension
- C. Compressor unloading at the air governor
- D. Cavitation from restricted inlet flow

45. An automatic slack adjuster on a coach drive axle repeatedly reads out of stroke after being manually reset. What is the best next step?

- A. Keep resetting it manually at each inspection
- B. Replace the air governor and test again
- C. Inspect for a worn part or adjuster fault
- D. Remove the adjuster and fit a longer pushrod

46. A technician fills a manual transmission with a gear oil that is not approved by the transmission manufacturer because it is cheaper. What is the likely result?

- A. Reduced protection, poor shifting, and early wear
- B. Longer service life at a lower cost
- C. Higher horsepower from lower friction oil
- D. Better fuel economy guaranteed on every trip

47. A bus starter cranks slowly, and a voltage drop test shows 1.1 volts across the starter solenoid battery terminal to the motor terminal while cranking. What does this indicate?

- A. A good solenoid with normal clean contacts
- B. Worn solenoid contacts with high resistance
- C. A weak fuel pump starving the injectors
- D. A faulty glow plug in one cylinder

48. A diesel particulate filter on a transit bus has a high differential pressure reading after a regeneration cycle was interrupted several times. Which action is the most appropriate next?

- A. Drill out the filter substrate for airflow
- B. Increase the injection timing permanently to burn soot
- C. Run a parked regeneration per the maker's procedure
- D. Replace the DEF with plain tap water

49. A coach A/C shows high pressure on both gauge sides with warm air from the vents. The condenser fins look packed with debris. What should be done?

- A. Clean the condenser and check fan operation
- B. Add more refrigerant until pressures drop
- C. Replace the evaporator core right away
- D. Remove the expansion valve and bypass it

50. What is the maximum recommended diameter difference between dual tires on the same wheel position to keep load shared properly?

- A. About 25 mm (1 inch)
- B. About 6 mm (1/4 inch)
- C. About 50 mm (2 inches)
- D. No limit at all

51. Why do friction brake linings on a hybrid bus often last longer than on a conventional bus?

- A. The wheels weigh far less than on a diesel bus
- B. Hybrid buses seldom use friction brakes at all
- C. The linings are made of solid metal only
- D. Regenerative braking removes part of the load

52. On an air disc brake, the inner brake pad is worn nearly to its limit while the outer pad is almost new. Which cause is most likely?

- A. A leaking air dryer purge valve
- B. An overfilled wheel hub
- C. A faulty alternator regulator
- D. Seized caliper slide pins or bushings

53. A technician performs a fluid level check on an Allison automatic transmission in a transit bus. Which condition applies for a hot check?

- A. At operating temperature, idling, in neutral
- B. With the engine off and the fluid cold
- C. While driving at a steady highway speed
- D. In reverse with the parking brake released

54. A coach starts to click rapidly when the key is turned and the dash lights dim. The battery reads 11.2 volts at rest. What is the most likely cause?

- A. A failed air compressor unloader valve
- B. A discharged battery that cannot hold voltage
- C. A leaking radiator hose at the clamp
- D. A stuck throttle pedal cable at the bracket

55. A diesel exhaust fluid quality sensor on a coach reports low urea concentration. A refractometer reading shows 18 percent. What should the technician do?

- A. Top off the tank with more distilled water
- B. Disable the quality sensor in the software
- C. Drain, flush, and refill with fresh 32.5 percent DEF
- D. Add a small amount of antifreeze to the tank

56. What is the correct tightening method for the wheel nuts on a hub-piloted coach wheel?

- A. Clockwise around the circle at full torque
- B. Impact gun at maximum without a torque wrench
- C. Hand tight only until the wheel seats
- D. A star pattern in stages, then a retorque

57. A technician wants to measure the running current of a coach cabin fan circuit without cutting any wires. Which instrument is correct?

- A. An ohmmeter connected across the circuit fuse
- B. A voltmeter placed in series with the fan
- C. An inductive clamp-on DC ammeter around the wire
- D. A continuity light clipped to the battery post

58. A fleet shop receives a drum of coolant concentrate with no label on the drum after it was decanted into an unmarked pail. Under WHMIS 2015, what is required for the pail?

- A. A workplace label with name and handling information
- B. No label, because the drum label covers it
- C. A handwritten date on the lid only
- D. A supplier label copied from another product

59. A technician inspects a semitrailer kingpin and finds visible wear that exceeds the maker's limit. What is the correct action?

- A. Grind the pin smaller to remove wear
- B. Replace the kingpin or upper coupler plate
- C. Add grease and continue in service
- D. Weld a bead around the worn pin

60. After a hydraulic hose failure, a technician flushes the system and fits a new filter. Why is this important?

- A. It lowers the pressure rating of the hoses
- B. It increases the cabin heat output in winter
- C. Contamination can damage pumps, valves, and cylinders
- D. It makes the pump run quieter at idle

61. A wheel speed sensor on a coach front axle has been pushed back in its bore, leaving a large gap to the tone ring. Which symptom is the most likely?

- A. A higher parking brake release pressure at the dash
- B. An ABS fault for an erratic low-speed signal
- C. Slow compressor buildup after every engine start
- D. A louder exhaust brake when idling

62. A city bus automatic transmission shifts late and smells burnt. The fluid is dark. Which cause is most consistent?

- A. Low windshield washer fluid in the tank
- B. A leaking radiator cap and coolant loss
- C. Too little brake pedal travel at rest
- D. Overheated fluid and worn clutch plates

63. On a common-rail diesel engine, hard starting is noted and rail pressure stays at 15 MPa during cranking, well below the specified minimum. What is the most likely first check?

- A. Low-pressure fuel supply, filters, and aeration
- B. The cabin air filter and blower motor
- C. The alternator output at engine idle speed
- D. The steer tire pressures when checked cold

64. A tire pressure monitoring system on a coach shows low pressure on one tire early on a very cold morning in January. What should the technician do?

- A. Ignore the warning because the morning is cold
- B. Fill the tire to maximum sidewall pressure
- C. Verify with a gauge, then set cold pressure
- D. Replace the sensor immediately without checking

65. A 15-amp fuse for a bus mirror heater keeps blowing. A technician installs a 30-amp fuse and the mirror wiring becomes hot. What is the correct approach?

- A. Fit the specified fuse and find the short
- B. Keep the 30-amp fuse and add a relay
- C. Wrap the wiring in tape and leave it
- D. Disconnect the mirror ground and drive on

66. A technician on a fuel system with a water-in-fuel sensor warning drains the primary filter bowl and finds a lot of water. What is the best additional step?

- A. Add an alcohol dryer to the tank each shift
- B. Find the water source and replace the filters
- C. Raise the idle speed permanently
- D. Disconnect the sensor and keep driving

67. The ABS warning lamp on a transit bus stays on after the engine starts and a scan tool shows a wheel sensor circuit open. What should be done first?

- A. Replace the ABS modulator valve at once
- B. Drain the air tanks and retest the lamp
- C. Replace both axle brake linings
- D. Check the sensor connector and harness first

68. A coach automatic transmission runs at high engine speed at highway cruise, and its fluid temperature rises. What could explain this?

- A. A stuck wheelchair ramp interlock on the coach
- B. A weak windshield wiper motor and linkage
- C. A torque converter lockup clutch not engaging
- D. A fully charged battery set

69. A bus passenger door closes slowly and does not fully latch in cold weather. The door cylinder is air operated. What is the best first check?

- A. Air supply, speed valves, and binding linkage
- B. Alternator output at the battery terminals
- C. Tire tread depth on the drive axle tires
- D. Engine oil level in the sump pan

70. Water drips onto the floor inside a transit bus near the roof evaporator unit. What is the most likely cause?

- A. A low windshield washer level
- B. A blocked evaporator drain
- C. A weak alternator
- D. A loose wheel nut

71. Which splice method is best for a repair in an exposed engine bay harness on a coach?

- A. Twisted wires covered with electrical tape
- B. A wire nut wrapped with tape over it
- C. A crimped splice sealed with adhesive heat shrink
- D. Two wires hooked together and bent flat

72. A bus with an air suspension sits low on the right rear corner at rest, while the compressor and tanks are fine. What is the most likely cause?

- A. A worn steering gear with a loose pitman arm joint
- B. A weak alternator and a loose drive belt
- C. A worn clutch disc and release bearing
- D. A faulty height valve or linkage on that side

73. A bus engine control module stores a fault code for coolant temperature sensor voltage low, with a reading of 0.1 V. What should be tested first?

- A. The fuel pump for low delivery pressure
- B. The wiring for a short, then the sensor
- C. The turbo actuator for correct travel
- D. The crankcase vent for excess pressure

74. During a leakage test on a single-unit coach with the brakes applied and the engine off, the gauge falls 55 kPa in one minute. What is the correct conclusion?

- A. Leakage is excessive and must be found and repaired
- B. The loss is normal for any air brake system
- C. The loss is acceptable because the engine is off
- D. The compressor must be replaced at once

75. After fitting a new clutch on a vehicle with an automated manual transmission, what must the technician do before road testing?

- A. Disconnect all batteries overnight to reset the module
- B. Adjust the pedal free play by hand
- C. Install a longer shift lever on the transmission
- D. Run the touch-point learn with the scan tool

76. A technician converts a service-manual torque specification of 250 N·m to pound-feet to use an imperial wrench. What is the closest value?

- A. 184 lb-ft
- B. 339 lb-ft
- C. 112 lb-ft
- D. 221 lb-ft

77. A technician checks a sliding tandem on a semitrailer after repositioning the axles. What must be confirmed?

- A. The tires on one side are warmer than the other
- B. Every locking pin is fully engaged on both sides
- C. The air dryer has been drained that morning
- D. The fuel tank is full before departure

78. A wheelchair lift hydraulic hose on a transit bus has a hardened cover with cracks and exposed wire braid. What is the correct action?

- A. Wrap the braid with electrical tape
- B. Coat the cracks with sealant and continue
- C. Replace the hose assembly
- D. Shorten the hose and refit the end

79. A bus headlamp on one side is dim, and the lamp voltage reads 10.4 volts while the battery reads 12.6 volts with the lights on. Where should the technician look?

- A. At the engine coolant temperature sensor circuit
- B. At the air dryer purge valve and heater
- C. At the transmission fluid level in the sump
- D. In the supply or ground path to that lamp

80. How can a technician quickly judge whether a shock absorber on a coach is worn out?

- A. Check for leaks and test damping resistance
- B. Measure the tire pressure on the steer axle
- C. Check the oil in the transmission
- D. Look at the brake lamp bulbs

81. A technician is asked what an exhaust brake does on a coach engine. Which description is correct?

- A. It sprays coolant into the exhaust stream
- B. It shuts off all fuel and idles the engine
- C. It restricts exhaust flow to create back pressure
- D. It increases boost by closing the intake

82. After LED marker lamps replace incandescent bulbs on a coach, the turn signals flash twice as fast. What is the most appropriate correction?

- A. Replace the battery with a larger unit
- B. Increase the alternator output voltage setting
- C. Replace the turn signal switch with thicker wire
- D. Install an LED-compatible flasher or load resistors

83. Air escapes continuously from the vent hole on the parking brake end of a spring brake chamber while the park brake is released. What is the likely fault?

- A. A worn S-cam bushing on the axle

- B. A ruptured spring brake diaphragm
- C. A restricted air filter at the inlet
- D. A weak wheel bearing preload setting

84. A coach has a driveline vibration that appears only between 90 and 100 km/h after a new universal joint was fitted. What should be checked first?

- A. The engine oil level and filter
- B. The windshield washer pump and motor
- C. Yoke phasing and driveshaft balance
- D. The cabin air filter and blower

85. A battery electric coach has a pack voltage of 650 V and a capacity of 210 Ah. What is the approximate energy stored in the pack?

- A. 13.65 kWh
- B. 310 kWh
- C. 86.7 kWh
- D. 136.5 kWh

86. A leaf spring pack on a drive axle has a broken centre bolt, and the axle has shifted slightly forward on one side. What is the correct repair?

- A. Weld the axle seat to the spring pack
- B. Replace the centre bolt, then check alignment
- C. Leave it and just watch the tire wear
- D. Drill the spring to move the bolt hole

87. A jake-style compression release brake is weak on cylinders three and four of a coach engine. Oil pressure is normal. What should be inspected first?

- A. Housing lash and the control solenoid
- B. The cabin heater core and blower motor
- C. The windshield wiper motor linkage
- D. The air compressor governor valve

88. Cabin heat in a coach is poor even though the engine reaches normal temperature. One heater hose is hot and the other is cool. What is the probable cause?

- A. A restricted heater core or stuck coolant valve
- B. Low tire pressure on the steer axle
- C. A worn clutch disc and release bearing
- D. An air leak in a rear brake line

89. A transit bus shows several network faults for lost communication with different modules at once, and the CAN wires read shorted together with the ignition off. What is the most likely issue?

- A. Several unrelated modules failed at the same moment
- B. The air dryer purge valve has failed
- C. The coolant level is low in the reservoir
- D. CAN high and low shorted on the backbone

90. A technician measures a brake drum and finds it at 419.5 mm. The drum is stamped with a maximum diameter of 419.1 mm. What should be done?

- A. Turn the drum a little more to clean the surface
- B. Replace the drum, since it is beyond its stamped limit
- C. Reinstall the drum with thicker linings
- D. Use the drum on the rear axle only

91. A coach driveshaft center support bearing has a cracked rubber cushion and the vehicle vibrates under load. What is the correct repair?

- A. Fill the cracks with rubber sealant and drive on
- B. Tighten the bracket bolts only
- C. Replace the bearing assembly and check alignment
- D. Remove the cushion and keep driving

92. An apprentice at a transit garage keeps skipping the wheel chocks when raising buses on a hoist. As the mentoring journey person, which response is best?

- A. Ignore it, since the hoist locks hold the bus
- B. Pause, explain the hazard, and watch a correct redo
- C. Chock the wheels yourself without any comment
- D. Reassign the apprentice to parts work permanently

93. A refrigerated trailer unit fails to hold set temperature, and the evaporator coil is covered with heavy frost. What is the most likely issue?

- A. A burned-out turn signal lamp on the rear
- B. A low windshield washer level
- C. A defrost fault or restricted coil airflow
- D. A leaking brake chamber diaphragm

94. How is a hydraulic relief valve pressure setting properly checked on a bus system?

- A. Install a test gauge and adjust while watching
- B. Listen to the pump and adjust by sound
- C. Feel the hose for heat and vibration
- D. Judge the setting by the reservoir fluid colour

95. What is the main reason to prime a fuel system after replacing a primary fuel filter on a diesel engine?

- A. To raise the cetane number of the fuel
- B. To warm the coolant before the next start
- C. To lubricate the starter motor bearings
- D. To purge air so injection keeps its prime

96. A technician checks kingpin vertical play on a steer axle with the axle supported and finds more than specified. What does this indicate?

- A. A defective alternator regulator and sensing wire
- B. Too much transmission fluid in the case
- C. A cracked windshield pillar
- D. A worn thrust bearing or shim stack

97. A driver's seat belt retractor on a coach has frayed webbing near the buckle. What is the correct action?

- A. Sew the frayed area closed
- B. Cover it with electrical tape
- C. Replace the belt assembly
- D. Cut the frayed part off

98. A scan tool displays SPN 168 with FMI 3 on a coach. What does the failure mode identifier mean?

- A. Voltage above normal or shorted to a high source
- B. Voltage below normal or shorted to a low source
- C. Data erratic, intermittent, or incorrect
- D. Current below normal or open circuit

99. A technician replaces worn friction linings on one wheel of a transit bus rear axle. Which practice is correct?

- A. Replace only the worn side and leave the other
- B. Replace linings on both ends as an axle set
- C. Mix different lining materials side to side
- D. Replace linings only on the heavier side

100. When setting pinion bearing preload in a drive axle carrier, how is correct preload verified?

- A. Measure pinion rotating torque with an inch-pound wrench
- B. Feel for end play with your fingers
- C. Count the turns of the carrier bolts
- D. Measure the wheel nut torque after a run

101. A transit bus engine is slow to build oil pressure on a cold start, then drops to 70 kPa at hot idle, below the 100 kPa minimum. Oil level is correct. Which cause is most likely?

- A. An over-tight serpentine belt on the pulleys
- B. Excess bearing clearance or a worn oil pump
- C. A dirty cabin air filter and blower
- D. A worn steer axle tire and rim

102. A technician monitors a pulse-width modulated solenoid with a digital multimeter in a bus transmission and sees a steady 7 volts. What does the reading represent?

- A. A fixed battery voltage of 12 volts
- B. A faulty ground at the solenoid
- C. The average voltage from the duty cycle
- D. The peak voltage of the switched circuit

103. A crack is found in the web of a coach frame rail near a crossmember. Which repair practice is correct?

- A. Drill the top and bottom flanges for a quick fix
- B. Weld across the flange without preparation
- C. Ignore it until it grows
- D. Follow the manufacturer's repair procedure, which may use reinforcement plates

104. When replacing a thermostat in a heavy-duty engine, what is the correct installation practice?

- A. Remove the bleed hole to speed warm-up
- B. Orient it correctly and use a new seal
- C. Install it upside-down for more flow
- D. Reuse the old gasket to save time

105. A technician must top up compressor oil in a vehicle with an R-134a system. Which oil type is correct?

- A. PAG oil of the specified viscosity
- B. Mineral engine oil of any grade
- C. Automatic transmission fluid from the shop
- D. Diesel fuel mixed with refrigerant oil

106. The rear brakes on a motorcoach release slowly after the pedal is lifted. The service chambers and slack adjusters are within limits. Which component should be inspected next?

- A. The fuel lift pump and its strainer
- B. The alternator belt and its tensioner
- C. The cabin air filter housing and ducts
- D. The relay valve exhaust and control signal

107. On a drive axle, a gear tooth contact pattern check shows the pattern at the extreme heel on the drive side. What does the technician do?

- A. Add heavier gear oil to the carrier
- B. Increase tire pressure on the drive axle
- C. Adjust pinion depth and ring gear position
- D. Replace the wheel studs on that axle

108. Which tool is most suitable for catching a brief intermittent dropout in a wheel speed sensor signal on a moving coach?

- A. A lab scope or graphing scan tool
- B. A simple test light with a probe
- C. A battery hydrometer and a charger
- D. A dial tire gauge on the stem

109. A technician replaces a broken wheel stud on a coach drive axle. What other check is important?

- A. Change the engine oil filter as well
- B. Inspect adjacent studs, nuts, and stud holes
- C. Replace the windshield wipers and arms
- D. Re-grease the air compressor drive

110. Which fire extinguisher class is intended for an energized electrical fire in a bus charging cabinet?

- A. Class A
- B. Class D
- C. Class K
- D. Class C

111. The ABS lamp on a trailer stays on after the tractor is connected, and the tractor ABS works properly. What is the best first check?

- A. The tractor air dryer cartridge and purge heater

- B. The trailer brake lining colour and wear
- C. Trailer ABS power and ground at the connector
- D. The cab air filter housing and ducts

112. A hydraulic fan drive on a coach is running hot and fan speed is erratic. The oil cooler is blocked externally by debris. What is the best action?

- A. Replace the engine oil and its filter
- B. Replace the cabin air filter element
- C. Clean the cooler and check fluid level
- D. Add air pressure to the tires

113. A technician checks a coolant sample using a refractometer and finds protection to only minus 12 degrees Celsius in a bus operating in winter. What is the correct action?

- A. Correct the mix to the needed protection
- B. Add plain tap water for better cooling
- C. Leave it, since coolant never freezes
- D. Add salt to the radiator to lower freezing

114. A bus is plugged into a 120-volt block heater cord overnight in winter and the building ground fault breaker trips every time. What is the best first check?

- A. The brake chamber diaphragm and return spring
- B. The engine oil level and filter
- C. The windshield wiper fuse and relay
- D. The cord and element for ground leakage

115. What is the function of a quick release valve in an air brake line on a transit bus?

- A. To raise pressure above the governor setting

- B. To vent chamber air locally for faster release
- C. To regulate the compressor loading cycle
- D. To dry the air before it reaches the tanks

116. A technician finds a drive axle breather plugged with dirt and oil seeping past the wheel-end seals. What is the likely connection?

- A. Heat expansion raised internal pressure and pushed oil out
- B. Cold gear oil flowing too slowly past the seal
- C. Thin oil lubricating the seal lips too well
- D. A loose axle shaft spline allowing leakage

117. A coach pulls slightly to one side on a straight road, and the tires on the rear axle track to the left of the front tires. What is this condition called?

- A. Cupping from worn shock absorbers on the axle
- B. Hydroplaning on a wet road surface
- C. Cavitation at the pump inlet port
- D. Dog tracking from rear axle misalignment

118. A high-voltage isolation fault is reported on an electric bus, with insulation resistance below the minimum threshold. What should the technician do?

- A. Clear the stored fault and continue operating the bus
- B. Find and repair the leak path before service
- C. Increase the charge rate to compensate
- D. Disable the warning lamp for the shift

119. A coach engine uses a lot of oil, but there is no external leak and no coolant loss. A compression test shows normal readings. Which fault is most consistent?

- A. A leaking water pump seal at the housing
- B. A damaged radiator cap spring and seal
- C. Worn valve stem seals or oil control rings
- D. A cracked exhaust manifold bolt at the head

120. A dash voltmeter on a coach reads 12.1 volts with the engine running at fast idle. A meter at the battery reads 14.1 volts. What is the most likely cause?

- A. A resistive gauge feed or ground
- B. An undercharging alternator at idle
- C. A weak starter motor under load
- D. A failing thermostat in the housing

121. A technician finds water leaking into a motorcoach cab around the door during rain, and the weatherstrip is torn. What is the proper repair?

- A. Add silicone to the floor pan only
- B. Replace the seal and verify door alignment
- C. Plug the body drain holes
- D. Raise the tire pressure on the coach

122. A bus pulls to the left during moderate brake applications. Which fault matches this symptom?

- A. Oil-soaked linings on the left front brake
- B. A weak governor on the compressor
- C. An early-opening thermostat
- D. Oil-soaked linings on the right front brake

123. A coach has a top gear ratio of 0.78, a drive axle ratio of 3.36, and a tire rolling circumference of 3.27 m. What is the road speed at an engine speed of 1,300 rpm?

- A. 121 km/h
- B. 75 km/h
- C. 97 km/h
- D. 106 km/h

124. A technician couples a tractor to a semitrailer and wants to verify the fifth wheel locked correctly. What is the best check?

- A. Check the jaws visually, then tug test
- B. Rely on hearing a click from the coupler only
- C. Check that the trailer lights work
- D. Spin the wheels in reverse to test it

125. A technician measures cylinder bore taper and out-of-round on a heavy-duty engine and finds both beyond limits. What is the usual repair?

- A. Install thicker head gaskets on the block
- B. Replace only the piston rings and reuse the bore
- C. Bore and hone to oversize or install new sleeves
- D. Polish the bore with steel wool

126. Who may recover or recharge refrigerant in a heavy-duty vehicle air conditioning system in Canada?

- A. Anyone who can read the service manual
- B. The driver while stopped on the road
- C. Only a person with a welding ticket
- D. A certified person using recovery equipment

127. A technician must identify which component sends an ignition-on signal to a transit bus electronic module. How should the wiring diagram be used?

- A. Guess the pin from nearby wire colours
- B. Trace the circuit from source to the pin
- C. Use only the wire colour in the harness
- D. Probe every pin with a test light

128. A technician notes that a bearing seal installed on a hub leaks within a day. The seal lip was pressed in with a flat hammer blow on the seal edge. What is the most likely cause?

- A. The seal was cocked by improper installation
- B. The grease was an NLGI 2 product
- C. The hub bearing preload was too light
- D. The wheel studs were slightly long

129. A technician drains the trailer air reservoir at the end of the day in winter, and a lot of water comes out. What does this suggest about the tractor?

- A. The trailer has too much grease on the landing gear
- B. The tires are overfilled
- C. The tractor dryer is not removing moisture
- D. The fuel is contaminated

130. A wheelchair lift cylinder on a transit bus slowly drops when the platform is raised and the control valve is closed. What is the likely cause?

- A. Low coolant level in the system
- B. A worn brake lining on the bus
- C. A loose wiper blade on the glass
- D. Internal leakage past the piston seal

131. A low-air warning switch on a coach is tested by draining a service tank slowly. The warning only sounds at 280 kPa. What is the correct conclusion?

- A. The switch is out of specification
- B. The switch is correct since it did sound
- C. The compressor governor is faulty and cutting in late
- D. The parking brake valve needs adjusting

132. A hydraulic driveline retarder on a coach gives weak braking when hot. The fluid level is correct. Which component should be checked?

- A. The wiper arms and their linkage pivots
- B. The retarder heat exchanger flow
- C. The seat belt retractor
- D. The door seal and drain

133. A technician finds oil seeping from the outer wheel seal of an oil-lubricated steer hub on a transit bus, and the hub oil level is above the fill line. What is the most likely cause of the leak?

- A. Under-inflated steer tires on the front axle
- B. A weak brake chamber return spring
- C. A loose wiper arm on the windshield
- D. Overfilled hub oil forced past the seal

134. A technician replaces a failed radiator hose clamp on a coach and notices the lower hose has collapsed on its inner wall while the engine runs at speed. What is the most likely cause?

- A. Too much antifreeze in the coolant mixture
- B. A radiator cap rated too high
- C. A weak or missing internal hose spring
- D. A thermostat opening too early

135. A battery disconnect switch on a coach is turned off for storage, and a few modules lose their stored memory. What is the usual advice for long storage?

- A. Never disconnect any battery on a motorcoach
- B. Expect resets and follow relearn procedures
- C. Replace all modules after long storage
- D. Disconnect only the alternator

Practice Exam 5: Answer Key and Explanations

1. **A** — Ohm's law gives current as voltage divided by resistance, so 24 volts divided by 6 ohms equals 4 amperes. The 0.25 value comes from dividing in the wrong order, 144 comes from multiplying instead of dividing, and 30 would come from adding the numbers, which has no electrical meaning. Always check units and arrangement.
2. **B** — Hot idle pressure of 140 kPa is above the 100 kPa minimum, and pressure rising to 380 kPa at higher speed is normal as pump output increases. Failing pumps, stuck-open relief valves, and badly worn bearings all lower pressure, particularly at hot idle, so none of those causes is supported by these readings.
3. **C** — Steering wheel play can come from the gear but often comes from worn tie rod ends, drag link joints, or kingpin and ball joint wear, so these are checked first because they are cheaper to confirm. The air dryer, alternator belt, and wipers do not add steering wheel free play.
4. **C** — Most heavy-duty air systems cut out near 860 to 930 kPa and cut in roughly 70 to 100 kPa lower, giving enough stored air for braking. A cut-out near 140 or 415 kPa would never fill the tanks adequately, and 1,400 kPa is far above the design pressure of brake components.
5. **B** — With no free play the release bearing rides against the pressure plate fingers all the time, so it wears out and can reduce clamp load, allowing the clutch to slip. Parking brake strength, transmission temperature, and compressor buildup are not improved by removing free play, so those choices describe unrelated effects.
6. **D** — Fuel vapour is heavier than air, so it pools in a pit where a spark or poor ventilation turns a small spill into a fire or breathing hazard. Clean the spill, ventilate the pit, and remove ignition sources. The gases-rising option fails because vapour sinks, and a ventilation fan removes vapour rather than adding dangerous oxygen.
7. **A** — The emergency or supply line uses a red glad hand and supplies air that charges the trailer reservoir and releases the spring brakes, while the service line uses a blue glad hand to carry brake application signals. Yellow and black are not standard colour codes for these air lines. Mixing them up would apply or release brakes incorrectly.
8. **A** — Force equals pressure times piston area, and an 80 mm bore has an area of about 0.005027 square metres, so 15 million pascals gives roughly 75 kN. Using the radius incorrectly halves the

answer, doubling it overstates the force, and the 12 kN value results from unit mistakes. Check that the bore is converted to metres first.

9. C — A healthy J1939 backbone reads about 60 ohms because two 120 ohm resistors sit in parallel at the ends. A reading of 120 ohms means only one resistor is in the circuit, so the other is open or missing. Both shorted would read near zero, and alternator output is irrelevant.

10. D — Taper beyond the limit concentrates load at one end of the bearing and causes failure, so the journal is out of specification and the crankshaft must be reground to an approved undersize with matching bearings. Thicker shells and polishing cannot correct geometry, and extra oil does not fix an uneven bearing contact.

11. B — The low-pressure switch opens and closes rapidly when charge is low, so the clutch short-cycles, and leak detection is the next step. An overcharge would give high pressures, a cabin filter affects airflow rather than clutch cycling, and the heater core is a separate system. Recharge only after repairing the leak and evacuating the system.

12. D — Foamy, low fluid shows air is being drawn into the pump, usually from a leak on the suction side or a low level, which makes the pump whine and reduces assist. Brake linings, a thermostat, and the starter do not influence power steering fluid condition or noise. Top up with the specified fluid and bleed after repair.

13. C — Carbon in the discharge line forms when hot compressor oil vapour bakes onto the metal, usually from oil passing the rings or unloader and from high discharge temperature. Water leakage at the dryer, cold weather, and a torn brake chamber diaphragm do not produce baked carbon in the discharge line.

14. B — Oil on the facing causes grabbing and chatter, so replacing the clutch without fixing the leak, often at the rear main seal or transmission input seal, will ruin the new disc. Pedal free play does not clean contamination, a flywheel shim changes geometry, and a brake chamber pushrod is unrelated.

15. A — Urethane needs time to cure and develop strength to hold the glass during a crash or airbag deployment, and the safe drive-away time depends on the product, temperature, and humidity. Clean appearance, a fixed hour, or connected wipers do not show the bond has cured. Rushing the job risks glass shifting in a collision.

16. A — In AGM batteries the electrolyte is held in glass mats inside sealed cells, so there is no free liquid to draw into a hydrometer. Open-circuit voltage or a conductance tester is used instead. The electrolyte is still sulphuric acid, the voltage claim is false, and AGM batteries certainly discharge. Test voltage after resting the battery several hours.

17. D — A big temperature difference between the hot upper and cool lower hose shows coolant is not circulating through the radiator, which points to a blocked core or a thermostat that is not opening. The washer reservoir, oil pressure sender, and fuel lift pump do not affect coolant flow or cooling capacity.

18. B — High-voltage systems must be disabled by the specified method, such as removing a service plug, then waiting for capacitors to discharge, and finally verified dead with a rated meter before any

work. Touching cables to test them is dangerous, and lights or tire pressure do not remove stored energy. Lockout and PPE rated for high voltage remain mandatory throughout.

19. C — Caster provides straight-line stability and steering return, so too little or unequal caster makes the vehicle wander. Tag height, parking brake travel, and idle speed are not part of the front alignment geometry and will not cause directional wander. Measuring caster on a coach front axle with an alignment gauge confirms the fault, and worn bushings often explain unequal readings.

20. B — An oil-soaked cartridge points to a compressor passing oil into the air system, so replacing the cartridge alone will see it fail again. The compressor and its air supply need inspection. Reusing a contaminated cartridge fails, and alcohol in the tanks is a cold-weather stopgap that does not cure oil carryover.

21. C — Air in a hydraulic line compresses, giving a spongy pedal, and a leaking slave cylinder or master cylinder lets the pedal sink. Bleeding the system and checking the seals is the standard remedy. Transmission fluid, flywheel bolts, and the parking brake cable do not influence a hydraulic clutch pedal feel.

22. A — Ground-side drops during cranking should stay under about 0.2 volts, so 0.9 volts shows a corroded or loose connection or damaged cable that steals voltage from the starter. A good cable would show a very small drop, and the starter cannot overcharge the battery. Repair the connection, then repeat the drop test while cranking.

23. D — Pressurizing the system raises the boiling point of coolant, so the engine can run hotter without the coolant boiling. The cap also lets coolant expand and return through valves. It does not filter debris, does not prevent expansion, and cannot cool coolant below the temperature of the surrounding air. Never open a hot cap.

24. D — Impact sockets are thicker and made of tougher steel that flexes under hammering blows, so they suit an air impact wrench. Chrome hand sockets are harder and more brittle and can shatter under impact. Hitting a torque wrench with an impact tool ruins its calibration, and a flare-nut wrench is meant for hand-turned fittings.

25. B — Because the bulb is good and other circuits work, the fault is likely in the connector pin, a damaged wire, or a poor ground for that single circuit. The air dryer, fifth wheel, and wheel bearings are unrelated to a trailer turn signal circuit. Check the connector, ground, and wiring with a test lamp.

26. C — Foaming shows air is being drawn into the pump through a loose suction fitting, a damaged hose, or a low reservoir level, and it causes noise, erratic operation, and pump damage. The wiper motor and tire pressure have no connection to the hydraulic system. Tighten the suction fitting and top up the reservoir with the specified fluid.

27. A — Feathering is a sign that tires are being dragged sideways, which comes from toe set outside specification. The fix is to correct toe after checking for worn components. Trailer tire pressure, windshield damage, and the parking brake do not produce a feathered wear pattern on steer tires. Re-check toe after replacing worn parts.

28. D — A steady draw that remains well after the sleep delay indicates a circuit that has not shut down, so the usual method is to remove fuses one at a time and watch for the draw to drop. Replacing batteries or the alternator or adding capacity treats the symptom without finding the load.

29. A — Parking brake control valves are designed to release the yellow knob and apply the spring brakes when system pressure drops to roughly 275 to 345 kPa, before the springs can overpower the air pressure. At 520 kPa or above the brakes would apply needlessly, and at 35 kPa the vehicle would already be braking unpredictably.

30. B — A new seal running on a grooved yoke surface leaks again because the lip cannot follow the worn track. Fitting a wear sleeve or replacing the yoke restores a smooth sealing surface. Thicker gear oil, sealant on the lip, and extra breather pressure do nothing to repair a groove worn into the shaft surface.

31. C — Milky oil together with a falling coolant level suggests coolant is entering the lubrication system, from a head gasket, oil cooler, or cracked liner. A pressure test and combustion gas test help locate the leak path. Injector spray, power steering fluid, and oil filter debris do not explain coolant in the oil.

32. B — Moisture and air in the system cause corrosion, freezing at the expansion device, and high pressures, so a vacuum boils moisture away and tests for leaks. Evacuation does not add oil, heat refrigerant, or clean the condenser fins. Hold vacuum for several minutes, and a rise in pressure means a leak remains somewhere in the system.

33. A — A healthy alternator produces almost no AC at its output because the rectifier converts it to DC. Reading above about 0.5 volts AC suggests a failed diode or open winding. A dead cell or a slipping belt would show other symptoms such as low voltage, not extra AC at the terminal.

34. D — Cupping is caused by the tire bouncing off the road repeatedly, so worn shock absorbers, imbalance, or worn suspension parts are the usual causes. Toe wear is feathered rather than scalloped, and an alternator and cabin air filter do not influence tire wear. Bounce-test the shocks and balance the wheels to confirm the cause.

35. C — Oil on the compressor side points to leakage past the turbo seal, often because a restricted drain causes pressure in the bearing housing. The oil then burns and gives blue smoke. A fuel return leak, an open thermostat, and a weak starter solenoid do not move lubricating oil into the intake.

36. A — The adjustment limit for a clamp-type Type 24 chamber is about 44 mm, so 50 mm is out of adjustment and the brake needs attention. Because the cause is a stroke measurement, a larger Type 30 limit does not apply, and pressure should be at least 620 kPa for a valid measurement.

37. C — Range shifts are air operated, so an air supply loss or sticking range valve or cylinder prevents a shift into high range while low range keeps working. The governor affects overall pressure, but the problem is local to the range circuit, and an oil filter or yoke has no part in the shift.

38. B — An alternator output well above about 14.7 volts overcharges the battery and boils electrolyte, which points to the voltage regulator not limiting output. The starter, thermostat, and parking brake

valve play no part in regulating charging voltage, so they cannot cause this symptom. Check the regulator sense wiring before replacing the alternator.

39. D — Rubber mounts isolate vibration and noise, so cracked or collapsed mounts must be replaced and the brackets checked for damage. Grease will not restore elasticity, over-tightening transfers vibration, and tape cannot restore the cushioning function. After replacement, a test drive confirms the vibration is gone and no brackets are loose or cracked.

40. B — When pressure is low the tire sags and the shoulders carry the load, so both edges wear faster than the centre. Over-inflation does the opposite and wears the centre. Perfect alignment would show even wear, and a thermostat has no effect on tire wear pattern. Adjust pressure to the load-based specification and recheck weekly.

41. D — A leak lets compressed air escape, so the turbocharger works harder while the engine receives less air than the fuel calls for, giving low power and black smoke. White smoke, lower coolant temperature, and higher oil pressure are not results of a boost leak and indicate different fault conditions. Pressure testing the intake charge tubes finds the leak quickly.

42. C — Welding current can travel through wiring and destroy control modules, so the battery cables are disconnected and any manufacturer module precautions are followed before striking an arc. The ground clamp belongs close to the weld, not far away. Plastic film does not stop induced voltage, and leaving modules powered increases the risk.

43. A — The landing gear is only meant to support an unhitched trailer, so after coupling it is raised fully and the handle secured. It is not designed to lift a loaded trailer onto the tractor, and driving with it half down risks damage and ground contact. Use the crank only when the trailer is unhitched.

44. D — A restricted inlet starves the pump, so vapour bubbles form and collapse, causing the whine and damage called cavitation. Hydrolock relates to engines, wheel hop to suspension, and compressor unloading to air systems, so none matches this symptom. Clean or replace the suction filter, then inspect the fluid for contamination and pump damage.

45. C — Automatic adjusters should keep stroke within limit, so repeated out-of-stroke findings mean something is wrong, such as worn cam bushings, a damaged adjuster, or a bent bracket. Manual resets only mask the fault, and a governor or pushrod change does not correct an adjuster that is not working. Inspect the adjuster before any adjustment.

46. A — Manufacturers specify lubricants tested for their gears, bearings, and synchronizers, and an unapproved fluid can shift poorly and wear parts quickly, often voiding warranty. It will not raise power or guarantee fuel savings, and the service life is more likely to shorten than extend. Always confirm the approval listing on the fluid container.

47. B — Voltage lost across a solenoid's main contacts means resistance from burned or pitted contacts, which reduces voltage reaching the starter motor and slows cranking. A good solenoid would show very little drop. A weak fuel pump and a glow plug do not change this measurement. Clean and test the contacts or replace the solenoid.

48. C — Repeated interrupted regenerations leave soot in the filter, and a parked regeneration under controlled conditions is the standard first correction. Drilling the substrate defeats emissions control, advancing injection timing does not clean soot, and replacing diesel exhaust fluid with water harms the SCR system and does nothing for the filter.

49. A — A blocked condenser prevents heat rejection, causing high pressure and poor cooling, so cleaning it and verifying fan operation is the correct step. Adding refrigerant would raise pressure further and replacing the evaporator or valve is premature. Afterward recheck the high and low pressures, since an airflow restriction usually drops them back toward normal values.

50. B — Dual tires are matched within about 6 mm in diameter so that neither tire carries more than its share of the load or drags. A larger mismatch overloads one tire, causes rapid wear, and risks heat damage. Saying there is no limit ignores how the tire on the larger diameter ends up bearing excess load.

51. D — Regenerative braking uses the electric motor as a generator to slow the bus and recover energy, so friction brakes handle less of the stopping effort. Hybrids still use brakes, and wheel weight and lining material are not the reason. This is also why transit fleets running hybrid buses often report longer lining life between replacements.

52. D — A caliper that cannot slide freely presses mostly one pad against the rotor, so one pad wears much faster. Seized slide pins or bushings are the common reason. Dryer purge leaks, hub oil level, and alternator regulators have no influence on how evenly the pads wear. Free the pins, lubricate, and replace damaged boots.

53. A — An accurate hot check is performed at normal operating temperature with the engine running at idle and the transmission in neutral, as the manufacturer directs, because fluid volume changes with temperature and circulation. A cold engine-off reading or checking while moving or in reverse gives a misleading level. Fluid level readings are valid only at the specified temperature.

54. B — Rapid clicking and dimming lights show the solenoid is dropping out because battery voltage collapses under load, and 11.2 volts at rest means the battery is deeply discharged. Compressor, radiator hose, and throttle faults do not influence battery voltage during cranking. Charge or replace the battery, then recheck cranking voltage and cable connections.

55. C — Correct DEF is 32.5 percent urea, so an 18 percent reading shows dilution or contamination. The system should be drained, flushed, and refilled with fresh fluid meeting the standard. Adding water dilutes further, antifreeze contaminates the SCR system, and disabling the sensor hides a real emissions problem. Check the new fluid with a refractometer.

56. D — A cross or star sequence in stages seats the wheel evenly without distortion, and a retorque after a short distance corrects settling of mating surfaces. Going around in a circle at full torque can cock the wheel, impact guns at maximum overtighten, and hand tight is far too loose. Recheck the torque after the first trip.

57. C — A clamp-on DC ammeter senses the magnetic field around a conductor, so current can be read while the circuit operates and without breaking the wire. An ohmmeter across a fuse measures resistance

on a dead circuit, a voltmeter in series gives no current reading, and a continuity light only shows whether a path exists.

58. A — When hazardous product is moved into a secondary container, WHMIS requires a workplace label showing the product identifier and safe-handling information, with the safety data sheet available. The original drum label does not travel with the pail. A date alone does not describe hazards, and a competing product label would be inaccurate.

59. B — A kingpin worn beyond limit can allow slack or even a separation in service, so it must be replaced according to the manufacturer's procedure. Grinding reduces strength, grease does not restore the diameter, and welding a bead changes heat treatment and can crack. Inspect the upper coupler plate and mounting bolts for damage at the same time.

60. C — Hydraulic components have tiny clearances, so debris from a failed hose or hot fluid can scratch surfaces and stick valves. Flushing and filter replacement keep the system clean. It does not change pressure ratings, cabin heat, or pump noise. Cleanliness is why technicians cap open lines and filter new fluid before filling the reservoir.

61. B — Magnetic sensors need a close air gap to produce a strong signal, and when the gap is too large the signal is weak or erratic, particularly at low wheel speed, so the ABS module sets a fault. Compressor buildup, parking brake release pressure, and exhaust brake noise are not affected by sensor position.

62. D — A dark, burnt-smelling fluid shows overheating and friction material wear, and clutches that slip lead to late or soft shifts. Windshield washer level, a radiator cap, and brake pedal travel do not explain burnt fluid or poor shifting, so they do not fit the symptoms. Drain, inspect the pan for debris, and recheck pressures.

63. A — A high-pressure pump cannot build rail pressure if the low-pressure supply side is starved by clogged filters, restrictions, or air. Checking supply pressure and filters is the logical first step before condemning the pump or injectors. Cabin air filters, alternator output, and tire pressures have no bearing on rail pressure.

64. C — Cold air lowers tire pressure, but a real reading still needs checking with a calibrated gauge and adjusting to the cold specification, since a low tire is unsafe. Ignoring it risks running underinflated, filling to the sidewall maximum overinflates, and replacing the monitor first wastes parts. Adjust the pressure when the tires are cold.

65. A — A fuse protects the wire, so replacing it with a larger one lets excess current heat the wiring and risk a fire. The correct response is to restore the specified fuse and locate the short or overload that causes the blowing. Tape and a relay do not remove the cause.

66. B — Draining only treats the symptom, so the technician should locate where the water came from, such as tank condensation or bad fuel, and replace contaminated filters to protect injectors. Chemical additives are not a substitute for correction, raising idle does nothing about water, and disconnecting the sensor removes the warning.

67. D — An open sensor circuit is most often a damaged connector, harness, or the sensor itself, so inspect the connector and wiring and measure the sensor resistance before replacing expensive parts. Modulator valves, tank draining, and linings are not the cause of a stored wheel sensor circuit code. Measure sensor resistance against the specification afterward.

68. C — Without lockup the torque converter slips like a fluid coupling, so engine speed is higher and heat builds in the fluid. The lockup clutch, solenoid, or control signal is the first place to look. The wiper, the ramp, and a charged battery do not affect converter slip. Scan data shows lockup command and slip speed.

69. A — Air-operated doors depend on adequate supply pressure and properly set speed controls, and cold weather can cause sticking linkages or frozen moisture. Alternator output, tread depth, and oil level are unrelated to door operation, so they are not the logical starting point. Check for ice, kinked air lines, worn pivots, and a limit switch that is out of adjustment.

70. B — Condensation forms on the evaporator and normally drains outside, so a clogged drain tube or hose lets it overflow into the cabin. Washer fluid, an alternator, and wheel nuts do not produce water at the evaporator. Clearing the drain tube with compressed air and checking the drip pan for cracks restores normal condensate flow outside the unit.

71. C — A solid mechanical joint sealed with adhesive-lined heat shrink resists vibration and moisture, which is critical in an engine bay. Twisted-and-taped or hooked splices loosen and corrode, and wire nuts are not designed for vibration and wet conditions, so these methods lead to repeat faults. Cover every joint completely and support the harness.

72. D — Air ride systems use height control valves that fill or exhaust air springs to maintain the set height, so a failed valve, a loose linkage, or a leaking air spring on that corner will make it sit low. The steering gear, alternator, and clutch disc do not affect suspension height.

73. B — A very low sensor voltage suggests a short to ground in the harness or an internal short in the sensor, so the logical test is to check the wiring and then the sensor with a meter. Fuel pump pressure, turbo actuator travel, and crankcase pressure are unrelated to this specific circuit fault.

74. A — For a single vehicle with brakes applied, loss of more than about 21 kPa (3 psi) in one minute is excessive, so 55 kPa is a failure that needs a leak check with soapy water or a leak detector. The loss is not normal, engine-off conditions are the proper test setup, and the compressor is not at fault.

75. D — Automated manual transmissions have no pedal, so the control module must learn the new clutch engagement point through the manufacturer's calibration routine, or the clutch will grab or slip. Free play adjustment, shift lever length, and a long battery disconnect do not teach the transmission control module. Road testing follows the calibration.

76. A — One newton-metre equals about 0.7376 pound-feet, so 250 N·m multiplied by 0.7376 gives about 184 lb·ft. Multiplying by 1.356 instead gives the reverse conversion and the 339 value, which would overtighten the fastener badly. Always convert in the correct direction and confirm that the wrench scale matches the specification. Check the units before using any converted value.

77. B — If the locking pins are not fully seated, the tandem can slide during braking and cause loss of control, so each pin is verified by sight and by trying to move the tandem. Tire temperature, the dryer, and the fuel tank are not relevant to the slider lock. A quick tug test confirms the lock.

78. C — A hose with a hardened, cracked cover and exposed braid has lost its protection and may burst under pressure, so the complete assembly should be replaced with one rated for the system. Tape and sealant cannot restore pressure strength, and shortening the hose creates a field-made joint that has not been tested to the working pressure.

79. D — A lamp receiving 10.4 volts from a 12.6 volt source is losing about 2.2 volts in the circuit, so the fault is high resistance in the wiring, connector, or ground path. Coolant temperature, the air dryer, and transmission fluid do not affect lamp voltage. Measure voltage drop across each connection to locate it.

80. A — A worn shock absorber usually leaks fluid or loses its damping resistance when stroked, and the vehicle bounces too much. Tire pressure, transmission oil, and lamp bulbs are not indicators of shock condition, so they cannot answer the question. Stroke the shock by hand or inspect for oil film to confirm the diagnosis.

81. C — An exhaust brake butterfly valve closes in the exhaust, so the engine pumps against back pressure and the vehicle slows without wheel brakes. It does not spray coolant, it does not control boost by closing the intake, and cutting fuel alone is what happens on overrun but is not what the exhaust brake itself does.

82. D — A conventional flasher relies on the heavier current of incandescent bulbs, and the low LED load fools it into flashing fast. The correct fix is an electronic flasher designed for LEDs or load resistors that restore the expected load. Battery, alternator, and switch wire gauge are unrelated. Install the correct part and check flash rate.

83. B — Air leaking from the parking section when the spring brake is released shows that the diaphragm in the spring side has ruptured, and the chamber needs replacement as a unit for safety. S-cam bushings, air filters, and wheel bearings do not allow air out of a spring brake vent. Never open a spring brake.

84. C — A vibration at a particular speed after u-joint work points to misalignment of yokes out of phase or an out-of-balance shaft, because the joint's speed fluctuation no longer cancels. Oil level, washer pump, and cabin filter do not create speed-related driveline vibration. Verify the phasing marks line up and measure shaft runout and balance before road testing.

85. D — Energy in kilowatt-hours equals voltage times amp-hours divided by 1,000, so 650 times 210 gives 136,500 watt-hours, or 136.5 kWh. Misplacing the decimal gives 13.65, and the other values come from incorrect arithmetic that does not follow the energy formula. Pack voltage and capacity are listed on the nameplate, and usable energy is somewhat less than this nominal figure.

86. B — The centre bolt locates the axle on the spring, so breakage lets the axle shift and ruins alignment, tracking, and tire wear. It must be replaced and the alignment confirmed. Welding to a spring

weakens it, leaving it unrepaired is unsafe, and drilling a spring creates a stress concentration. Check tracking afterward with an alignment gauge.

87. A — Compression release brakes rely on correct lash and solenoid-controlled oil flow to open exhaust valves near top dead centre, so weak action on certain cylinders points to housing adjustment or a solenoid fault. The heater core, wiper motor, and compressor governor have no link to the retarder performance. Check the oil supply as well.

88. A — A hot inlet hose with a cool outlet shows coolant is not flowing through the core, due to a blockage, trapped air, or a coolant valve that is stuck closed. Tire pressure, a clutch disc, and brake line leaks have no effect on heater flow. Flush the heater core and bleed any trapped air.

89. D — Multiple modules losing communication at once points to a shared network problem, and a reading close to zero ohms between CAN high and CAN low shows the two wires are shorted together. Several simultaneous module failures are unlikely, and the air dryer and coolant level cannot affect network wiring. Isolate sections of the network to find the short.

90. B — A drum stamped with a maximum diameter cannot be used or machined beyond that figure because a thin, hot drum can crack or lose strength under heavy braking. Fitting thicker linings or moving the drum to a different axle does not make an oversize drum safe. Always compare readings with the stamped limit.

91. C — A cracked cushion lets the support bearing move, causing vibration and shaft misalignment, so the assembly is replaced and alignment is verified. Sealant cannot restore the rubber's stiffness, only tightening the bracket leaves the damaged cushion, and removing it would let the bearing shift further. Recheck the driveline angle after installation and torque the bracket bolts to specification.

92. B — A mentor corrects unsafe habits immediately and calmly: pause the task, explain what could happen, and watch the apprentice repeat it correctly. Quietly fixing it hides the lesson, relying on the hoist locks ignores that chocks stop rolling during lift, and permanent reassignment removes the learning rather than building the skill.

93. C — Heavy frost blocks airflow across the evaporator and cuts cooling capacity, and it points to a faulty defrost cycle, a stuck defrost sensor, or restricted air return. Turn signals, washer level, and brake chambers are not parts of the refrigeration system. Check the defrost termination sensor, the defrost heater circuit, and the evaporator fan as well.

94. A — A calibrated gauge placed in the circuit shows actual pressure, and the valve is adjusted to the specified value while the system is deadheaded safely. Listening, touching hoses, and judging fluid colour do not produce a pressure value. Use a gauge rated well above the setting and never exceed the component's maximum rated pressure while testing.

95. D — Air left in the fuel system after a filter change can prevent the pump from drawing fuel and can cause hard starting or stalling, so the system is primed per procedure. Priming does not change cetane rating, warm the coolant, or lubricate the starter, so those options describe unrelated effects.

96. D — Vertical movement in a kingpin assembly means the thrust bearing or shim stack has worn, so it needs adjustment or replacement before it affects steering and tire wear. An alternator, transmission fluid level, and windshield cracks do not influence kingpin vertical clearance. Measure with a dial indicator and compare it with the specification.

97. C — Seat belt webbing is a safety restraint that cannot be repaired, so a frayed belt must be replaced as an assembly to ensure it holds in a crash. Sewing, taping, or cutting the webbing would weaken it and could fail when it matters most. Install a new belt matched to the seat position.

98. A — In J1939 diagnostics, FMI 3 means voltage above normal, or shorted to a high voltage source, while FMI 4 is the low-voltage counterpart and FMI 2 is erratic data. SPN 168 identifies battery potential, so the code points to an overvoltage condition on that parameter. Next, inspect the wiring and sensor for a short to power.

99. B — Brake linings should be replaced in axle sets with matching material so braking force stays equal side to side. Replacing a single side or mixing materials creates brake imbalance and pulling. Heavier loading on one side does not justify uneven linings, so both ends are done together. Check the new friction material codes match.

100. A — Preload is a deliberate light load on tapered bearings, so the standard check is the torque needed to rotate the pinion with the seal removed or installed per the manual, measured on an inch-pound torque wrench. Finger feel and bolt turns are inaccurate, and wheel nuts are unrelated. Record the measured value.

101. B — Falling oil pressure when the oil thins out at operating temperature points to excess clearance in bearings or a worn pump that cannot maintain pressure. A tight belt, dirty cabin filter, and a worn tire have no effect on lubrication pressure, so they cannot explain the low reading at hot idle.

102. C — A multimeter averages a rapidly switching signal, so the reading reflects supply voltage times the duty cycle rather than a steady DC level. An oscilloscope or duty-cycle function shows the real waveform. It is not simply battery voltage, a ground fault, or the peak value. Compare it with the commanded percentage shown on the scan tool.

103. D — Frame rails are heat-treated, so repairs must follow the manufacturer's guidance, usually avoiding welds across the flanges and drilling in them, and using reinforcement as specified. Drilling flanges and uncontrolled welding weaken the rail, and ignoring a crack lets it propagate. Have the finished repair inspected and measure frame alignment before returning the coach to service.

104. B — Thermostats must go in the proper way round, with the heat-sensing element toward the engine, and with a new seal to avoid leaks. The bleed hole allows air to escape and should stay in place. Installing upside-down can cause overheating, and reusing an old gasket risks a coolant leak. Fill and bleed afterward.

105. A — R-134a systems use polyalkylene glycol oil to circulate and lubricate the compressor, and the correct viscosity is specified by the manufacturer. Mineral oil is not compatible with this refrigerant, and

engine oil, transmission fluid, or fuel would damage the system. The wrong oil can cause foaming, sludge, seal damage, and early compressor failure.

106. D — Slow release at the rear axle often comes from a relay valve with a restricted exhaust or a sticky piston, which holds air in the chambers. The control line is also checked. The fuel lift pump, alternator belt, and cabin filter do not affect how fast brake chambers exhaust. Clean or replace the relay valve.

107. C — A pattern at the extreme heel shows the gears are not meshing at the correct depth and position, so shims or adjusters must be changed following the manufacturer's pattern chart. Heavier oil, tire pressure, and wheel studs cannot correct the geometry of the gear mesh. Re-test the pattern after each shim change.

108. A — Intermittent dropouts happen too fast for a static meter reading, so a scope or graphing tool that records the signal while the fault occurs is the best choice. A test light only shows presence of voltage, and a hydrometer and tire gauge measure unrelated quantities. Set the scope to record the sensor while driving.

109. B — A broken stud often means the neighbours were overloaded or loose, so the adjacent studs, nuts, and the wheel mounting holes must be inspected for cracks and stretch. Oil filter, wipers, and compressor grease do not relate to wheel mounting. Replace studs as a complete set if several are damaged, and check the wheel for elongated holes.

110. D — Class C covers energized electrical equipment, so a dry-chemical or carbon dioxide extinguisher rated for it is correct for a charging cabinet fire. Class A handles ordinary combustibles like paper and wood, Class D handles combustible metals such as magnesium, and Class K handles cooking oils, so none suits a live electrical source.

111. C — A trailer ABS module needs a constant power feed and a good ground through the connector, and corrosion or a bad connection is a common cause of a lamp that stays on. The tractor dryer, lining colour, and cab filter are not related to trailer ABS power. Repair the connection and clear the code.

112. C — A blocked oil cooler cannot reject heat, so fluid temperature climbs, viscosity drops, and the circuit behaves erratically. Cleaning it and verifying the fluid level and temperature is correct. Engine oil, cabin filter, and tire pressure are not involved. Replace the fluid and filter if it is discoloured, and check the fan drive for noise afterward.

113. A — Protection of only minus 12 degrees leaves the system exposed in cold-weather operation, so the coolant should be corrected to the recommended glycol concentration, typically near fifty percent. Adding water makes protection worse, salt causes corrosion, and coolant can certainly freeze if diluted too much. Verify the final concentration with a refractometer before releasing the bus.

114. D — A ground fault breaker trips when current leaks to ground, commonly from a damaged cord or a heater element with failed insulation, so those are inspected with a megohmmeter or continuity test. Brake chambers, oil level, and wiper fuses are not part of the heater circuit. Replace the damaged cord or heater and retest on the breaker.

115. B — A quick release valve lets air in the brake chambers vent near the chamber instead of travelling back to the foot valve, so brakes release faster. It does not raise pressure beyond the governor, load the compressor, or dry the air, because those jobs belong to other components. Mount it close to the chambers.

116. A — A plugged breather cannot vent the air that expands as the axle heats, so pressure builds inside the housing and forces gear oil past the wheel-end seals. Cleaning or replacing the breather and repairing the seals corrects the cause. Cold oil, thin oil, and a loose spline do not raise housing pressure.

117. D — When the rear axle is not square to the frame centreline the vehicle tracks at a slight angle, called dog tracking or thrust angle error, so the axle alignment must be corrected. Cupping describes tire wear, hydroplaning happens on wet roads, and cavitation is a hydraulic pump fault. Measure with an alignment system.

118. B — Low insulation resistance means current could leak to the chassis and create a shock risk, so the leakage path must be found and fixed. Clearing the code, charging faster, or disabling the lamp hides the hazard and can endanger people who touch the vehicle. Follow the high-voltage lockout procedure while locating the fault and retest.

119. C — Oil consumption with normal compression and no external leak suggests oil is burned in the combustion chamber past worn valve stem seals or oil control rings. A water pump seal leak affects coolant, a damaged radiator cap affects pressure, and a manifold bolt crack gives an exhaust leak rather than oil burning.

120. A — The battery meter shows the charging system is working at 14.1 volts, so the lower dash reading means the gauge circuit is losing voltage through a corroded connection or bad ground. An undercharging alternator would show low voltage at the battery too, and starter and thermostat faults are unrelated. Measure the drop at the gauge.

121. B — A torn door seal lets water enter, so the weatherstrip must be replaced and the door alignment confirmed so it compresses evenly. Silicone on the floor ignores the cause, plugging drain holes traps water, and tire pressure has no relation to door sealing. Afterward a water hose test confirms the repair and shows whether the door alignment is correct.

122. D — A vehicle pulls toward the side with the stronger braking, so if the right front linings are contaminated with oil and grip poorly, the left side stops harder and pulls the bus left. Contamination on the left would pull right, and neither the governor nor a thermostat affects brake balance.

123. C — Road speed equals engine rpm times 60 times tire circumference, divided by total gear reduction times 1,000. The total reduction is 0.78 times 3.36, or 2.62, so 1,300 times 60 times 3.27, divided by 2,621, is about 97 km/h. Dividing by the axle ratio alone gives a much higher figure.

124. A — A secure coupling is confirmed by looking at the locking jaws around the kingpin, checking that the release handle is fully locked, and then performing a light tug test with the trailer brakes applied. A click or working lights does not prove the jaws are locked, and spinning wheels does not either.

125. C — A cylinder wall that is tapered or out-of-round will not seal with new rings, so the bore must be restored by boring and honing to an oversize with matching pistons, or by installing new sleeves. Head gaskets and ring replacement alone cannot restore geometry, and steel wool does not correct the shape.

126. D — Refrigerants are regulated, so recovering and handling them requires certification under provincial rules and approved recovery equipment to prevent venting. Reading a manual does not authorize handling, drivers are not qualified by default, and a welding ticket is irrelevant. Certification also confirms the technician knows safe recovery steps, which protect the environment and the person doing the work.

127. B — A wiring diagram lets a technician follow the circuit from fuse or relay through connectors to the exact module pin, so tests are done at the right points. Guessing from colours is unreliable because colours change between models, and probing every pin with a test light risks damaging electronic circuits.

128. A — A seal struck unevenly with a hammer deforms and sits crooked, so the lip never contacts the sealing surface evenly and it leaks fast. Seals should be driven square with a proper installer. NLGI 2 grease is normal, bearing preload does not crush a seal, and stud length has no bearing on seal sealing.

129. C — Large amounts of water in the trailer tank mean moist air is getting through, so the tractor dryer cartridge, heater, or purge cycle should be checked. Grease, tire pressure, and fuel quality do not add water to the air tanks. Also check the dryer heater in winter and drain tank valves at each shift.

130. D — When a cylinder drifts under load with the valve closed, fluid is leaking internally past the piston seals or through a holding valve, so seals or valves need repair. Coolant, brake linings, and wiper blades are not part of the lift's hydraulics. Repair or replace the seal kit or holding valve before the lift is used again.

131. A — The warning must activate before pressure falls below 414 kPa so the driver has time to react, so a switch that sounds at only 280 kPa is faulty and must be replaced. Sounding at all does not make it acceptable, and the governor and parking valve have separate functions. Replace it with the correct switch.

132. B — Hydraulic retarders turn braking energy into heat that is carried away by a heat exchanger, so reduced coolant flow or a restricted exchanger causes the control system to limit retarder output when hot. Wiper arms, seat belts, and door seals have nothing to do with retarder performance. Check coolant flow through the exchanger.

133. D — Hub oil filled above the specified level pushes lubricant against the seal and out through the vent or past the seal lip, so the level is corrected to the fill mark and the seal checked. Tire pressure, brake chamber springs, and wiper arms do not affect hub oil leaking from a seal.

134. C — The lower radiator hose sits on the suction side of the water pump, so without its internal support spring or with a weakened hose wall it can collapse at higher rpm and restrict flow. Antifreeze strength, a high-rated cap, and an early thermostat do not create the suction that collapses the hose wall.

135. B — Disconnecting battery power can clear learned values in some modules, so manufacturers give relearn or initialization procedures after reconnection. Banning disconnects is impractical, replacing modules is unnecessary, and disconnecting only the alternator does not remove the parasitic draw that discharges the batteries. Follow the manufacturer's procedure after reconnecting and confirm that all faults are cleared.