

PRACTICE EXAM 15: AUTOMOTIVE SERVICE TECHNICIAN (125 QUESTIONS)

Allow four hours. Select one answer, A, B, C or D, for each question. Use the data and assumptions supplied. Complete the paper before reading its answer key. At least 88 correct answers meet a 70% practice threshold; these independent questions are not official examination items.

1. A supplied thermal-loop recipe needs 15 L of 20% concentrate mixture, neglecting contraction. What concentrate volume is required?

- A. 12 L.
- B. 0.2 L.
- C. 75 L.
- D. 3 L.

2. A damper inspection specifies a function test rather than relying only on external residue. What should the technician do?

- A. Replace every unit with any visible dust.
- B. Use the applicable condition and performance criteria together.
- C. Accept any dry-looking unit without function checks.
- D. Judge function solely from the nominal application label.

3. An EV charge-inlet lock indication remains false. Mechanical inspection finds the lock cannot reach its specified position because of damaged hardware, while its command is present. What should be addressed?

- A. The identified locking mechanism and required control state.
- B. A larger household supply circuit as mechanism repair.
- C. Bypassing the lock indication for normal charging.
- D. Changing battery-capacity data to enable charging.

4. A steering input sensor is replaced, but its required calibration reports failure. Mechanical movement and wiring checks pass. What should completion address?

- A. Disable the related assist diagnostic.
- B. Use an arbitrary zero value from another vehicle.
- C. Resolve the calibration condition before final function acceptance.
- D. Release because the sensor is new.

5. Programming finishes successfully, but the subsequent required configuration check fails for one installed option. What remains?

- A. Acceptance from file-transfer success alone.
- B. Changing physical network resistance to set the option.
- C. Removing the option's warning without setup.
- D. Resolve the option configuration and verify its assigned functions.

6. A mode-door linkage is restored after detachment. What should function checks include?

- A. Only actuator movement without checking its linked door.
- B. Only clip fit without observing the required outlet flow.
- C. Leaving the door permanently in defrost.
- D. Physical travel and airflow through required modes.

7. A brake pedal feels firm, but measured pressure at one axle does not follow the supplied proportioning requirement. Its valve assembly differs from the documented application. What needs assessment?

- A. Increasing reservoir level above the specified range.
- B. Correct hydraulic-control applicability and pressure behaviour.
- C. A tire-balance correction as hydraulic regulation.
- D. Acceptance from pedal feel alone.

8. Communication resumes when an approved isolation disconnects one branch. Separate testing finds the branch wiring acceptable but its attached node loads the bus outside its supplied criterion. What is supported?

- A. The node's loading condition needs assessment under the procedure.
- B. Ignoring the node because wiring passes.
- C. Every wire on the branch must be replaced.
- D. The battery must be defective despite normal branch supplies.

9. A cooler is replaced after a documented internal transmission failure, but connected lines retain debris outside the supplied cleanliness criterion. What remains?

- A. Extra fresh fluid as guaranteed debris removal.
- B. Acceptance because the cooler itself is new.
- C. Restore the specified cleanliness of the complete connected circuit.
- D. A software update as passage cleaning.

10. A fuel-system repair eliminates the identified leak, but required pressure-control verification under demand remains incomplete. What should release require?

- A. Erasing all pressure faults without operating tests.
- B. Complete the applicable dynamic control and containment checks.
- C. Acceptance from a dry stationary joint.
- D. Increasing idle speed as demand verification.

11. A fluid operation records three collected volumes: 240, 180 and 160 mL. What total is documented?

- A. 80 mL.
- B. 193.3 mL.
- C. 6,912,000 mL.
- D. 580 mL.

12. An HVAC cooling complaint follows sensor replacement. The new part is documented for another sensor characteristic, and its data is implausible at a verified ambient condition. What should be established?

- A. Correct sensor application and measurement response.
- B. A fixed substitute temperature as normal operation.
- C. Compressor replacement before correcting the input.
- D. A refrigerant recharge solely from warm cabin air.

13. A mirror heater does not warm. Correct voltage is measured directly across the connected element, and its prescribed test identifies an open. What should be assessed?

- A. The shared control switch as necessarily absent.
- B. The shared switch as the sole fault despite valid supply.
- C. The local heating element and its connection.
- D. A higher fuse rating to close the element.

14. A gasoline delivery check collects 1.2 L in 40 seconds. What timed rate results?

- A. 0.03 L/min.
- B. 1.8 L/min.
- C. 48 L/min.
- D. 0.8 L/min.

15. A brake-fluid warning remains active although independent level inspection is correct. The prescribed switch substitution changes the warning normally, but the original level sensor stays in its low state. What is supported?

- A. The receiving module is proved defective.
- B. Adding fluid above the specified level as warning repair.
- C. The sensor or local level-input mechanism needs diagnosis.
- D. Pad replacement alone as sensor-state correction.

16. A circuit has 16 V across a stated 8-ohm load. Using $I = V/R$, what current results?

- A. 2 A.
- B. 0.5 A.
- C. 128 A.
- D. 8 A.

17. An electronic parking brake moves both actuators, but holding performance fails. The supplied inspection finds the mechanical friction adjustment outside range on one side. What needs assessment?

- A. Acceptance from actuator movement alone.
- B. Higher electrical voltage as friction-clearance adjustment.
- C. Replacement of both control switches without evidence.
- D. That side's mechanical adjustment and holding function.

18. A seat-temperature sensor is replaced after verified bias. What should final verification do?

- A. Provide a permanent fixed temperature signal.
- B. Only clearing the warning without a temperature comparison.
- C. Only element continuity without checking sensing accuracy.
- D. Verify temperature input and heating-control response.

19. A harness has normal continuity at rest, but a short to grounded structure appears when its unprotected section contacts an edge during the prescribed test. What is supported?

- A. All connected modules must be faulty.
- B. The movement-sensitive insulation fault needs repair.
- C. Continuity at rest proves the entire harness sound.
- D. A larger fuse is the correct insulation repair.

20. A valve-train repair restores clearance, but an identified oil-feed restriction remains. What should completion address?

- A. The feed condition and required lubrication verification.
- B. Thicker oil as automatic passage cleaning.
- C. A higher idle speed to conceal the restriction.
- D. Acceptance from the corrected clearance alone.

21. A network harness repair includes a grommet removed during access. What should completion restore?

- A. More unsupported slack through the sharp opening.
- B. Only trim closure without inspecting the cable interface.
- C. Specified grommet, routing, retention and circuit checks.
- D. Only continuity without the required opening protection.

22. A node appears only intermittently in a scan. Its required ignition feed is stable, but the separate wake input disappears at a faulty switch during the event. What should be diagnosed?

- A. The wake-input path and actual node-state condition.
- B. All bus terminations despite a captured input loss.
- C. Immediate replacement of the node from intermittent access.
- D. A battery change as switch contact repair.

23. After a universal-joint assembly correction, what should the technician verify?

- A. Only that the shaft can be bolted on.
- B. A road test with known mechanical binding left present.
- C. Only the caps' external appearance.
- D. Specified retention, free movement and installation geometry.

24. What does a knock-sensing input generally provide for the engine strategy?

- A. A direct adjustment of piston clearance.
- B. Information about specified vibration events used by control logic.
- C. A permanent guarantee that every combustion event is normal.
- D. A chemical measurement of fuel octane in the tank.

25. What is the general purpose of cell balancing where the battery design uses it?

- A. Replacing the high-voltage interlock function.
- B. Guaranteeing every cell has unlimited capacity.
- C. Managing specified differences among individual cell states.
- D. Converting all traction power directly to wheel torque.

26. A correct hydraulic proportioning component is installed, but its final pressure comparison still fails the supplied requirement. What should be done?

- A. Erase the failed result from the repair record.
- B. Continue localized diagnosis and required verification before release.
- C. Accept it because the part is correct.
- D. Increase tire pressure to change the gauge reading.

27. What does a rocker arm generally transmit in its intended valve-train arrangement?

- A. Motion and force between the actuation mechanism and valve.
- B. Return force from the valve spring directly.
- C. Adjustment of hydraulic lash independently of geometry.
- D. The sealing of the valve head against its seat.

28. Why must suspension replacement hardware follow the specified application?

- A. Any matching wrench size guarantees equivalence.
- B. Extra torque makes every substitute suitable.
- C. Hardware identity is irrelevant if the vehicle sits level.
- D. Its geometry, strength and retaining features serve the intended joint.

29. A supplied ignition waveform has a 3 ms active interval in a 15 ms period. What duty percentage results?

- A. 0.2%.
- B. 500%.
- C. 20%.
- D. 12%.

30. A leaking refrigerant hose assembly is replaced. What should repair completion restore?

- A. Only that the compressor runs once.
- B. Only hose fit without completing circuit verification.
- C. Specified support, sealing and circuit-service checks.
- D. An unapproved clamp over the new hose.

31. A tool instruction requires pre-use inspection of a press fixture and load-bearing adapters. What should the technician verify?

- A. Condition, compatibility and secure setup before applying force.
- B. The maximum force as proof that every adapter is suitable.
- C. Only that the fixture fits on the bench.
- D. Only that the handle moves.

32. Electric steering applies unequal assist with no actual wheel load change. The prescribed torque-input test reveals a biased signal, and an approved substitution restores expected command. What should be localized?

- A. Increasing tire pressure as sensor-bias repair.
- B. Mechanical rack replacement without input checks.
- C. A larger assist fuse as signal correction.
- D. The torque sensing and related input path.

33. A correct bump stop is installed, but its mounting bracket remains bent outside the supplied dimension. What still needs resolution?

- A. Deleting the bracket from the suspension.
- B. The bracket and completed travel-limiting geometry.
- C. A larger wheel diameter as bracket straightening.
- D. Acceptance from the new stop's part number.

34. An EV uses 35 kWh over 250 km under the supplied conditions. What normalized consumption results?

- A. 14 kWh/100 km.
- B. 7.14 kWh/100 km.
- C. 87.5 kWh/100 km.
- D. 140 kWh/100 km.

35. A gasoline high-pressure pump replacement fits, but its documented drive-interface requirement differs from the engine's supplied follower arrangement. What must be established?

- A. Acceptance from mounting-bolt fit.
- B. Higher inlet pressure as mechanical-interface qualification.
- C. Complete application compatibility before assembly.
- D. An improvised follower spacer without approval.

36. A scan capture counts 3,600 events in 18 seconds. What average event rate is indicated?

- A. 3,582 events/s.
- B. 0.005 events/s.
- C. 64,800 events/s.
- D. 200 events/s.

37. The windshield outlet has little flow in defrost mode. Blower and filter checks pass, and inspection finds the mode linkage detached while the actuator moves. What is supported?

- A. A larger blower before addressing the linkage.
- B. Restore the air-distribution mechanism and verify outlet response.
- C. Additional refrigerant as duct selection.
- D. A thermostat replacement as mode-door coupling.

38. An electrical load remains energized after its command turns off. The controlled test finds welded relay contacts, while the coil is no longer powered. What is supported?

- A. The control signal must still be active.
- B. A larger coil fuse will separate the welded contacts.
- C. The load's ground is necessarily open.
- D. The contact fault explains continued load supply.

39. A tire-pressure display identifies the wrong wheel after rotation. Independent pressures are correct, and sensor identities remain mapped to their former positions. What should be assessed?

- A. A larger tire to match the old location.
- B. The required location-learning or identity arrangement.
- C. Inflating the wrongly displayed wheel above specification.
- D. Wheel replacement as software mapping.

40. A heated seat reports overtemperature immediately from cold. Independent temperature is normal, and an approved sensor substitution produces correct controller response. What should be localized?

- A. The temperature sensing element and local path.
- B. A genuine instant thermal event is established.
- C. Replacement of every seat module.
- D. Higher heater output as sensor repair.

41. A perpendicular 50 N force acts at a 0.30 m lever arm. Using $\text{torque} = \text{force} \times \text{arm}$, what torque is produced?

- A. 50.3 N·m.
- B. 150 N·m.
- C. 15 N·m.
- D. 166.7 N·m.

42. An HV repair is ready for voltage verification, but the specified meter lead insulation is damaged. What is appropriate?

- A. Assume isolation is complete because the disconnect was removed.
- B. Provide valid suitable equipment before following the verification sequence.
- C. Use the leads only for the lowest expected reading.
- D. Wrap them in an unverified shop rag.

43. An HVAC circuit leaks at a repaired hose crimp during its specified pressure-state check. Other measured performance is acceptable. What should diagnosis require?

- A. Acceptance because vent temperature meets the target.
- B. A lower blower setting as hose sealing.
- C. Resolve that containment fault despite acceptable cooling.
- D. Adding lubricant outside the crimp as leak proof.

44. A 4:1 reduction receives a stated 240 N·m input, assuming 85% efficiency. What output torque is calculated?

- A. 960 N·m.
- B. 51 N·m.
- C. 204 N·m.
- D. 816 N·m.

45. A diesel's actual rail-pressure value is implausible. An approved independent measurement is normal, and the sensor-side signal fails its prescribed check with reference and ground satisfactory. What is supported?

- A. The pressure sensing and local signal path need diagnosis.
- B. Injector replacement from display alone.
- C. A forced regeneration as rail-sensor repair.
- D. Pump replacement despite normal independent pressure.

46. An engine oil spill reaches the exhaust before a running diagnostic test. The exhaust will heat during that test. What is appropriate?

- A. Reduce the test duration while leaving the oil present.
- B. Run the engine quickly to evaporate the oil.
- C. Cover the exhaust with an ordinary cloth.
- D. Remove and assess the spill before the ignition and hot-surface exposure.

47. A diesel rail-pressure sensor is replaced after verified failure. What should completion confirm?

- A. Specified connection, sealing and plausible pressure response.
- B. Only connector fit without checking sealing or response.
- C. An unverified offset entered to match expectation.
- D. Only that the displayed value is nonzero.

48. What does a circuit breaker do in its specified protective role?

- A. Guarantee every module signal is accurate.
- B. Respond to defined excessive-current conditions in the protected path.
- C. Increase conductor capacity when a load grows.
- D. Repair a corroded connection automatically.

49. A supplied disc minimum is 22.0 mm and the measured thickness is 22.45 mm. What numerical margin remains?

- A. 44.45 mm.
- B. 0.225 mm.
- C. 0.45 mm.
- D. 0.045 mm.

50. An axle clunk occurs with excessive measured spline backlash at one coupling. Gear backlash and mount checks pass their supplied requirements. What should be localized?

- A. The passed differential gears as necessarily defective.
- B. Increasing lubricant level as spline-geometry correction.
- C. The coupling's spline engagement and condition.
- D. A tire-valve leak as measured spline movement.

51. A replacement module broadcasts a value in an incompatible configuration. Wiring and message reception pass, but the applicable identifier differs from the vehicle's required variant. What is supported?

- A. Correct applicability and configuration before diagnosing the receiving units.
- B. Replacement of every recipient independently.
- C. Increasing supply voltage as software matching.
- D. Changing bus resistors to alter variant identity.

52. A welded relay is replaced, but the connected load current still exceeds its supplied limit. What should repair completion address?

- A. Installing another relay repeatedly without diagnosis.
- B. Increasing protection to allow continued excess current.
- C. Acceptance because the contacts now open.
- D. The abnormal load and switching-circuit duty before release.

53. A vent-temperature check records 12°C on one outlet and 17°C on another under the same supplied conditions. What measured difference results?

- A. 29°C.
- B. 5°C.
- C. 1.417°C.
- D. 0.5°C.

54. Two stated parallel branch currents are 3 A and 7 A. What total source current is required by their simple sum?

- A. 21 A.
- B. 10 A.
- C. 0.7 A.
- D. 4 A.

55. A replacement knock sensor has a specified mounting preparation and torque. What should installation follow?

- A. Hand tightening based only on sensor size.
- B. Any tight position near the engine.
- C. Those requirements and the applicable signal or operating checks.
- D. Additional sealant as vibration coupling.

56. A specified body bracket uses six 5 mm spacing pieces in the given arrangement. What total thickness results?

- A. 0.833 mm.
- B. 25 mm.
- C. 11 mm.
- D. 30 mm.

57. What is the main role of a suitable cylinder-pressure gauge during a prescribed compression test?

- A. Measuring the test's cylinder pressure under the stated conditions.
- B. Measuring the injector's electrical pulse width directly.
- C. Displaying valve lift without another sensor.
- D. Determining coolant mixture concentration.

58. What does a tire-pressure monitoring input principally report for its specified wheel?

- A. Mechanical wheel-bearing end play directly.
- B. Brake pad friction coefficient directly.
- C. The sensed tire-pressure information used by the system.
- D. Every suspension joint's movement.

59. A gasoline high-pressure supply is low under demand. Its low-pressure feed meets the test, but the prescribed inspection finds wear in the pump's mechanical actuation follower. What should be investigated?

- A. All oxygen sensors from the pressure value alone.
- B. Low-pressure pump replacement despite its passed check.
- C. A fuel-cap leak as the mechanical follower cause.
- D. The high-pressure pump actuation and related output function.

60. A harsh impact occurs before expected suspension travel ends. The installed replacement bump stop is documented for a different length, while spring and damper checks pass. What should be verified?

- A. A new brake booster as travel correction.
- B. Correct stop application and full movement envelope.
- C. Removing the stop permanently without review.
- D. Increasing tire pressure to shorten stop contact.

61. A current-monitoring cable is restored to its approved path. What should completion check?

- A. Installed routing, measured data and required electrical functions.
- B. Only that the cable length is unchanged.
- C. Only the battery's date label.
- D. Permanent entry of an estimated current value.

62. An unreliable EV thermal input is repaired. What should completion include?

- A. Only reservoir level without verifying sensor response.
- B. Sensor validity, operation and protective-response checks.
- C. Only cleared history without checking the repaired input.
- D. A fixed substitute signal as final sensing.

63. A supplied comparison requires at least 90% of a 200 kPa reference reading. What minimum calculated value corresponds to that criterion?

- A. 220 kPa.
- B. 20 kPa.
- C. 180 kPa.
- D. 2,000 kPa.

64. A supplied adjustment reduces total toe from 3.5 mm to 0.5 mm on the same inward reference. What reduction is calculated?

- A. 7 mm.
- B. 4 mm.
- C. 0.3 mm.
- D. 3 mm.

65. A hydraulic vehicle-support system is isolated, but its supporting load can descend if fluid escapes during hose removal. What must be addressed?

- A. Approved mechanical support and control of stored hydraulic energy.
- B. Only stopping the pump motor.
- C. Only closing the reservoir lid.
- D. Only that the current support height is correct.

66. A missing-message fault occurs after the source module is removed for testing. The original capture shows that message was present before disconnection. What should interpretation recognize?

- A. Every induced fault requires a new module.
- B. The later code proves the source was already faulty.
- C. The later loss can be a consequence of the diagnostic setup.
- D. The original message must have been fabricated.

67. A CVT ratio fails to follow command. The prescribed pressure test is low in the controlling circuit, while command and sensor checks meet requirements. What needs further diagnosis?

- A. A fixed conventional gear ratio as automatic CVT repair.
- B. Increasing tire pressure to raise hydraulic pressure.
- C. Immediate sensor replacement despite its passed check.
- D. The relevant hydraulic control and actuation paths.

68. A sensor becomes inaccurate only when a high-current load runs. Its supply reference stays correct, but ground voltage shifts above the supplied criterion through a shared connection. What is supported?

- A. The shared return path contributes to the input error.
- B. A new battery from reference voltage alone.
- C. Increasing signal voltage to conceal the offset.
- D. Sensor replacement without checking the captured ground shift.

69. A sunroof reverses at a repeatable point. The supply and command pass, while a damaged guide binds during its prescribed mechanical check. What should be addressed?

- A. A larger motor fuse to force motion.
- B. The localized guide and required roof movement.
- C. Replacing the remote key as guide correction.
- D. Disabling reversal as the completed repair.

70. A damaged lithium-based vehicle battery has different handling instructions from a serviceable unit. What should storage use?

- A. The serviceable storage method solely because dimensions match.
- B. An unapproved enclosed box without condition assessment.
- C. The instructions and authorized controls applicable to its actual damaged condition.
- D. A normal charger to verify that it still accepts energy.

71. A failed horn is replaced with the verified application. What should completion assess?

- A. Only mounting fit without checking component operation.
- B. Only that the steering switch clicks.
- C. Increasing circuit protection beyond its rating.
- D. Specified mounting, connection and sound operation.

72. What information should an authorized programming record preserve where required?

- A. Applicable module software identifiers and completion results.
- B. Only a generic file name without verified version identity.
- C. An assumed version copied from another module.
- D. Only the file's informal nickname.

73. A driveline vibration starts after a joint is rebuilt. The approved check finds caps improperly seated and joint movement restricted, while shaft runout passes. What should be corrected?

- A. The joint assembly and required free movement.
- B. Ignoring the bind because runout is acceptable.
- C. Replacing the straight shaft without addressing the caps.
- D. Changing axle ratio as joint seating.

74. A steering alignment procedure defines adjustment after confirming ride height. Why should that order be followed?

- A. Any ride height gives the same result.
- B. Geometry measurements depend on the specified vehicle condition.
- C. Only the driver's seat height affects suspension angles.
- D. Alignment tools automatically repair incorrect springs.

75. A traction-battery cooling inlet is clear, but the required fan fails its component test despite valid command and loaded supply. What is supported?

- A. Higher charge current as fan-rotation repair.
- B. Battery replacement without fan disposition.
- C. Assess the fan assembly under the thermal-system procedure.
- D. Replacing the clear inlet as the only cause.

76. A supplied recharge target is 480 g and verified added mass is 435 g. What additional mass reaches that target?

- A. 0.045 g.
- B. 4.5 g.
- C. 915 g.
- D. 45 g.

77. A diesel intake flap is cleaned after confirmed obstruction. What should verification include?

- A. Only a free movement at one end.
- B. Full approved travel, required setup and commanded response.
- C. Only clearing the warning.
- D. Permanent removal of the flap from the control system.

78. A repaired cable routes correctly but its terminal contact surface remains contaminated outside the supplied assembly criterion. What is needed?

- A. Restore the specified contact condition and repeat loaded verification.
- B. A software reset as contamination removal.
- C. Acceptance from route compliance alone.
- D. Extra insulation as contact-resistance repair.

79. A driveline service records 1.45 L drained and 0.20 L removed from a specified separate passage. What total removal is recorded?

- A. 1.25 L.
- B. 1.65 L.
- C. 0.29 L.
- D. 1.45 L.

80. A supplied clutch adjustment target is 12 mm and actual travel is 8 mm. What additional travel reaches the target?

- A. 20 mm.
- B. 0.667 mm.
- C. 4 mm.
- D. 1.5 mm.

81. A body-leak diagnostic procedure requires recording the first visible entry point during a controlled spray. Why is that useful?

- A. Recording location removes the need for further testing.
- B. Every exterior seal is proved sound by one dry area.
- C. The lowest wet surface always identifies the entry.
- D. Water can travel internally before appearing at a lower location.

82. An engine noise changes with oil temperature. During the approved inspection, one valve-train component's clearance exceeds its supplied criterion and the sound localizes there. What should be investigated?

- A. Every injector as independently failed.
- B. Starter replacement from engine noise alone.
- C. That valve-train interface and its lubrication or support condition.
- D. A new radiator solely because temperature changes the sound.

83. What does a CV joint generally allow within its approved arrangement?

- A. Torque transfer with the required angle or movement accommodation.
- B. Automatic change of every gear ratio.
- C. Direct regulation of transmission hydraulic pressure.
- D. Permanent correction of tire imbalance.

84. What is the purpose of message error checking in a protocol that specifies it?

- A. Repairing broken conductors automatically.
- B. Detecting defined transmission-data inconsistencies.
- C. Providing power to sleeping modules.
- D. Guaranteeing every physical sensor value is accurate.

85. A supplied final drive has 39 ring-gear teeth and 13 pinion teeth. What ratio results?

- A. 52:1.
- B. 26:1.
- C. 0.333:1.
- D. 3:1.

86. A contaminated clutch is repaired. What should completion address before operation?

- A. Only cleaning the disc's outside edge.
- B. The verified leak source, suitable friction parts and specified assembly.
- C. Only adjusting pedal height.
- D. A larger pressure plate without checking application.

87. A shared sensor ground is repaired after a load-sensitive shift. What should verification reproduce?

- A. The relevant accessory load and sensor-reference checks.
- B. Replacing the passed reference supply.
- C. Only the unloaded continuity condition.
- D. Only clearing sensor codes.

88. A supplied tire check records 230, 240, 235 and 235 kPa. What arithmetic mean pressure results?

- A. 117.5 kPa.
- B. 10 kPa.
- C. 940 kPa.
- D. 235 kPa.

89. A transmission's hydraulic pressure meets the supplied test, but the selected gear never transfers torque. The prescribed inspection identifies a broken engagement component in that path. What is supported?

- A. Pump replacement without reviewing the broken part.
- B. Tire-pressure adjustment as engagement restoration.
- C. The localized mechanical torque path needs repair assessment.
- D. Pressure acceptance proves every internal function is sound.

90. A module is correctly powered but a network signal reaches its connector on the wrong terminal after harness repair. The diagram confirms the mismatch. What should be restored?

- A. The specified terminal mapping and connection integrity.
- B. The module's software as physical pin relocation.
- C. All unaffected network nodes.
- D. A higher supply voltage to cross the terminal mismatch.

91. An evaporative vent restriction is repaired. What should verification include?

- A. Only tightening the filler cap.
- B. The specified vent-flow, sealing and original refuelling checks.
- C. Only clearing stored evaporative history.
- D. Increasing pump output to force normal refuelling.

92. A new coupling restores spline movement to range, but its required retaining clip is damaged during assembly. What must be resolved?

- A. Relying on torque load to keep the coupling together.
- B. Acceptance from the backlash reading alone.
- C. Adding thicker lubricant as clip support.
- D. Restore the approved retention and verify the complete coupling.

93. A manual clutch shudders during take-off. Its release travel passes, but inspection finds oil contamination on the flywheel and disc with a leaking engine seal nearby. What should diagnosis include?

- A. A different axle ratio as surface repair.
- B. A wheel-speed sensor as the seal-leak cause.
- C. The contamination source and affected friction surfaces.
- D. Release-cylinder replacement despite acceptable travel.

94. An EV propulsion complaint occurs when a coolant temperature input suddenly indicates excessive heat. Independent measurement remains normal, and its connector test identifies intermittent signal loss. What should diagnosis assess?

- A. Increasing cooling permanently without sensing repair.
- B. Immediate traction-motor replacement from reduced propulsion.
- C. A larger battery as terminal retention.
- D. The input path and resulting protective control response.

95. A spring seat is reassembled after a locating error. What should completion check?

- A. Driving with incomplete retention to settle it.
- B. Only the previous alignment printout.
- C. Specified seating, hardware and final height or movement conditions.
- D. Only that the spring remains visible.

96. What does a vacuum gauge measure in its suitable engine test arrangement?

- A. Pressure relative to the defined reference at its connection.
- B. Valve spring force without disassembly.
- C. Fuel octane by direct chemical analysis.
- D. Spark-plug resistance through the air gap.

97. An engine loses coolant under the prescribed pressure test. The specified inspection locates fresh leakage at a pump weep path, while other checked joints remain dry. What is supported?

- A. A richer fuel mixture as cooling-joint repair.
- B. The pump's sealing condition needs assessment.
- C. The radiator cap as the demonstrated pump leak.
- D. Immediate head-gasket replacement without additional evidence.

98. A replaced CVT control component is physically installed, but the supplied procedure's pressure and initialization checks remain outstanding. What should release require?

- A. Complete those applicable setup and performance checks.
- B. Only clearing the temperature warning.
- C. Acceptance from fastener tightening alone.
- D. A conventional automatic-transmission relearn substituted informally.

99. A measurement differs from expectation, and its instrument check fails on a known reference. Another approved instrument confirms the reference. What should be resolved first?

- A. Changing the component limit to match the failed check.
- B. Rejecting both references because they disagree with the first display.
- C. The first instrument's validity before judging the vehicle component.
- D. Replacing the vehicle component from the unverified result.

100. A pressure-sensor location routine is required after tire rotation. What should completion verify?

- A. Entering identical identities for every wheel.
- B. Correct wheel associations and applicable monitoring response.
- C. Only matching tire brand names.
- D. Only clearing the dashboard icon.

101. A binding sunroof guide is repaired. What should checks include?

- A. Only one movement before the binding point.
- B. Permanent removal of roof-motion limits.
- C. Only clearing body history.
- D. Specified travel, setup and protective reversal function.

102. A fan's speed is low although voltage across its connected motor meets specification. The prescribed check finds a damaged impeller contacting its case, and current is excessive. What needs assessment?

- A. The mechanical obstruction and affected motor assembly.
- B. The command switch as proved absent.
- C. A larger fuse to accept the same abnormal load.
- D. A higher supply voltage as case-clearance repair.

103. A vehicle must be positioned for a test that can command its cooling fans remotely. What should the technician establish?

- A. Only removal of the fan's cosmetic cover.
- B. A secured vehicle and clear access around possible fan movement.
- C. Only a stopped engine before the command.
- D. Only a helper watching from inside the fan area.

104. An incompatible HVAC sensor is replaced with the specified application. What should completion verify?

- A. Only that the display is nonzero.
- B. An arbitrary data offset instead of checking the installed sensor.
- C. Plausible input and the required control response across relevant conditions.
- D. Only clearing the previous warning.

105. A transmission overheat occurs under the original towing condition. Its cooler inlet flow is adequate, but measured outlet flow fails and the cooler's prescribed restriction check is excessive. What should be assessed?

- A. A larger transmission fill regardless of level.
- B. A tire change as cooler-flow repair.
- C. Controller replacement solely from a temperature warning.
- D. The cooler's restriction and connected thermal circuit.

106. What does a bump stop provide in its intended suspension arrangement?

- A. Direct regulation of brake-line pressure.
- B. A controlled limit or interface near the specified travel extreme.
- C. Permanent support replacing the spring in all states.
- D. Automatic adjustment of every alignment angle.

107. A charging-inlet lock is repaired after mechanical damage. What should final checks verify?

- A. Only the exterior connector fit.
- B. Tape holding the connection as functional proof.
- C. Retention, state reporting and the specified charging sequence.
- D. Only disappearance of the stored code.

108. A coolant pump is replaced after verified leakage. What should related installation checks include?

- A. Specified sealing, drive and cooling-circuit restoration.
- B. Only one start without verifying the cooling circuit.
- C. Extra sealant over every coolant passage.
- D. Only pulley fit without the specified drive checks.

109. A supplied spacer arrangement needs 2.8 mm total, and an approved existing spacer is 1.9 mm. What additional thickness is calculated?

- A. 0.09 mm.
- B. 1.47 mm.
- C. 4.7 mm.
- D. 0.9 mm.

110. A suspension height remains incorrect with specified load and tires verified. Inspection finds a spring seat assembled outside its locating feature after repair. What should be corrected?

- A. Permanent additional cargo to balance the height.
- B. An engine-control update as spring alignment.
- C. Toe adjustment as seat-location repair.
- D. The spring-seat installation and required support condition.

111. An electronic parking-brake adjustment is corrected. What should verification include?

- A. Specified actuation, release and holding performance.
- B. Disabling the warning to show completion.
- C. Only one short movement with no holding test.
- D. Only both actuator noises.

112. A loaded node causing bus disturbance is replaced. What should final checks include?

- A. Leaving the affected branch disconnected permanently.
- B. Correct application, setup and communication under the original conditions.
- C. Only seeing the new module in a scan once.
- D. Only its matching connector shape.

113. A diesel command records 12 ms active time in a stated 40 ms period. What active fraction is calculated?

- A. 28%.
- B. 0.3%.
- C. 30%.
- D. 333.3%.

114. What is the role of an HVAC mode door in its intended arrangement?

- A. Setting the compressor's mechanical oil capacity.
- B. Changing engine-coolant chemistry.
- C. Directing airflow toward the selected outlet paths.
- D. Metering refrigerant charge at the service valve.

115. A gasoline vehicle refuels poorly. The prescribed vapour-path test finds its vent valve obstructed while the filler path is clear. What should be localized?

- A. The identified vent restriction and related evaporative function.
- B. A filler restriction despite its satisfactory path check.
- C. Immediate pump replacement from refuelling difficulty.
- D. A liquid-pressure regulation fault as the sole vent cause.

116. A network-resistance test requires isolating a defined section. Why should the technician follow that boundary?

- A. Any connected vehicle state produces an identical reading.
- B. Parallel and connected paths can change the measured resistance.
- C. A generic resistance target applies to every bus.
- D. Isolation proves every module is internally sound.

117. An axle-lubricant check requires identifying whether additives are explicitly specified. What should the technician do?

- A. Add a generic modifier to every axle.
- B. Choose solely by fluid colour.
- C. Double additives to avoid diagnosis of chatter.
- D. Use the actual lubricant and additive instructions for that unit.

118. What does a belt pretensioner generally do when activated as designed?

- A. Guarantee every collision causes full airbag deployment.
- B. Provide the same function as a belt-force limiter.
- C. Reduce specified belt slack as part of the restraint response.
- D. Inflate all restraint cushions through one shared mechanism.

119. A horn remains silent. Command and loaded supply reach it, and the prescribed isolated component test fails while wiring checks pass. What is supported?

- A. The horn assembly needs assessment or replacement under the procedure.
- B. All body modules must be replaced.
- C. A larger fuse as component-function repair.
- D. The steering switch is proved open despite delivered command.

120. Why must an electrical repair preserve required strain relief?

- A. It automatically eliminates every thermal insulation fault.
- B. Mechanical movement must not compromise the restored connection.
- C. Strain relief replaces all circuit insulation.
- D. Any loose cable automatically improves terminal retention.

121. A path loses 0.24 V with 12 A flowing. Using $R = V/I$, what effective resistance results?

- A. 0.02 ohm.
- B. 0.002 ohm.
- C. 2.88 ohms.
- D. 50 ohms.

122. A battery-monitor current value remains zero while an independent appropriate clamp detects current. The installed cable bypasses the specified sensor path. What should be corrected?

- A. Battery replacement solely from the zero data value.
- B. A sensor calibration as automatic cable rerouting.
- C. Charging-voltage increase to force the current through the sensor.
- D. The intended current routing and measurement arrangement.

123. A diesel intake-control complaint follows cleaning work. Command and feedback disagree, and the specified inspection finds cleaning debris obstructing the driven flap. What should be addressed?

- A. Controller replacement without removing debris.
- B. A larger actuator fuse as flap cleaning.
- C. All injector correction codes as debris removal.
- D. The localized obstruction and required mechanical function.

124. A brake level-input repair is complete. What should verification compare?

- A. Only the sensor connector's appearance.
- B. Only whether the icon can be erased.
- C. Actual reservoir condition and the required warning response.
- D. Filling beyond the specified range to keep the light off.

125. An engine repair requires a new specified sealing washer after a connection is opened. What should assembly use?

- A. Any washer with the same visible colour.
- B. The required new component and complete reassembly checks.
- C. Additional torque as washer renewal.
- D. The removed washer flattened by hand.

Practice Exam 15: Answer Key and Explanations

1. D — Multiply total final volume by the supplied fraction: $15 \times 0.20 = 3$ L concentrate. The remaining twelve litres is water under the stated simplification. Use the approved formulation and mixing method for the real vehicle; a percentage alone cannot establish suitability of another coolant or inhibitor package.

2. B — Appearance can guide inspection, but the procedure assigns additional evidence for damper function. Apply those checks and distinguish fresh leakage from unrelated residue. A clean surface does not prove performance, just as dirt alone does not establish the specific internal fault or acceptance status of the installed component.

3. A — The physical obstruction prevents the required connector-lock state despite command. Restore it through the vehicle's approved charging-interface procedure. The inhibited sequence does not by itself prove a supply or battery-capacity problem, and bypassing the input would hide rather than repair the mechanical retention function it monitors.

4. C — The system still lacks its required calibrated relationship even though other checks pass. Resolve the indicated setup issue using the applicable procedure and verify response. A new component does not prove correct initialization, and another vehicle's value or disabled monitoring cannot establish the installed sensor's intended operating reference.

5. D — Successful programming and correct variant setup are separate completion requirements. Resolve the failed option check through the authorized process and verify operation. A transferred file does not guarantee that every installed function is configured correctly, and electrical termination changes cannot substitute for the specific option data required by the module.

6. D — The repair must re-establish the relation between actuator, door and outlet flow. Verify the assigned range and modes rather than only the actuator, which could move during the fault. A fixed position or fitting clip does not demonstrate complete control of the repaired air-distribution path.

- 7. B** — Firm feel does not prove the intended distribution of hydraulic pressure. Verify the valve application and prescribed measurements for that axle. The documented mismatch provides a component-suitability issue independent of subjective pedal firmness, and unrelated tire or inventory changes cannot qualify the actual regulating function.
- 8. A** — The controlled separation and independent branch test distinguish the attached node from its satisfactory wiring. Assess its actual loading condition before assigning repair. A wiring pass does not qualify the device connected to that path, and network recovery alone would be less specific without the separate evidence locating the abnormal load.
- 9. C** — The connected lines can reintroduce contamination into repaired components, so the whole affected path must meet the required condition. A new cooler does not clean adjacent passages. Follow the approved process rather than relying on dilution or software, neither of which establishes removal of retained physical debris.
- 10. B** — Dryness confirms one observed condition but does not establish regulation under the demand that the procedure requires. Complete the specified tests before release. Fault clearing and changed idle cannot replace evidence that the repaired system meets both its operating pressure behaviour and containment requirements under relevant conditions.
- 11. D** — Add the stated collected volumes: $240 + 180 + 160 = 580$ mL. The sum documents this operation's collection rather than a universal brake-service quantity. Actual completion must follow the prescribed fluid condition, bleeding method and functional criteria, not merely reach a calculated total from another scenario.
- 12. A** — The application mismatch and independently verified condition support an input problem rather than an immediate refrigerant decision. Install or validate the correct sensor under the procedure. A changing display does not establish accurate calibration, and a fixed simulated value does not restore the condition-dependent information required by normal HVAC control.
- 13. C** — The connected measurement and component test localize an electrical interruption at the heater rather than an absent request. Verify the mirror assembly and repair method under its instructions. Increasing protection cannot restore an open resistive element, and unrelated climate components do not provide its direct heat-generating path.
- 14. B** — Divide collected volume by seconds and multiply by sixty: $1.2 \div 40 \times 60 = 1.8$ L/min. The result applies at the given test conditions. Compare it with the vehicle's specified delivery requirement rather than using the computed rate as a universal standard for every pump or fuel system.
- 15. C** — The independent level check and valid substitution response distinguish actual inventory from an incorrect local input. Assess the sensor and its connection or mechanism under the procedure. More fluid is not justified merely to change a faulty warning when the reservoir already meets its specified condition.
- 16. A** — Divide the supplied voltage by resistance: $16 \div 8 = 2$ A. This uses a simple fixed-resistance model. An actual electronic or temperature-varying load may need additional characterization, so the

numerical result does not replace the applicable loaded circuit measurement for a component outside the stated assumptions.

17. D — Actuator movement demonstrates one function but does not establish the required mechanical holding result. The inspected adjustment provides a specific condition to resolve. Diagnose it through the parking-brake procedure rather than assuming that electrical motion guarantees suitable friction engagement or changing a verified control input without evidence.

18. D — The repair concerns the information regulating seat heat, so verify its plausibility and the system response. Element continuity assesses another function. A cleared warning or fixed substitute cannot establish accurate sensing across actual temperature conditions, and the control must remain capable of responding to the real heated component.

19. B — The controlled movement reproduces a physical short path that the stationary continuity check does not expose. Restore conductor and insulation condition and protect the route. A favourable resting result cannot negate the demonstrated fault, and enlarged protection would leave the short present rather than establish a durable repair.

20. A — The repair still has an independently identified supply condition affecting the mechanism. Resolve and verify it under the engine procedure. A corrected dimension does not prove adequate lubrication, and changes intended to mask symptoms cannot establish that the restricted passage now delivers the flow required during operation.

21. C — The grommet protects the repaired harness at its physical interface, so restore it along with the required supports. Present continuity does not establish resistance to later abrasion. Closing trim or leaving additional loose cable cannot qualify the route if the specified protection at the opening remains absent.

22. A — The event captures a missing state input while the main feed remains present, so diagnose that activation path. A powered module may not respond in every state if its required wake condition is absent. This separates an operating-state fault from assuming that intermittent scan access always indicates failed network hardware.

23. D — The correction needs confirmation that the joint moves and is retained correctly in its intended arrangement. External appearance or flange fit cannot establish all internal bearing and geometry conditions. Resolve binding before operating tests, then verify the relevant driveline response under the prescribed safe method.

24. B — The input reports the designed vibration information for the control strategy. It does not mechanically adjust clearances or directly analyse tank chemistry. The meaning and accuracy of the signal require applicable tests, because a reported event can reflect true combustion conditions, other vibration or a sensing-path fault.

25. C — Balancing addresses the cell-state relationships defined by the battery management design. It does not provide unlimited capacity or perform mechanical propulsion. Its actual method and service

implications vary, so a balancing indication cannot substitute for the separate high-voltage isolation, connection and battery-condition requirements assigned to the vehicle.

26. B — Correct part selection is necessary but does not establish satisfactory installed performance. Resolve the remaining hydraulic condition through the procedure and accurately document the tests. The failed measurement must be addressed rather than overridden by the replacement action or hidden through unrelated adjustments and altered records.

27. A — The rocker forms part of the mechanical actuation path for the valve in a design that uses it. Its geometry and condition affect that assigned function. It is not a fuel passage, crankshaft main support or electrical exhaust sensor, so inspection must follow the actual valve-train arrangement.

28. D — The fasteners and retainers form part of the designed suspension joint and need complete suitability. Wrench size and current ride stance do not establish material or locking characteristics. More torque cannot universally qualify another component, so follow the required hardware and assembly conditions for the repaired support path.

29. C — Divide active interval by total period and multiply by one hundred: $3 \div 15 \times 100 = 20\%$. Both times share the same units. This describes the stated waveform, not a direct combustion-energy value, which would need additional information about the electrical and ignition-system conditions.

30. C — The assembly needs correct containment and installation, and the opened circuit must receive the applicable service process. Appearance and initial compressor operation cannot prove those conditions. A generic clamp does not qualify the pressure boundary or replace the hose's specified retention, preparation and final leakage checks.

31. A — The adapters and fixture form the pressing load path and must suit the actual workpiece and intended force. Inspect and secure them as instructed. A moving handle or available maximum force does not establish compatibility, stability or acceptable condition of the parts carrying the load during the operation.

32. D — The controlled test links abnormal assist command to the biased input while the physical load is unchanged. Diagnose that sensing path under the steering procedure. Unequal assist alone could have several causes, but the successful substitution provides more specific evidence than replacing the rack or altering electrical protection.

33. B — The limiting function depends on the mounting relationship as well as the correct stop. Assess and restore the specified bracket geometry through the approved process. A suitable new component cannot qualify its damaged support, and unrelated wheel changes or component deletion do not establish the intended suspension envelope.

34. A — Divide consumed energy by distance and multiply by one hundred: $35 \div 250 \times 100 = 14$ kWh per 100 km. This records the stated trip's observation. Usable battery capacity and health need separate evidence, and another route or thermal condition can produce different consumption without this arithmetic being incorrect.

- 35. C** — The drive interface affects pump actuation and must match the verified engine application. Mounting fit does not establish that relationship. Resolve the part selection rather than adding unapproved spacers or altering fuel supply, neither of which qualifies a component whose specified actuation geometry differs from the installation.
- 36. D** — Divide event count by duration: $3,600 \div 18 = 200$ events per second. The event definition comes from the stated capture method. This average does not identify bus speed, message size or fault cause without the additional information needed to interpret those quantities in the actual network.
- 37. B** — The blower supplies airflow, but the detached linkage prevents the selected distribution path from being established. Assess and restore the actual door drive rather than increasing unrelated capacity. Actuator motion alone does not demonstrate that the mechanically disconnected mode door follows the command during the defrost complaint.
- 38. D** — The coil is de-energized, but the physically stuck contacts maintain the load path. Assess and replace or repair under the circuit procedure. A continued running load does not automatically prove an active command; the test separates the control state from the failed switching mechanism that should disconnect its supply.
- 39. B** — The physical pressures are satisfactory while the location association remains outdated. Complete the applicable identity or position process rather than changing tire conditions to fit the display. A monitoring error can concern which wheel a valid value represents, not necessarily an inaccurate sensor or an actual inflation problem.
- 40. A** — The independent temperature and substitution response distinguish incorrect input from an actual overheated cushion. Assess that sensing path before assigning a control-module repair. Increasing heating would not validate the signal, and the initial warning alone is insufficient evidence of a real thermal condition when direct measurement contradicts it.
- 41. C** — Multiply the given perpendicular force by its lever arm: $50 \times 0.30 = 15$ N·m. The perpendicular assumption supplies the geometry for this simple relationship. Actual controlled fastening must use the specified tool and method rather than substituting an unverified hand-force estimate for a required torque setting.
- 42. B** — The equipment condition prevents reliable safe use in the required HV test. Obtain suitable verified leads and complete the actual sequence. An expected low voltage does not qualify damaged insulation, and disconnect removal is not by itself proof that the defined work points have reached the condition required before opening components.
- 43. C** — Cooling performance and containment are separate requirements. The demonstrated leak needs an approved repair and verification before release, even if heat transfer is presently satisfactory. Changing cabin airflow does not repair a refrigerant boundary, and external lubricant cannot establish that the crimped connection is suitable under its tested condition.

- 44. D** — Multiply input by reduction and supplied efficiency: $240 \times 4 \times 0.85 = 816 \text{ N}\cdot\text{m}$. The ideal 960 result omits the specified losses. This is the simplified operating model provided by the question rather than a universal torque output of a particular vehicle gearbox.
- 45. A** — The independent result distinguishes actual pressure from faulty indication, while the local signal test narrows the measurement path. Diagnose that sensor and connection before changing hydraulic components. A pressure fault display is not proof of low real pressure when another approved measurement establishes a normal condition at the same operating state.
- 46. D** — The spill creates an exposure that changes as the exhaust heats. Clean and assess it under the approved procedure before running the test. Evaporation or a shorter duration does not demonstrate control of ignition, smoke or hot-surface hazards, and a cloth can introduce another combustible material at the same location.
- 47. A** — The replacement needs correct assembly and credible readings under the prescribed checks. A nonzero value does not prove accuracy or containment. Follow the applicable pressure and signal procedure rather than using appearance or an arbitrary correction to make data seem normal without validating the installed measurement.
- 48. B** — The breaker is part of the circuit's assigned protection and acts under its designed conditions. It does not restore damaged material or qualify additional load. The actual type, rating and reset behaviour matter, so repeated operation still needs fault diagnosis rather than treating protection as a component repair mechanism.
- 49. C** — Subtract the supplied minimum from the measurement: $22.45 - 22.0 = 0.45 \text{ mm}$. The margin is not automatic machining permission. Apply the actual disc's refinishing and other acceptance criteria, because being above one minimum does not establish conformity with every required brake-component condition.
- 50. C** — The measurements distinguish the coupling from gear and support alternatives. Assess its spline interface under the driveline procedure before assigning the repair. A clunk is only a symptom, but excessive localized movement provides direct evidence that should not be overridden by replacing components whose applicable checks are acceptable.
- 51. A** — Communication can be electrically successful while the transmitted function or interpretation is incompatible with the installed vehicle. Here reception and wiring pass, but the replacement's documented variant differs from the required one. Resolve its application and configuration before blaming the receiving units. Resistance or supply-voltage changes cannot make the wrong function data appropriate. After correction, verify both message availability and the affected vehicle behaviour, because data reaching its destination is only one part of a valid configured network.
- 52. D** — Restored switching does not resolve the excessive demand that may affect the new relay and wiring. Diagnose the load and verify the complete circuit under its specification. Repeated replacements or enlarged protection can conceal the symptom while leaving the operating condition outside the intended design.

- 53. B** — Subtract the lower temperature from the higher: $17 - 12 = 5^{\circ}\text{C}$ difference. This reports the given comparison, not a universal fault threshold. Interpretation requires the specified mode, door arrangement, airflow and applicable vehicle criterion before the difference can identify a repair path.
- 54. B** — Add the simultaneous branch currents: $3 + 7 = 10\text{ A}$ supplied to those two paths. This assumes no other branch current in the stated model. It does not establish the protection or conductor rating for an actual vehicle circuit without the complete design and applicable operating requirements.
- 55. C** — The sensor's mechanical interface forms part of the vibration-sensing arrangement, so follow its mounting instructions as well as electrical verification. A nearby convenient position or unverified material does not establish the intended signal coupling. Complete the specified checks before interpreting the new input as valid under engine operation.
- 56. D** — Multiply the six stated equal pieces by five millimetres: $6 \times 5 = 30\text{ mm}$ total. The calculation follows the arrangement explicitly supplied by the problem. It does not authorize substituting random stacks or establish strength and retention for a real bracket whose installation instructions define another construction.
- 57. A** — The gauge measures cylinder pressure produced by the specified test arrangement. Its reading needs the correct cranking and connection conditions for interpretation. It does not directly measure electrical actuation, fluid formulation or mechanical lift, so those properties require their own suitable tools and tests.
- 58. C** — The input supplies the pressure information assigned by the monitoring design, rather than measuring wheel support or brake friction. Actual inflation must still be independently checked when indication is suspect. Sensor identity and reported value are related but separate aspects of establishing that the system describes the correct wheel accurately.
- 59. D** — The low-pressure feed has been verified, while the high-pressure stage depends on the mechanical drive that the inspection finds worn. That combination directs further testing toward pump actuation and output rather than automatically replacing the supplying pump. Follower wear is important evidence but does not establish every internal component's condition. Use the applicable procedure to assess associated damage and pressure response. The repair decision should connect the demonstrated mechanical path to the required hydraulic performance under demand.
- 60. B** — The application mismatch can change where the limiting interface engages. Verify the correct component and travel before changing passed spring or damper parts. Deleting the stop is not a qualified correction, because it also removes the protection and range relationship intended by the approved suspension arrangement.
- 61. A** — The repaired path must allow the sensor to observe the intended current and preserve the relevant power-circuit function. Verify physical and measured behaviour under the procedure. Unchanged length and unrelated identification do not prove the routing, while an estimate would conceal rather than validate the installed current measurement.

62. B — The repaired input must represent real temperature and support the intended control and protection. Verify those functions under the applicable procedure. Coolant level and cleared memory do not establish signal accuracy, while permanent substitution removes the condition-dependent measurement rather than demonstrates its restoration.

63. C — Multiply the stated reference by 0.90: $200 \times 0.90 = 180$ kPa. The percentage criterion belongs to this problem's supplied comparison, not every engine compression specification. Actual testing still requires the applicable cranking and setup conditions before readings can validly be judged against that calculated threshold.

64. D — Subtract the target from initial toe: $3.5 - 0.5 = 3$ mm reduction. Both values share the given reference direction. The arithmetic does not determine how to divide adjustment between sides; steering centring and individual geometry must follow the actual alignment procedure and final verification.

65. A — The load remains mechanically supported through a pressurized system that is about to be opened. Establish the prescribed mechanical restraint and energy controls first. Motor shutdown or present height does not prevent descent if the retained fluid path is released, and a reservoir lid does not secure the lifted load.

66. C — The timing and original capture connect the later message loss to removal of its sender. Record and restore the test configuration rather than treating that induced event as proof of a pre-existing component defect. This does not eliminate the need to diagnose the original complaint; it preserves the context of evidence created during testing.

67. D — The independent checks separate valid command and feedback from an inadequate hydraulic condition in the affected path. Follow the CVT-specific diagnostic method rather than applying a conventional gear assumption. The tests narrow the missing function without themselves identifying exactly which valve, supply or internal leakage component caused it.

68. A — The measurement identifies a changed local reference while the supplied reference feed remains suitable. Test and repair the shared ground under the triggering load. The sensor value can be distorted by its circuit conditions, so an inaccurate display does not by itself prove the sensing element has failed internally.

69. B — The physical guide defect explains the missing movement despite suitable electrical conditions. Repair and verify the mechanism through the procedure. Reversal can protect against excessive load, so bypassing it or forcing greater current leaves the identified obstruction present and changes safeguards rather than restores the intended roof operation.

70. C — Damage changes the handling assessment, so follow the applicable manufacturer's process and authorized storage controls. Matching size does not establish the same hazard condition. Unverified charging or containment cannot replace the specific evaluation and protection needed for the unit received by the workshop.

71. D — The replacement needs suitable mounting and circuit connection and must perform its assigned warning function. A switch sound or dimensional fit does not demonstrate actual output. Follow the

installed system's checks rather than altering protection to accommodate an unverified assembly or accepting a part solely from appearance.

72. A — The record needs verified identifiers and results relevant to the actual update so the installed state can be traced. A nickname or another unit's assumed version is not equivalent evidence. Follow the applicable documentation requirements rather than recording unrelated vehicle details as proof of software completion.

73. A — The work timing and inspected cap condition localize an installation fault despite suitable shaft geometry. Correct the joint under its assembly procedure and verify motion. Runout covers a different requirement and cannot qualify a joint whose bearing seating prevents the operating movement it was intended to allow.

74. B — The procedure establishes the physical state in which its alignment values are valid. Confirm it before adjustment so a support or loading discrepancy is not hidden by setting geometry at the wrong condition. The measuring equipment does not repair springs or make arbitrary vehicle heights equivalent to the prescribed setup.

75. C — The tests establish available airflow entry and external electrical conditions while the fan fails its defined function. Resolve that component under the applicable instructions. A battery thermal warning alone would not localize the cause, but these controlled checks support the cooling device before an entire battery replacement decision.

76. D — Subtract the addition from the stated target: $480 - 435 = 45$ g. Both quantities refer to the given service operation. Follow the actual charge and equipment procedure; this arithmetic does not authorize adding by typical pressure readings or applying the same quantity to another vehicle system.

77. B — The repaired mechanism must complete the range and control behaviour assigned by the vehicle procedure. One favourable position does not demonstrate the whole operating envelope. Warning clearing and deleting the component cannot establish that the intended intake-control function has been restored after debris removal.

78. A — The route and contact surface meet different requirements. Resolve the remaining interface contamination and verify current delivery under the relevant load. Correct cable placement cannot establish low-resistance contact at the terminal, and insulation or software changes do not physically restore the mating surface specified for the electrical joint.

79. B — Add the two stated removals: $1.45 + 0.20 = 1.65$ L. This documents collected fluid from the specified operation and does not establish the final fill requirement. Retained quantities and the unit's actual level-check method still govern the subsequent service process.

80. C — Subtract the measured travel from the specified target: $12 - 8 = 4$ mm additional travel. This calculation does not identify the adjustment mechanism or authorize an arbitrary linkage change. Follow the actual actuation and verification procedure so the final result meets all applicable release and engagement requirements.

- 81. D** — The earliest observed entry helps distinguish the source from where water later collects after travelling through trim or structure. A low wet area alone may mislead diagnosis. Controlled exposure and recording provide evidence for the next focused test rather than automatically qualifying every untested body interface.
- 82. C** — The localized noise and measured clearance provide relevant evidence at the valve train. Assess the component and related conditions under the engine procedure. Temperature sensitivity is useful context but not a specific fault verdict; combining it with location and an out-of-range measurement supports a more focused mechanical investigation.
- 83. A** — The joint transmits torque while accommodating movement assigned by its design and installation. It does not regulate hydraulic pressure or balance every wheel. Its permissible geometry, retention and lubricated condition still matter, so suitable motion should not be assumed simply because a connected shaft can turn.
- 84. B** — Error checking addresses defined data-integrity conditions within the protocol. It does not establish truth of the measured physical input or physically restore wiring. A message can be transmitted without detected corruption while containing a biased sensor value, so communication integrity and measurement accuracy remain different diagnostic questions.
- 85. D** — Divide the driven ring-gear count by the driving pinion count: $39 \div 13 = 3$. This gives the stated reduction. Tooth-count difference is not the ratio, and the reciprocal describes the reverse relationship rather than the final-drive value asked for in the problem.
- 86. B** — The repair must resolve contamination and its origin as well as restore the required clutch components. Otherwise the new or cleaned surfaces can be affected again. Follow the engine-seal and clutch procedures; pedal adjustment and an unverified larger part do not demonstrate the required condition of the actual torque-transfer interface.
- 87. A** — The original fault appeared under a particular electrical demand, so retest that condition and the repaired return reference. An unloaded pass may miss remaining resistance. Clearing codes or changing a satisfactory reference supply does not provide evidence that the corrected common ground now remains suitable while the load operates.
- 88. D** — Add the four pressures for 940 kPa and divide by four to obtain 235 kPa average. This mean does not replace checking each tire against its applicable individual target. A set average can appear correct while one wheel differs from its specified requirement or another tire's condition.
- 89. C** — Hydraulic pressure and mechanical continuity are separate requirements. The identified broken component prevents the intended torque path even when the pressure test passes. Use the transmission procedure to assess associated damage and repair, rather than treating one satisfactory supply measurement as proof of complete gear engagement.
- 90. A** — The inspected mapping error interrupts the intended signal interface despite adequate power. Restore and verify the actual connections before judging module response. Software and voltage

changes cannot substitute for connecting a conductor to the assigned terminal, and unrelated node replacement would not correct the repaired housing's physical error.

91. B — The repair needs confirmation of the path that failed and the operating complaint it affected. Follow the applicable checks rather than treating cleared memory as proof of function. Filler-cap tightening or greater pump output does not demonstrate restored vapour movement through the repaired vent arrangement.

92. D — The coupling must meet both movement and retention requirements. A damaged clip leaves an unacceptable load-path condition even if clearance now passes. Replace or disposition it through the approved process; fluid viscosity and normal torque do not provide the mechanical retention assigned to the specified hardware.

93. C — The physical contamination and nearby leak provide a path that can affect engagement despite satisfactory release. Assess both the source and friction components under the procedure. A shudder alone does not isolate one part, and replacing actuation or altering ratios would not remove oil from the torque-transfer interfaces.

94. D — The direct measurement and connector fault show an unreliable thermal input rather than proved overheating. Diagnose that path and verify normal protection behaviour. Reduced propulsion may be the strategy's response to reported conditions, so the symptom alone cannot establish a damaged motor or justify ignoring the inaccurate information causing it.

95. C — The repair must restore the entire support relationship and verify the vehicle state affected by the error. A previous alignment or visible spring does not establish final seating. Follow the assembly and settling instructions where applicable, but do not use operation to qualify a connection whose required retention is unfinished.

96. A — The gauge indicates pressure relative to its stated reference at the connected point. Interpretation depends on the intended engine condition and test path. It is not a chemical fuel analyser or direct force measurement, and its reading should not be treated as an automatic component verdict without the applicable diagnostic context.

97. B — The controlled test and fresh local leak identify a pump-related containment fault to assess. They do not by themselves prove an internal head-gasket failure. Other dry checks narrow candidates within their scope, while fuel adjustment cannot restore the sealing boundary from which coolant is actually escaping.

98. A — Installation is one stage while the required control and hydraulic verification still need completion. Use the correct architecture-specific procedure. Fasteners and a cleared warning cannot demonstrate that the replacement has the appropriate calibration or produces the specified pressure response under the vehicle's CVT operating conditions.

99. C — The failed check identifies uncertainty in the measurement instrument while the reference is independently confirmed. Resolve that instrument and repeat the actual test before a repair decision. A

displayed value is not credible component evidence when its own verification shows the measuring chain cannot establish the required accuracy.

100. B — The routine must link sensor information to the intended wheel arrangement and complete its required checks. A cleared icon does not establish correct association. Brand matching and duplicate identities cannot provide the independent wheel references the monitoring system expects for valid location-specific information after rotation.

101. D — The repaired mechanism must operate throughout the required range and retain its protective control. Verify setup and response using the applicable process. A partial movement would not expose the original fault location, while deleted limits or cleared codes do not demonstrate complete restoration of the intended roof function.

102. A — The appropriate voltage and excessive current accompany a directly observed mechanical bind. Inspect and resolve that assembly under the procedure. Supply or command changes do not repair impeller clearance, and circuit protection should not be enlarged to conceal a load that exceeds its specified operating condition.

103. B — Remote commands can start fans even when the engine is stopped, so secure the vehicle and keep people and tools clear of the movement zone. The test setup must follow its approved controls. Engine silence does not establish that the commanded rotating assembly cannot move during the procedure.

104. C — The correct application must still provide a valid measurement and support the intended strategy after installation. Verify response under the actual procedure. A nonzero display or cleared warning does not establish accuracy, while an unverified offset can mask an unresolved input condition rather than demonstrate a correctly functioning replacement.

105. D — The inlet and outlet comparison with the independent restriction result localizes a cooling-flow problem. Assess the cooler and related passages under the procedure. A warning alone would not identify the cause, but these tests provide a direct thermal-circuit candidate that fluid overfill or unrelated controls cannot resolve.

106. B — The stop serves the travel-limiting role assigned by the suspension design. It is not a general replacement for spring support or hydraulic control. Correct part and installation matter because a misplaced or unsuitable stop can affect motion before the range intended by the vehicle's suspension requirements.

107. C — The repair must restore both physical retention and the control information that permits the intended charging sequence. Verify the required states under the applicable method. Fit and cleared history do not demonstrate a working lock, and temporary tape cannot qualify the mechanical and monitored functions assigned to that interface.

108. A — The pump must be installed to the correct sealing and drive requirements and the opened circuit restored as specified. Starting alone does not demonstrate circulation or leak integrity. Excess

material in passages can interfere with flow, while appearance does not establish the required mechanical or thermal function.

109. D — Subtract the existing approved thickness from the supplied total: $2.8 - 1.9 = 0.9$ mm. The calculation does not authorize arbitrary stacking or material substitution. The actual assembly procedure must define the acceptable spacer selection and verification for the engine mechanism being set up.

110. D — The controlled checks exclude simple loading and tire differences while inspection identifies an actual assembly mismatch. Restore the specified seat relationship and verify the resulting ride condition. Chassis toe or software cannot locate the spring properly, and adding cargo would conceal rather than correct the support installation.

111. A — The corrected mechanism must satisfy its required hold and release functions as well as motor movement. Verify them under the prescribed process. Audible actuation was possible during the fault, so repeating that observation alone cannot establish restoration of the friction and control relationship needed for parking-brake operation.

112. B — The replacement needs the correct identity and configuration and must operate under the condition that exposed abnormal loading. One successful appearance covers a limited observation. Connector fit or removing the branch cannot demonstrate restoration of the complete expected network and its required functions in the released vehicle.

113. C — Divide active time by period and multiply by one hundred: $12 \div 40 \times 100 = 30\%$. This is the stated command's duty fraction. It does not directly quantify delivered fuel or pressure without the actuator, hydraulic and operating information needed to relate the electrical timing to physical output.

114. C — The mode door selects the air-distribution route assigned by the ventilation design. It is distinct from refrigerant metering or fluid formulation. Commanded selection still needs verification of actual movement, because a correct request or actuator signal does not ensure the air door reaches the position that delivers the intended outlet flow.

115. A — The controlled check distinguishes a clear filler from an obstructed vent route, providing a direct candidate for the refuelling complaint. Assess that evaporative path under the procedure. The symptom alone would not identify the cause, but the demonstrated restriction is more relevant than unrelated ignition or liquid-pressure components.

116. B — The measurement represents all electrical paths included by its setup. Follow the prescribed isolation so the reading matches the applicable comparison. Connected terminations, gateways or other circuits can alter the value, and one resistance result cannot universally qualify every node or be judged against an unrelated network's textbook example.

117. D — The fluid's required friction and material properties depend on the axle design. Verify the actual specification before adding anything. Colour and broad symptom descriptions cannot establish additive compatibility, and extra concentration is not a diagnostic repair for a unit whose procedure does not authorize that material or quantity.

118. C — The pretensioner performs the slack-reduction function assigned by the restraint design. It does not guarantee all deployment events or substitute for anchorages. Its operation and service precautions are vehicle-specific, so diagnosis and replacement must follow the applicable SRS information rather than a generic activation assumption.

119. A — The tests verify external command and delivery while the local component fails its defined function. Assess the horn assembly rather than replacing a verified request path. A silent horn alone would not localize the cause, but these independent checks provide evidence that distinguishes the component from its supplying circuit.

120. B — The connection needs mechanical protection as well as an electrical path. Suitable strain relief prevents expected harness movement from imposing unapproved load on terminals or splices. It does not replace insulation or configuration, and uncontrolled loose cable can create motion and abrasion instead of preserving the intended secure interface.

121. A — Divide the stated drop by current: $0.24 \div 12 = 0.02$ ohm. This calculates effective resistance at that operating condition. Acceptance still depends on the required voltage-loss limit and test setup for the path, so the number should not be treated as a universal maximum for every vehicle connection.

122. D — The physical bypass means the sensor does not see the current observed elsewhere. Restore the prescribed path and verify readings before condemning its hardware. A zero value can accurately describe an excluded measuring route while being unrepresentative of total battery current, so topology matters to interpreting the displayed data.

123. D — The direct obstruction explains missing flap movement despite command. Restore the mechanism using the approved cleaning and inspection process, then verify response. A mismatch alone would not prove the cause, but physical debris at the recently serviced component gives stronger evidence than replacing unrelated controls or changing protection.

124. C — The input must report the real fluid condition under the system's intended test, so verify both the physical level and control response. Icon clearing and appearance are limited observations. Overfilling to suppress an incorrect warning changes the vehicle condition rather than demonstrates that the repaired sensor now reports it accurately.

125. B — The specified replacement restores the intended sealing assembly under the repair instructions. Hand flattening or appearance-based substitution cannot establish equivalent material and geometry. More torque is not a qualified restoration method for a part whose procedure requires renewal after opening the connection.