

PRACTICE EXAM 25: 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. An HV isolation diagnosis requires defined disconnected sections and specified test equipment. What should the technician establish?

- A. Only the vehicle's non-ready display.
- B. Only a low state-of-charge indication.
- C. The exact approved test state and measurement capability.
- D. An arbitrary section inferred from cable colour.

2. A lamp compatibility repair removes the warning, but the installed mounting arrangement still fails its supplied retention check. What remains?

- A. Acceptance from warning disappearance alone.
- B. Resolve the physical installation and verify full operation.
- C. Accept hardware from the removed lamp without checks.
- D. Verify only the lamp's static illumination.

3. An HV interlock connector is correctly reassembled. What should completion verify?

- A. Only control power without checking connector state.
- B. Only cleared history without the normal-sequence test.
- C. Specified locking, state and normal sequence response.
- D. Only housing fit without the required interlock check.

4. A DC-to-DC repair is completed after verified output failure. What should verification include?
- A. Only the replacement's mounting fit.
 - B. Only disappearance of the original warning.
 - C. Only an unloaded nonzero voltage.
 - D. The specified loaded output, controls and related system function.
5. A contaminated refrigerant condition is corrected by the approved process. What should completion establish?
- A. The specified internal condition, fluid identity and operating verification.
 - B. Only a familiar pressure at rest.
 - C. Verify only the currently fitted charge mass.
 - D. Accept identity from familiar static pressure.
6. After restoring a failed network branch, the supplied verification includes availability of every listed module and the original command test. What completes repair?
- A. Clear all communication records without repeating the command.
 - B. Confirm the full listed branch and repeat the failed command test.
 - C. Accept one reachable module as proof of the complete branch.
 - D. Repeat a command on another branch with the repair untested.
7. A supplied accessory route needs 1.20 m of harness plus 0.15 m approved allowance. What total length is calculated?
- A. 1.35 m.
 - B. 1.05 m.
 - C. 8 m.
 - D. 0.18 m.

8. Two connectors share a module casing. Communication returns when the power connector is reseated, but not when the network connector alone is reseated. Loaded power testing then fails at the power terminal. What is strongest?

- A. The network connector is proven defective by the casing location.
- B. The module software alone explains the loaded terminal loss.
- C. The power connection warrants repair before condemning the network link.
- D. Normal network continuity overrides the failed supply measurement.

9. A transmission cooler repair has a prescribed flow verification before the transmission returns to service. What should be completed?

- A. Only a stationary leak inspection without checking flow.
- B. An unloaded pump sound used as the cooler's flow verification.
- C. Only the transmission fluid level before connecting the cooler.
- D. The specified cooler-path flow test after restoring its connections.

10. A replacement wheel rubs a steering component during the prescribed travel check. Its documented offset differs from the supplied application, while suspension height passes. What needs verification?

- A. Use suspended rotation as full travel verification.
- B. Acceptance because it bolts to the hub.
- C. Correct wheel applicability and full movement clearance.
- D. Accept offset from the wheel's bolt-circle match.

11. A manual clutch fails to release fully. Its measured actuator travel is below the supplied minimum, while the lever's required movement is established from the service specification. What is supported?

- A. Insufficient actuation must be resolved before condemning the clutch disc.
- B. Resurfacing the disc should precede restoring the failed actuation.
- C. The normal engaged drive establishes adequate release travel.
- D. The disc alone is proven faulty by the incomplete release.

12. A gasoline system's fuel-pressure regulator principally controls which quantity in its defined arrangement?

- A. The throttle shaft's mechanical-clearance relationship.
- B. The fuel pressure relationship specified by its design.
- C. The ignition coil's secondary-voltage relationship.
- D. The exhaust valve's mechanical-timing relationship.

13. A bearing cap has an identified installation direction and location. What should assembly preserve?

- A. The removed cap's orientation without checking its marking.
- B. The nearest cap's position if its outer dimensions match.
- C. The most accessible bolt direction regardless of cap identity.
- D. The specified cap identity, location and orientation.

14. A brake-force comparison requires the prescribed safe test setup. What should preparation establish?

- A. Use the prior bay setup without checking applicability.
- B. Omit required restraint because test duration is short.
- C. Substitute a road impression for the equipment result.
- D. The approved vehicle state, equipment and personnel controls.

15. A supplied converter-slip model uses expected output speed of 2,000 rpm and measured output speed of 1,940 rpm. Slip percentage is shortfall divided by expected speed times 100. What is the result?

- A. 0.3%
- B. 3.0%
- C. 97.0%
- D. 6.0%

16. An EV cannot become ready. Its verified control supply meets requirements, but an identified HV interlock connector does not reach its specified engagement and reports open. What should be assessed?

- A. The traction motor condemned from no-ready alone.
- B. Only clearing the interlock code.
- C. The connection's approved mechanical and interlock condition.
- D. The passed control battery replaced first.

17. A gateway input message contains the correct supplied value. Its outgoing mapped value uses the wrong configured scale, and the receiving module reports that outgoing value accurately. What deserves priority?

- A. The gateway's mapping or scale configuration.
- B. The original sensor as proof of an incorrect input value.
- C. The recipient's display as the demonstrated conversion source.
- D. The physical link as proof of missing communication.

18. A bulb-failure warning begins after an unapproved lamp substitution. The lamp illuminates, but its measured current is below the supplied monitoring requirement. Original wiring tests pass. What is supported?

- A. The warning proves the illuminated lamp is electrically open.
- B. Use the old lamp's approval for the substitute.
- C. Replace the passed harness before checking the new load.
- D. Verify lamp and monitoring compatibility for the application.

19. A differential noise changes with applied torque but not with a brake application performed under the supplied comparison method. Bearing checks remain pending. What is best supported?

- A. The brake comparison proves every wheel bearing acceptable.
- B. The noise is unrelated to drivetrain load because speed is steady.
- C. The torque-related driveline condition needs further localization.
- D. The differential must be replaced without internal inspection.

20. An injector seal installation specifies a sizing tool after fitting the new seal. What should precede injector insertion?

- A. Complete the prescribed seal sizing and surface checks.
- B. Insert the injector and rely on bore pressure to size it.
- C. Enlarge the bore interface to accommodate the unsized seal.
- D. Use the removed seal's dimensions without the sizing step.

21. A supplied recharge target is 540 g and the recorded addition is 495 g. What additional mass reaches that target?

- A. 1,035 g.
- B. 45 g.
- C. 4.5 g.
- D. 0.045 g.

22. A steering-joint repair requires specified replacement hardware. Which selection correctly prepares that assembly?

- A. Use a similar bolt without checking its strength grade.
- B. Use the required hardware identity and retaining features.
- C. Reuse the removed bolt without checking permission.
- D. Select hardware from matching wrench size alone.

23. Several sensor values shift when one accessory runs. The specified test finds their shared ground rising while the module reference output remains stable. What should be investigated first?

- A. Independent replacement of every affected sensor.
- B. Accept the return from an unloaded check.
- C. The stable reference regulator as the sole fault.
- D. The shared return and its load-sensitive voltage loss.

24. A steering angle report reads zero at the prescribed reference position, but a verified independent check finds the wheel is 12 degrees from that reference. The mechanical indexing meets its criterion. What should be investigated?

- A. The zero display as proof of correct physical position.
- B. The mechanical indexing as proved failed despite its check.
- C. The sensing setup and defined angle reference.
- D. The assist motor alone before checking angle interpretation.

25. A wiring document offers two connector views: harness face and component face. The repair concerns a harness terminal. What should be established before assigning its cavity?

- A. Use the view and orientation matching the harness interface.
- B. Use either view while retaining the same apparent left side.
- C. Assign the cavity from the connector's outer shape alone.
- D. Use the neighbouring connector's cavity pattern as reference.

26. An engine's compression is low in one cylinder. Its intake valve remains slightly open at the specified compression-test position, while the adjacent valve closes normally. Which area is most directly implicated?

- A. The shared tester calibration as the only explanation.
- B. The crankpin bearing clearance as proof of this sealing loss.
- C. The affected intake valve's closing or actuation condition.
- D. The adjacent cylinder's exhaust opening as the main cause.

27. Which function belongs to a gasoline ignition coil?

- A. Store fuel vapour for the evaporative purge circuit.
- B. Measure throttle movement through its position signal.
- C. Regulate injection-rail pressure against its reference.
- D. Transform the supplied electrical input for spark generation.

28. A blower controller stops during its defined thermal protection event. Motor current meets the supplied check, but its required cooling airflow is obstructed after filter work. Removing the obstruction restores normal operation in the approved test. What is supported?

- A. Accept cold operation without a loaded retest.
- B. The cooling-air path contributed to the controller's protection event.
- C. Replace the controller before restoring cooling.
- D. The motor is proved defective despite its acceptable current.

29. A vibration persists after the assembly passes traditional balance. Its specified loaded test identifies excessive force variation, and separate wheel geometry checks pass. What should be assessed?

- A. The tire/wheel loaded behaviour using the applicable diagnostic process.
- B. Replacing passed wheel hardware without further evidence.
- C. A balance pass as complete proof the assembly is sound.
- D. Repeat only balance while omitting the failed loaded test.

30. A specified bolt uses an initial torque followed by an angle stage. The technician has completed the initial stage. What should guide the next operation?

- A. Convert the angle to an estimated torque from another bolt.
- B. Use the removed bolt's position as the angle reference.
- C. Repeat the initial torque until the wrench stops clicking.
- D. Apply the specified angle using the defined reference method.

31. A fuel-line repair requires a designated retaining clip and an engagement check. What should be established before restoring operation?

- A. Correct clip installation and the prescribed engagement check.
- B. Connector insertion alone before inspecting its retention.
- C. Retention inferred from a different line's similar connector.
- D. A leak-free idle run used instead of the engagement check.

32. A supplied sensor-support model places 9 V across a fixed 3-ohm load. The captured current is 2 A. Using $\text{current} = \text{voltage}/\text{resistance}$, what calculated reference should be compared with that capture?

- A. 0.333 A.
- B. 3 A.
- C. 6 A.
- D. 27 A.

33. What does a conventional relay's contact circuit principally switch?

- A. The fuse's physical current rating.
- B. The mechanical position of every connected actuator.
- C. The load path assigned by the circuit diagram.
- D. Every sensor reference voltage automatically.

34. A door mirror's motor runs and its local feedback changes, but the mirror glass remains stationary because the inspected drive link is detached. What is supported?

- A. The motor must be electrically open.
- B. Only recalibrating the unchanged sensor.
- C. The controller is proved unable to issue a command.
- D. The driven mechanical connection needs assessment.

35. A transmission speed reading fails only when one harness branch is flexed. A reference sensor signal remains normal at its source, but the controller input drops out. What is localized?

- A. The controller output command as the measured source dropout.
- B. The signal path between the verified source and controller input.
- C. The transmission gear teeth as proof of the flex response.
- D. The sensor's mechanical drive as the demonstrated failed source.

36. A diesel return test collects 15 mL in 30 seconds at the stated test condition. Assuming a constant rate, what is its equivalent return flow per minute?

- A. 15 mL/min
- B. 7.5 mL/min
- C. 30 mL/min
- D. 45 mL/min

37. A axle-seal procedure requires inspecting the shaft's sealing surface. A groove is found. What should determine the next action?

- A. The specified shaft-surface and permitted repair criteria.
- B. The shaft's straightness alone instead of its sealing surface.
- C. The new seal's presence as proof the groove no longer matters.
- D. The groove's appearance alone without the required assessment.

38. A pressure instrument reads 1.48 MPa against a supplied 1.50 MPa reference at the same stable condition. Define error as indicated minus reference pressure. What is its error?

- A. 1.48 MPa
- B. -0.02 MPa
- C. 2.98 MPa
- D. 0.02 MPa

39. A supplied charging-output observation is 350 V at 8 A under a fixed model. Using power = voltage × current, what DC power results?

- A. 28 kW.
- B. 0.028 kW.
- C. 43.75 kW.
- D. 2.8 kW.

40. A loaded-force diagnosis leads to an approved tire matching adjustment. What should final checks include?

- A. Required balance, loaded behaviour and complete installation criteria.
- B. Only one unexplained force reading.
- C. Only the new match mark's appearance.
- D. A universal replacement decision from any high value.

41. An SRS input fault appears after approved connector work. Component and receiver checks pass, but the circuit opens during the prescribed retention test at a repaired terminal. What should be restored?

- A. Receiver replacement from the stored code alone.
- B. Only clearing fault history before retesting.
- C. The local approved terminal and connector assembly.
- D. The passed component replaced immediately.

42. An approved closed evaporative test records 2.8 kPa initially and 1.6 kPa after 60 seconds at stable temperature. Define pressure fall rate as initial minus final pressure per minute. What rate is represented?

- A. 0.6 kPa/min
- B. 4.4 kPa/min
- C. 1.2 kPa/min
- D. 2.8 kPa/min

43. An HVAC service identifier reports a refrigerant mixture outside the supplied equipment procedure, despite a familiar label. What should be established before service continues?

- A. Charge adjustment from static pressure alone.
- B. Ordinary recovery solely from the label.
- C. Mixing more known refrigerant into the system.
- D. The approved identification and compatible handling process.

44. Charging is limited during a thermal-control fault. Independent testing finds required coolant flow absent because a service valve remains closed, while pump command and supply pass. What should be restored?

- A. The approved fluid lineup and verified thermal function.
- B. Pump replacement solely because flow is absent.
- C. Charger replacement before valve correction.
- D. Only increasing requested pump speed.

45. A differential setup procedure specifies contact-pattern checking after the initial adjustment. What should guide acceptance?

- A. The adjuster's movement alone without inspecting the pattern.
- B. The actual pattern and all stated setup criteria together.
- C. The original pattern recorded before changing the assembly.
- D. The absence of hand-rotation noise as the sole acceptance check.

46. A diesel injector's return path handles which flow in the specified injector arrangement?

- A. The compressor's intake-air delivery flow.
- B. The coolant pump's engine-circulation flow.
- C. The exhaust system's recirculated-gas flow.
- D. The injector's defined return or leakage flow.

47. A network heartbeat repeats every 2.0 ms. Using 1 second = 1,000 ms, what is the repetition frequency?

- A. 2,000 Hz
- B. 500 Hz
- C. 2 Hz
- D. 50 Hz

48. Under the same compression-test conditions, the highest cylinder reads 175 psi and the lowest reads 158 psi. What is the measured cylinder spread?

- A. 17 psi
- B. 158 psi
- C. 175 psi
- D. 333 psi

49. A supplied brake setup needs 1.6 mm total clearance allowance and an approved element contributes 0.9 mm. What remaining amount is calculated?

- A. 2.5 mm.
- B. 1.778 mm.
- C. 0.7 mm.
- D. 0.07 mm.

50. A diesel engine's rail pressure fails to reach the supplied cranking target. The low-pressure inlet meets its criterion, and one injector's return exceeds its stated maximum. What is most directly supported?

- A. The cranking target is met because inlet pressure is normal.
- B. The verified inlet condition proves rail delivery is sufficient.
- C. The high-pressure pump alone explains the isolated return excess.
- D. Excess return at that injector can contribute to the rail shortfall.

51. A wheel-speed target retention fault is repaired. What should verification compare?

- A. Permanent imitation of a valid pulse pattern.
- B. Only the sensor's resting voltage.
- C. Actual wheel movement with signal and interpreted speed.
- D. Only a cleared ABS message.

52. A thermal service valve is restored to its approved position. What should final checks compare?

- A. Actual flow, temperature and charging response.
- B. Only cleared history without verifying thermal operation.
- C. Only pump sound without measuring the required flow.
- D. Only the valve handle's visual direction.

53. An obstructed HVAC cooling-air path is restored. What should final checks assess?

- A. Only that the motor runs briefly.
- B. The specified airflow and stable controller response under relevant demand.
- C. Accept the filter cover without checking its flow path.
- D. Only an erased climate code.

54. A brake repair disturbs pad-retaining hardware. What should final assembly inspect?

- A. Only a pressure-gauge reading.
- B. Reuse hardware without its required condition check.
- C. Only that the pads fit between surfaces.
- D. The specified hardware condition, placement and retained movement.

55. A connector repair requires the specified terminal system. Which preparation correctly supports that repair?

- A. Retain old locking parts without their inspection.
- B. Contact, locking and environmental features must be compatible.
- C. Reuse a terminal from a different contact system.
- D. Use pin size alone to approve the replacement.

56. A road test will reproduce an intermittent steering complaint. The vehicle has loose tools in the passenger footwell. What should be completed before departure?

- A. Leave the tools while restricting the test to low speed.
- B. Place the tools beneath the driver's seat without restraint.
- C. Secure the tools and complete the required road-test checks.
- D. Begin testing and move the tools if they become intrusive.

57. A no-crank test finds correct start request and stable main voltage, but a prescribed loaded check reveals excessive loss at the starter-case return connection. What should be localized?

- A. The measured return path and its contact condition.
- B. Start-switch replacement despite valid command.
- C. The starter request software before path repair.
- D. The starter motor alone despite the failed return.

58. A piston ring end-gap check principally evaluates which relationship?

- A. The clearance between the crankpin and bearing shell.
- B. The clearance between the valve stem and valve guide.
- C. The clearance between the ring ends in the specified bore.
- D. The clearance between the piston pin and connecting rod.

59. A connection dissipates a stated constant 2 W during a 45-second repair verification. Using $\text{energy} = \text{power} \times \text{time}$, what energy is dissipated?

- A. 90 J.
- B. 22.5 J.
- C. 47 J.
- D. 0.0444 J.

60. A braking pull is investigated. Pressures at both front calipers meet the supplied comparison, but one friction surface is contaminated and its measured brake force is low. What should be assessed?

- A. Replace the pressure source despite passing checks.
- B. The affected friction interface and required brake performance.
- C. A hydraulic supply failure proved by the low force alone.
- D. Replace sensing before inspecting the friction interface.

61. A shift complaint occurs with the specified selector input correctly reported, but the corresponding actuator position fails to change. The actuator supply also fails its loaded criterion. What deserves priority?

- A. The gear lubrication alone as proof of the electrical shortfall.
- B. The selector switch as proof of an incorrect reported command.
- C. The successful input as proof of complete actuator movement.
- D. The failed actuator supply path under the commanded condition.

62. An ignition harness repair restores a previously intermittent connector. Which verification best completes the repair?

- A. Repeat the specified loaded and connector-disturbance checks.
- B. Check a neighbouring coil while leaving the repaired path untested.
- C. Clear stored misfire data and omit operating confirmation.
- D. Accept the repair from engine start alone without loading.

63. An ABS wheel signal changes incorrectly under load. The sensor circuit passes, but the prescribed mechanical check finds the target slipping relative to wheel rotation. What should be restored?

- A. Reset sensing before restoring the target fit.
- B. The target's approved mechanical relationship and signal interpretation.
- C. Accept the circuit pass as proof of target retention.
- D. The sensor replaced solely because data is wrong.

64. A connection loses 0.28 V at 14 A. Its supplied effective-resistance maximum is 0.015 ohm. Using $\text{resistance} = \text{voltage}/\text{current}$, which calculated resistance should be compared with that maximum?

- A. 50 ohms.
- B. 0.002 ohm.
- C. 3.92 ohms.
- D. 0.02 ohm.

65. A supplied rotating-driveline model uses stored energy in joules = 0.5 times rotational inertia times angular speed squared. Inertia is 0.20 kg m² and speed is 100 rad/s. What stored energy does the model predict?

- A. 100 J
- B. 10 J
- C. 1,000 J
- D. 2,000 J

66. A brake warning persists with correct actual fluid and a valid input signal at the module. Its installed configuration uses the wrong defined interpretation after replacement. What should be assessed?

- A. Correct module applicability and input interpretation.
- B. Replace input hardware before correcting its setup.
- C. Accept variant coding because signal voltage is normal.
- D. Sensor replacement despite a verified signal.

67. A replacement wheel accepts the existing nuts, but their seat shape fails the supplied wheel-interface requirement. Threads engage and the suspended wheel rotates freely. What follows?

- A. Engaged threads prove complete wheel-joint compatibility.
- B. Free rotation certifies the loaded fastening interface.
- C. The passed rotation test eliminates the seat requirement.
- D. Seat compatibility remains failed despite thread engagement.

68. A purge valve is commanded closed during a supplied test. Flow continues through it with its inlet isolated from other paths, while its electrical command is verified. What is supported?

- A. The verified command proves the valve physically seals.
- B. Another parallel vapour line causes the isolated flow.
- C. The valve does not provide the required closed-flow condition.
- D. A parallel vent path explains flow despite the stated isolation.

69. A hydraulic component will be opened. The supplied procedure requires unloading the circuit and confirming zero pressure at its designated test connection. Which action completes preparation?

- A. Loosen the fitting to infer pressure from its first movement.
- B. Unload the circuit and verify at the specified connection.
- C. Unload the circuit and rely on the stopped pump alone.
- D. Read another circuit's gauge after stopping its pump.

70. A controller is unreachable only after a water-damaged connector is disturbed. Its supply and ground remain within the given loaded criteria, while its local communication waveform becomes distorted. What should be investigated first?

- A. The supply source solely because the module is unreachable.
- B. The application display solely because the waveform is distorted.
- C. The disturbed communication interface and its local signal path.
- D. The already acceptable ground as the demonstrated voltage loss.

71. A parasitic-current reading is taken while the scan connection keeps the vehicle awake. The supplied test requires a sleeping state, and the current reaches its acceptable range after the defined shutdown process. What should diagnosis conclude?

- A. One awake module as culprit without isolation.
- B. The initial observation did not represent the required sleep test.
- C. The battery must be replaced from that first reading alone.
- D. Accept awake current against the sleep criterion.

72. Which distinction separates a gateway's routing function from a sensor's measurement function?

- A. The gateway forwards defined communication between network paths.
- B. The gateway eliminates the need for message-source identification.
- C. The gateway directly measures every quantity carried in messages.
- D. The gateway sets all mechanical values described by messages.

73. A signal is correct at its sensor but absent at the receiver. A prescribed test locates an open at a terminal disturbed during recent repair. What should be restored?

- A. Replace the receiver before restoring the open terminal.
- B. The sensor replaced solely from missing received data.
- C. All shared references despite their passed checks.
- D. The identified signal connection and required retention.

74. A steering thermal fault is repaired, but the required protective-response test fails even though normal assist works. What remains?

- A. Resolve and verify the specified protection before release.
- B. Acceptance from normal steering effort alone.
- C. Repeat only an ordinary cold steering manoeuvre.
- D. Accept motor rotation without the protection test.

75. A cylinder-head repair procedure requires checking the mating surface before gasket installation. What should happen before fitting the new gasket?

- A. Use the gasket's thickness to compensate without measurement.
- B. Tighten the head first and assess the surface indirectly.
- C. Judge flatness only from the removed gasket's appearance.
- D. Assess the cleaned surface by the specified inspection method.

76. A shaft flange has measurable looseness at its specified attachment, while the neighbouring support meets its movement criterion. Noise occurs as drive direction reverses. What is strongest?

- A. The acceptable support proves the complete driveline has no looseness.
- B. A gear-contact setting alone is proven by the direction change.
- C. The loose flange attachment is a relevant local fault to address.
- D. The noise requires replacing the support despite its passing result.

77. Protective packing is removed from a repaired heater installation. What should verification include?

- A. A single favourable display setting without outlet checks.
- B. The required airflow, temperature modes and completed component assembly.
- C. Only whether the packing was discarded.
- D. Only the heater hoses' warmth.

78. A powered seat stops only at one travel point. Its supply remains within the supplied requirement, and the prescribed test finds a damaged track binding there. What should be assessed?

- A. A common switch replacement before track checks.
- B. The localized mechanical load and seat installation.
- C. The supply cable solely because motion stops.
- D. A sensor relearn as the only mechanical correction.

79. What does a body actuator's position input report within its specified arrangement?

- A. The electrical condition of every shared load.
- B. Guaranteed motion of every downstream linkage.
- C. The state measured at its defined sensing point.
- D. The mechanical strength of the mounting bolts.

80. An SRS terminal repair restores specified retention. What should completion follow?

- A. Only disappearance of a code once.
- B. Only connector appearance after assembly.
- C. Only the receiving module's part label.
- D. The approved circuit and complete restraint-system verification.

81. A connector repair replaces a network terminal. The method specifies checking terminal retention before reconnecting. What should the technician verify?

- A. The installed terminal's prescribed retention and interface condition.
- B. The mating connector's retention instead of the repaired terminal.
- C. Only that the cavity number matches the repair record.
- D. Only continuity while the terminal is held by hand.

82. All devices on one network branch disappear when its branch connector is fitted; the remaining network communicates when it is unplugged. What is most directly localized?

- A. A fault associated with that branch or its connected devices.
- B. A fixed scan-address list unrelated to the branch's connection state.
- C. A total scan-tool failure independent of the connector state.
- D. A missing source message that cannot affect branch operation.

83. The scan tool loses only one module during its startup reset interval. All modules then remain available, matching the supplied normal startup description. What is supported?

- A. The temporary loss proves a permanent branch open circuit.
- B. The startup interval identifies a continuously failed gateway.
- C. The observed loss matches the stated startup behaviour.
- D. The later availability proves the module never reset.

84. A diesel injector replacement has an individual correction code and a prescribed post-installation setup. What should the technician record and apply?

- A. One neighbouring injector's code for all replaced positions.
- B. The replacement injector's actual code at its assigned position.
- C. The removed injector's code because the cylinder is unchanged.
- D. Only the part number without the specified individual setup.

85. A network splice repair requires preserving the specified pair routing and joint construction. What should be restored?

- A. The removed joint's shape despite the specified repair method.
- B. Only wire colour with an unverified joint arrangement.
- C. Only continuity with unrestricted conductor routing.
- D. The defined conductor arrangement and approved splice assembly.

86. What does an HVAC blend door principally change in its assigned arrangement?

- A. The airflow quantity produced by the blower motor.
- B. The air outlet selection of the distribution door.
- C. The air-path relationship used to control delivered temperature.
- D. The outside-air selection of the recirculation door.

87. A shared sensor-ground connection is repaired. What should final verification reproduce?

- A. Only an unloaded continuity tone.
- B. The triggering accessory load and valid sensor response.
- C. Only clearing stored input faults.
- D. Changing the passed reference supply.

88. A brake-warning configuration is restored. What should completion verify?

- A. Only that one message disappears.
- B. Only the module's exterior part number.
- C. A fixed substitute signal left installed.
- D. Actual input meaning and required warning behaviour.

89. A new damper meets its component test, but its installed travel contacts another part outside the supplied clearance requirement. What remains?

- A. Correct the installation and verify its full operating envelope.
- B. Acceptance from the separate component result.
- C. Omit travel verification after the component test.
- D. Accept only the damper's stationary mounting position.

90. A scan-tool parameter says 'calculated', while a separate physical measurement fails the supplied criterion. Both are taken under the specified condition. Which conclusion is best supported?

- A. The calculated value does not override the failed direct test.
- B. Both readings must describe an identical measurement method.
- C. The direct result identifies the controller as the sole cause.
- D. The calculated value certifies the physical test as acceptable.

91. Oil pressure is below the supplied minimum at hot idle. A verified mechanical gauge confirms the electronic reading, and the correct oil level is established. What follows from these findings?

- A. The correct level establishes that hot pressure is acceptable.
- B. A display configuration change resolves both measurements.
- C. The electronic sender alone explains the confirmed low result.
- D. The low pressure is corroborated and needs mechanical diagnosis.

92. A manual gearbox repair exposes an internal oil passage. The procedure requires inspecting it before closure. What should be verified?

- A. A later operating test used instead of the passage inspection.
- B. The passage's specified cleanliness and unobstructed condition.
- C. Only the oil grade without inspecting the internal passage.
- D. Only the housing exterior before reinstalling its cover.

93. An independent matched-condition HVAC temperature check differs from the reported input beyond the supplied tolerance. The independent device passes its reference check. What should be investigated?

- A. The independent device as proven faulty despite its check.
- B. The compressor alone before resolving the input difference.
- C. The sensing path and its interpretation of temperature.
- D. The displayed input as proof that actual temperature agrees.

94. A dial indicator compares movement against its mounted reference. Which condition is necessary for interpreting its reading?

- A. The reference and contact geometry must suit the measurement.
- B. The reference can move freely with the measured component.
- C. The displayed resolution establishes all mounting accuracy.
- D. The contact angle can be ignored for every measured direction.

95. A diesel injector is removed after the specified pressure-release procedure. The open fuel interfaces require designated protective caps. What should happen during the intervening work?

- A. Fit available caps without verifying their cleanliness or fit.
- B. Rely on a later running test to address introduced contamination.
- C. Leave interfaces open while keeping removed injectors covered.
- D. Protect each open interface with the specified clean cap.

96. Why is a rotating shaft's specified balance relationship relevant to assembly?

- A. It establishes the final drive's lubricant specification.
- B. It establishes the gearbox's electronic shift schedule.
- C. It limits the assembly's unintended rotating mass imbalance.
- D. It establishes the clutch's hydraulic release pressure.

97. A driveshaft removal procedure identifies flange match marks that must be retained. What should reinstallation use?

- A. The most accessible orientation without consulting the marks.
- B. The specified marked relationship and required fastening sequence.
- C. The orientation of a different vehicle's similar shaft.
- D. Any flange orientation if the bolt holes can be aligned.

98. What does a DC-to-DC converter provide in the vehicle architecture that assigns it that role?

- A. The battery's complete health assessment.
- B. Electrical conversion for the specified low-voltage system.
- C. Automatic repair of every HV insulation fault.
- D. Mechanical torque at the drive wheels directly.

99. During a prescribed brake test, supply pressure meets its criterion, but pressure is below the minimum only downstream of one branch connection. Both friction assemblies pass their inspections. What deserves priority?

- A. The measured pressure loss in that local branch.
- B. Both friction assemblies despite their passed inspections.
- C. The wheel-speed reference before resolving pressure loss.
- D. The passing supply source as the demonstrated failure.

100. A gasoline engine hesitates only during rapid throttle opening. Fuel pressure falls below its supplied minimum then recovers; the pressure sensor agrees with a mechanical gauge. What deserves priority?

- A. The pressure sensor alone despite the agreeing reference.
- B. The normal steady pressure as proof of adequate transient supply.
- C. The throttle display alone because the complaint follows opening.
- D. The fuel supply's transient delivery under the failing condition.

101. A correct replacement wheel provides clearance, but its required fastening hardware has not been verified. What must release require?

- A. Reuse nuts without checking their wheel-seat fit.
- B. Acceptance from improved clearance alone.
- C. Complete hardware and installed-joint acceptance.
- D. Verify only wheel clearance throughout motion.

102. Contaminated brake friction components are corrected by the approved process. What should completion assess?

- A. Only the cleared chassis history.
- B. Only that a new part is fitted.
- C. The contamination source and required assembled brake performance.
- D. More hydraulic pressure as universal verification.

103. A universal joint allows which mechanical relationship in its designed driveline arrangement?

- A. Automatic selection of gearbox ratio from the throttle signal.
- B. Continuous axial support replacing every shaft bearing.
- C. Independent wheel braking through its hydraulic pressure relation.
- D. Torque transmission between shafts at the permitted angular relation.

104. Electric steering reduces assist during a recorded protection event. Independent tests confirm the actual temperature exceeds the supplied threshold, while its sensing input is accurate. What should be investigated?

- A. Replace the motor before checking the thermal cause.
- B. The real thermal condition and required operating strategy.
- C. Accept cold assist without investigating thermal duty.
- D. Sensor replacement solely from reduced assist.

105. What does a steering angle input generally report for its assigned control system?

- A. The sensed angular relationship defined by the vehicle strategy.
- B. The driver's applied steering torque at the wheel.
- C. The lateral acceleration acting on the vehicle body.
- D. The rack motor's delivered assist current.

106. A supplied tire-pressure reference is 220 kPa and measurement is 198 kPa. What percentage of reference is measured?

- A. 90%.
- B. 22%.
- C. 111.1%.
- D. 10%.

107. A repaired start circuit cranks normally, but its required insulation protection at a metal opening remains absent. What must be completed?

- A. Release from the successful crank observation alone.
- B. Accept the old route without checking new clearance.
- C. Restore the approved protection and verify the installed path.
- D. Verify only the connector, omitting the opening.

108. An HV component is replaced under its applicable procedure. What should the release process restore?

- A. Only erasing diagnostic history.
- B. The approved connections, protection and required final HV checks.
- C. Only matching the former connector shapes.
- D. Only a successful ordinary start attempt.

109. Which property makes a support stand's published load rating relevant when holding a raised vehicle?

- A. It defines the floor's available bearing strength.
- B. It defines the vehicle's approved lifting height.
- C. It defines the jack's hydraulic lifting pressure.
- D. It defines the stand's permitted supported load.

110. A vehicle enters for underbody inspection with an unknown liquid leaking onto the bay floor. What should occur before positioning lifting equipment?

- A. Move the jack through the liquid to reach the lift point.
- B. Raise the vehicle before assessing the contaminated area.
- C. Identify and control the leak and affected work area.
- D. Treat the liquid as water based only on its appearance.

111. A vehicle vibration persists with the engine stopped during the permitted coast test and tracks road speed rather than engine speed. What deserves priority?

- A. An idle-control response independent of vehicle movement.
- B. Road-speed-related rotating components in the tested driveline path.
- C. An engine firing imbalance as the demonstrated sole source.
- D. A stationary engine accessory as proof of the road-speed trend.

112. A roof-water complaint follows trim work. The approved test localizes backup at a drain whose hose is pinched by the installed panel; other checked entry areas remain dry. What is supported?

- A. The drain route and disturbed installation need correction.
- B. Only drying the carpet as complete source repair.
- C. Replacing all exterior seals before drain inspection.
- D. The nearest window as the proven source.

113. A vehicle continues oscillating after a permitted suspension disturbance. No fresh damper leakage is visible, but the specified performance check fails at one unit. What is supported?

- A. A dry exterior proves the unit acceptable.
- B. Accept leakage inspection as full performance evidence.
- C. Use stationary ride height as the dynamic test result.
- D. The damper's functional condition needs disposition.

114. An engine oil-pump repair introduces a new pickup seal. The supplied procedure requires confirming seal seating before installing the pan. What should the technician verify?

- A. Only pump rotation before inspecting the pickup connection.
- B. Only that the new seal matches the removed seal's profile.
- C. Only the pickup's position after the pan is installed.
- D. The specified seal fit and pickup attachment before closure.

115. A body control diagnosis requires the applicable connector view before pin testing. What should the technician establish?

- A. Actual connector identity, view orientation and test method.
- B. Only the closest terminal to the component.
- C. Only a matching wire colour.
- D. An unverified pin arrangement from another model.

116. A pinched roof drain is correctly rerouted. What should final checks include?

- A. Only seal appearance without testing the repaired drain.
- B. Original exposure and the required drain discharge.
- C. Only a dry floor before spraying.
- D. Only trim closure without checking actual water discharge.

117. A replacement module communicates but identifies an equipment variant different from the installed vehicle. Commands for that variant do not match the supplied vehicle definition. What follows?

- A. The wrong variant proves that all received messages are absent.
- B. The vehicle's wiring must be changed to match the reported variant.
- C. Communication is present, but the module's configuration is unsuitable.
- D. Successful communication establishes complete installation acceptance.

118. A temporary circuit bypass was used to localize a signal fault. What should repair completion do?

- A. Verify only the temporary bypassed circuit path.
- B. Restore the required path and disposition the bypass.
- C. Leave the bypass after its single successful test.
- D. Retain substitute routing without final approval.

119. A binding seat track is repaired. What should completion verify?

- A. Only that one warning clears.
- B. Only a favourable supply reading at rest.
- C. Only unloaded movement before the fault point.
- D. Specified retention, loaded travel and related safety functions.

120. A module software operation requires stable support power throughout writing. What should be established before starting?

- A. The specified support supply and all programming prerequisites.
- B. A charging source chosen without checking the required method.
- C. Only battery voltage before disconnecting the support unit.
- D. Only a successful prior update on a different module.

121. A final-drive housing is dry externally, but its measured lubricant level is below the supplied inspection requirement. No recent service record establishes filling. What should be concluded?

- A. The level can be accepted because no active drip is visible.
- B. A dry housing proves that the measured level is sufficient.
- C. The low level remains a real finding despite the dry exterior.
- D. The missing record proves a particular seal is leaking now.

122. A heater receives the required hot coolant and its air doors move correctly. Inspection after replacement finds protective packing blocking the specified air passage through the core. What should be restored?

- A. Acceptance from hot hoses alone.
- B. Replace the core before restoring its air passage.
- C. The approved air path and completed installation.
- D. Another temperature sensor without input evidence.

123. A misfire moves with one ignition coil to another cylinder. The original cylinder runs normally with the known-good coil under the same load. What is strongest?

- A. The shared fuel supply explains a fault following one coil.
- B. The normal unloaded coil reading disproves the loaded failure.
- C. The original cylinder's compression is the demonstrated cause.
- D. The fault follows that coil assembly under the tested load.

124. Which interface primarily transfers piston force to the crankshaft through the connecting rod?

- A. The connecting rod's crankpin bearing interface.
- B. The piston ring's cylinder-wall interface.
- C. The camshaft's follower contact interface.
- D. The cylinder head's valve-guide interface.

125. A transfer-unit repair requires restoring a disconnected breather to its specified route. What should final assembly establish?

- A. The nearest accessible hose endpoint regardless of its function.
- B. The intended open breather path and protected routing.
- C. The hose's presence regardless of kinks along its route.
- D. A plugged hose used to prevent any external moisture entry.

Practice Exam 25: Answer Key and Explanations

- 1. C** — The test needs the actual boundaries and valid equipment defined by the vehicle procedure. Operating or charge indication cannot establish insulation condition at every work point. Cable colour can identify relevant circuits but cannot replace verified topology, so follow the model-specific sequence and requirements before interpreting an isolated section's measurement.
- 2. B** — The lamp still needs its specified mechanical retention even after monitoring responds normally. Restore that relationship and verify the complete installation. A static light output or retained hardware from the removed component cannot establish that the replacement is secured and positioned correctly under the actual vehicle's operating movement.
- 3. C** — The connection must meet its required mechanical and monitored conditions and support the authorized operating sequence. Appearance and voltage elsewhere do not demonstrate actual locking or interlock continuity. Complete the applicable checks rather than accepting one favourable indication as proof that the restored HV interface now meets every assigned service requirement.
- 4. D** — The converter must provide suitable delivery under its assigned demand and respond to the actual control strategy. A no-load value and physical fit are limited observations. Follow the applicable checks rather than treat cleared memory as proof that the completed low-voltage path now sustains the functions affected by the original conversion fault.
- 5. A** — The completed circuit needs verified compatibility and cleanliness as well as performance under its actual service requirements. A label and static pressure cannot establish those conditions. Follow the appropriate handling and acceptance process rather than treating dilution as removal of an identified contaminant or accepting a familiar number as full service integrity.
- 6. B** — The prescribed verification checks both restored communication coverage and the behaviour that originally failed. One reachable module may leave other branch functions unconfirmed. Clearing records changes stored information rather than demonstrating recovery, so repeat the relevant command on the repaired path before accepting the work.

- 7. A** — Add the specified route and allowance: $1.20 + 0.15 = 1.35$ m. This follows the problem's approved length basis, not a universal routing allowance. Actual installation still needs the prescribed conductor, supports and clearance so the calculated quantity produces a suitable assembly rather than excess cable left against moving or sharp components.
- 8. C** — The controlled reseating response and loaded loss both implicate the supply interface. A module can disappear from communication when its power path fails. Investigate and restore that measured connection before replacing network parts, while using the vehicle procedure to verify the complete module operation after repair.
- 9. D** — The repair needs verification of the actual cooler path's delivery as well as connection integrity. A dry joint or correct fluid level cannot prove flow through the restored path. Perform the prescribed test before accepting operation so that a remaining restriction is not hidden by otherwise normal appearances.
- 10. C** — The replacement wheel fits the hub but has the wrong documented offset and rubs during the prescribed movement check. Verify its application and required clearance. Normal suspension height and free suspended rotation cannot certify the full installed envelope where the actual interference occurs.
- 11. A** — The measured actuator motion does not meet the movement required for release. Diagnose that actuation path before selecting the friction assembly as the cause. Engaged drive and release are different operating conditions, so normal torque transmission cannot establish sufficient movement during the attempted disengagement.
- 12. B** — The regulator controls the pressure relationship selected for that fuel architecture. Ignition voltage, throttle clearance and valve timing require different components and checks. Identify the actual referenced pressure and operating arrangement before interpreting a regulator reading; the component name alone does not define every vehicle's test method.
- 13. D** — The cap must return within the engine's defined assembly relationship. Similar external dimensions do not establish interchangeability or orientation. Confirm the actual identification and procedure before fastening, because the completed bore and bearing support depend on the intended matched components rather than assembly convenience.
- 14. D** — The measurement must use the defined safe conditions and suitable equipment so its result represents the actual criterion. A remembered impression or unrelated operation is not equivalent evidence. Establish the assigned vehicle and personnel controls before applying the test rather than using an uncontrolled setting to discover a potentially faulty braking function.
- 15. B** — The shortfall is 2,000 minus 1,940, or 60 rpm. Dividing 60 by the stated expected speed and multiplying by 100 gives 3.0 percent. Using measured speed as the denominator or reporting the delivered-speed percentage would answer a different relationship from this supplied model.
- 16. C** — The inspection localizes a required state that is not achieved despite suitable control power. Restore and verify the actual connector through the HV procedure before other decisions. A no-ready

symptom has several possible causes, but the direct engagement and reported-state evidence supports the connection rather than an immediate motor or battery replacement.

17. A — The incorrect value appears at the gateway's mapped output, while both the input and recipient's interpretation meet their supplied definitions. Investigate that conversion configuration. Successful transmission cannot certify the meaning of a mapped value, but these comparisons narrow where the value changes incorrectly.

18. D — The new load illuminates but draws less current than the stated monitoring requirement, while the original wiring passes. Verify its actual application and authorized monitoring compatibility. Illumination cannot certify those relationships, and the removed lamp's approval does not automatically transfer to a different electrical load fitted in the same location.

19. C — The noise responds to transmitted torque in the controlled comparison, supporting further driveline localization. A negative brake comparison does not certify every bearing, and load sensitivity alone does not identify a replaceable assembly. Continue the specified checks that separate gear-contact and support conditions under the failing state.

20. A — The specified sizing operation establishes the seal's intended installation condition before insertion. Forcing the injector into place cannot substitute for that step and may affect the interface. Confirm the required seal preparation and mating condition rather than changing the bore to accommodate an unprepared part.

21. B — Subtract recorded addition from the stated target: $540 - 495 = 45$ g. Both quantities use the given mass-accounting basis. The calculation does not authorize charge estimation from a typical pressure reading or establish another vehicle's capacity; actual completion must follow the applicable fluid and equipment procedure.

22. B — Prepare the joint with hardware meeting its defined strength, geometry and retaining requirements. Socket fit does not establish those properties, and reuse needs actual permission. Select the specified components before assembly so that the required fastening process acts on an appropriate joint rather than an unverified substitute.

23. D — The common ground disturbance changes the reference used by several inputs even though the module supply remains stable. Test that return under the triggering load before assigning multiple sensor failures. A valid source reference alone cannot establish accuracy at components whose local return potential changes during the same event.

24. C — The independently measured position disagrees with the displayed reference while mechanical indexing passes. Investigate how the input and setup define zero before changing the mechanical relationship. A plausible display is not proof of correct reference, and the comparison does not alone identify the assist motor as its cause.

25. A — Opposite viewing directions can reverse the apparent cavity arrangement. Select the harness view and its orientation features before identifying the terminal. Similar shape or a neighbouring

connector cannot certify the cavity assignment, especially when the repair involves a circuit whose identity determines the next test.

26. C — The observed open intake path can prevent this cylinder from retaining compression at the required position. Investigate why that valve fails to close before attributing the result to fuel delivery. The adjacent valve comparison strengthens the local mechanical evidence without yet identifying the exact damaged part.

27. D — The coil supplies the electrical transformation used in the ignition process. Vapour storage, fuel regulation and throttle measurement belong to different engine-support components. Its general role does not establish successful spark delivery under load, which depends on the complete controlled ignition path and the relevant test conditions.

28. B — The controlled airflow correction changes the event while motor current remains acceptable. Restore that path and verify operation under the triggering demand. The result supports an installation-related cooling cause, while a brief cold run or replacing the controller before resolving its restricted air supply cannot establish the required thermal condition.

29. A — The balance result describes mass distribution, while the loaded measurement identifies another behaviour that can contribute to vibration. Use the actual equipment and vehicle criteria to investigate the assembly, including any approved matching process. Do not automatically replace a tire solely from one force value or assume extra weight corrects every condition. Here separate geometry checks provide context, but complete disposition still needs the manufacturer's specified inspection and operating requirements.

30. D — The second stage controls rotation from the procedure's defined starting condition. Repeating the initial torque or borrowing another joint's conversion does not reproduce that rotation. Use the actual reference and tool method, including the procedure's rules for fastener condition, before accepting the completed attachment.

31. A — Sealing and retention are related but separate properties. Install the designated clip and perform the required engagement check before operation. A line can appear connected or remain dry during one idle test without providing the mechanical retention specified for its actual connector under operating movement.

32. B — Divide the stated voltage by resistance: $9 \div 3 = 3$ A. This uses the fixed-resistance model explicitly supplied. Actual controlled or temperature-varying loads need their applicable measurement conditions, so the arithmetic is not a universal current specification for every vehicle component with a similar name or connection.

33. C — The contacts open or close the specified load path when the relay mechanism operates. They do not automatically qualify the supply or directly measure actuator position. A working coil or audible click still needs the relevant loaded contact checks before it can establish correct current delivery through the actual switched circuit.

- 34. D** — Motion at the motor and its feedback location does not establish motion beyond a broken link. Restore the mechanical relationship under the procedure and verify actual glass travel. The observations demonstrate why a valid command or moving actuator is not complete functional evidence for the assembly it is intended to drive.
- 35. B** — The normal source and failed downstream input during the same disturbance place the fault within their connecting path or interfaces. Investigate that branch before condemning the sensor's drive. The flex response localizes an intermittent condition, while the actual terminal or conductor still requires the specified checks.
- 36. C** — Sixty seconds is twice the stated collection interval, so the equivalent flow is 15 multiplied by two, or 30 mL/min. The conversion assumes the constant rate supplied in the question. Compare the converted value only with a criterion using the corresponding test condition and flow basis.
- 37. A** — The new seal still works against the actual shaft surface, so the groove must be assessed under the component's criteria. Installing a fresh seal cannot by itself restore that interface. Use the authorized repair or replacement disposition and verify the surface before completing the assembly.
- 38. B** — Subtract the reference from the indicated value: 1.48 minus 1.50 gives a negative error. The sign shows that this reading is below the reference. The comparison addresses this stated condition; it does not by itself establish the instrument's accuracy over every part of its range.
- 39. D** — Multiply the given voltage and current: $350 \times 8 = 2,800$ W, or 2.8 kW. The fixed model defines this calculation; actual charging can vary with strategy and conditions. This power value alone does not establish battery capacity or health and is not a substitute for the vehicle's required operating or HV safety procedures.
- 40. A** — The adjustment must be verified using the actual equipment and vehicle process along with the complete assembly requirements. Matching marks document an action but do not prove its result. Interpret force and balance by their distinct scopes, and do not substitute a generic number for the manufacturer's specified diagnosis or replacement criteria.
- 41. C** — The controlled movement identifies an insecure connection despite satisfactory endpoint checks. Restore it through the restraint-system repair method and complete required verification. A stored fault is not itself a parts verdict, and memory clearing cannot provide the contact or retention that the actual terminal fails during the prescribed inspection.
- 42. C** — The pressure falls by 2.8 minus 1.6, or 1.2 kPa, during one minute. This quantifies the stated closed test rather than identifying a particular leaking part. Temperature and test configuration must remain within the supplied conditions before comparing the fall with the actual vehicle's diagnostic criterion.
- 43. D** — The actual identification conflicts with the assumed service material and affects equipment and handling choices. Follow the approved process for the detected condition rather than rely only on the label. Dilution or a familiar pressure cannot establish fluid compatibility, cleanliness or a valid service state for the system and equipment involved.

- 44. A** — The closed path directly prevents the intended component circulation despite available pump command and power. Restore the specified route and verify actual cooling before condemning charging hardware. A protection-related limit can be a response to unmet thermal conditions, so it does not alone prove the charger is unable to operate correctly with its required cooling function restored.
- 45. B** — The adjustment's physical result must meet the pattern and other criteria defined for the assembly. Adjuster movement alone reports the action, not the resulting gear relationship. Use the current setup evidence and required measurements rather than substituting an old pattern or an unloaded sound observation.
- 46. D** — The return path carries the fuel flow defined by that injector arrangement. Intake air, coolant circulation and recirculated exhaust use different paths. Return quantity must be assessed under the actual method and operating conditions; its presence alone does not identify an abnormal injector or define an acceptable limit.
- 47. B** — Convert the interval to seconds: 2.0 ms is 0.002 s. Frequency is the reciprocal of the period, giving 500 repetitions per second. This is the specified heartbeat's repetition rate, not a claim about the network's bit rate or the timing of every message it carries.
- 48. A** — The spread is the highest reading minus the lowest: 175 minus 158 equals 17 psi. Compare that spread with the supplied engine criterion when one is available. Neither individual reading nor their sum represents the variation across the measured cylinders under these stated test conditions.
- 49. C** — Subtract the existing stated contribution from total allowance: $1.6 - 0.9 = 0.7$ mm. This is an arithmetic relationship, not authorization for arbitrary shims or material. The actual brake assembly procedure must define suitable components and final checks so the installation meets all retention and operating conditions, not only this numerical total.
- 50. D** — The injector's excessive return provides a measured high-pressure loss path while the low-pressure supply meets its criterion. Investigate the return fault within the prescribed diagnostic sequence. The findings do not eliminate every pump or control cause, but they prevent accepting rail performance from inlet pressure alone.
- 51. C** — The target must remain mechanically related to the real wheel and provide the expected sensing information through operation. Compare those relationships under the required test. A static value or erased message does not expose the original load-related slip, while simulated pulses replace the actual measurement rather than prove the corrected assembly works.
- 52. A** — The repair must provide the required physical thermal function, not merely a changed visible position. Verify circulation and the affected operating response under the applicable conditions. Sound and memory status cannot establish that the previously isolated component now receives its assigned flow or that charging operates appropriately with the restored cooling path.
- 53. B** — The repair concerns operation under an identified thermal condition, so verify the airflow and response in that state. A brief favourable run can miss the protection trigger. Cleared memory and

altered protection cannot demonstrate that the controller now receives its required cooling while performing the assigned vehicle function.

54. D — The friction components need their approved mechanical support as well as hydraulic operation. Verify the hardware using the actual procedure. Physical fit or pressure alone cannot establish suitable retention and travel, and deleting a difficult part changes the designed assembly rather than provides evidence that the completed brake mechanism meets its requirements.

55. B — The terminal and housing need the geometry and retaining features required by their actual connector system. Colour or increased size does not establish suitability. Approved treatment can serve a defined purpose but cannot replace retention, so complete the specified physical repair and applicable circuit checks rather than accepting appearance alone.

56. C — Loose objects can interfere with control or move during braking and turning. Secure them before operating the vehicle and complete the actual pre-test checks. Lower speed or an apparently convenient location does not establish that tools will remain clear of the controls throughout the diagnostic manoeuvre.

57. A — The request and source are available while the return fails under the required load. Diagnose that connection before condemning the command path or changing component size. A no-crank symptom alone has several causes, but the loaded measurement provides direct localization of a condition capable of reducing effective starter supply.

58. C — End gap concerns the ring's ends when positioned in the defined bore condition. Pin, bearing and valve clearances describe different engine interfaces. A measured end gap must still be interpreted with the correct ring type, positioning method and engine specification before deciding its service disposition.

59. A — Multiply the supplied power by duration: $2 \times 45 = 90$ joules. This calculates energy at the stated constant condition, not a universal allowable heating limit. Circuit acceptance still needs the applicable electrical and physical criteria; the arithmetic alone cannot establish that the measured connection is suitable for the vehicle's actual operating duty.

60. B — The pressure checks distinguish adequate hydraulic delivery from the reduced physical braking result. Assess the identified contamination using the prescribed friction-component criteria. A low force measurement does not automatically mean low fluid pressure, and assist or sensing changes cannot restore the material condition directly observed at that wheel's brake interface.

61. D — The command is present, but the actuator lacks its specified loaded supply while failing to move. Investigate that measured electrical path before selecting a selector-input repair. Correct reporting does not establish delivered actuation, and the findings do not yet separate wiring, connection or supply-control causes.

62. A — The complaint occurred intermittently, so verification should exercise the repaired path under the relevant load and permitted disturbance method. Starting only confirms one operating state. Clearing

data removes a record without proving restored contact, and a neighbouring circuit does not establish this connector's performance.

63. B — The verified circuit receives information from a target that no longer follows wheel motion correctly. Restore its specified mechanical relationship and compare actual movement with reported speed. Resetting an input or accepting circuit continuity cannot resolve the measured slip between the target and the physical quantity it must represent.

64. D — Dividing 0.28 V by 14 A gives 0.02 ohm under the stated load, above the supplied 0.015-ohm maximum. The loaded connection therefore fails this criterion. Verify and repair its actual path rather than applying an unrelated unloaded resistance result or assuming an acceptable source voltage certifies the intervening connection.

65. C — Square the given angular speed, multiply by the stated inertia, then apply the one-half factor: 0.5 times 0.20 times 10,000 equals 1,000 joules. This describes the supplied rotating model. It does not establish a service isolation boundary or authorize work on a moving component.

66. A — The physical condition and delivered information are suitable while the receiving setup is mismatched. Resolve that configuration under the authorized procedure before changing passed parts. A warning does not automatically identify a bad sensor, and adjusting actual inventory to satisfy an incorrect interpretation would alter the right vehicle condition instead of repair the identified control setup.

67. D — The fastening interface includes its specified seat relationship as well as thread engagement. Free suspended rotation tests another property and cannot override the failed seat requirement. Select the approved hardware and verify the completed joint rather than treating apparent fit as evidence that its load transfer is suitable.

68. C — The isolated path still passes flow when the commanded state requires closure. Electrical command and physical sealing are separate evidence, so investigate the valve's actual closing condition. The isolation limits a parallel-path explanation, although the findings should still be confirmed using the vehicle's prescribed flow test.

69. B — The procedure requires both removal of the source condition and confirmation at the relevant connection. A stopped pump can leave stored pressure. Another circuit's indication cannot establish this branch's state, and opening the fitting is not a substitute for the required verification before disassembly.

70. C — The failing communication waveform changes at the disturbed local interface while loaded power remains acceptable. Focus the next checks on that signal path and connector condition. The evidence does not specify the exact terminal defect, but it is stronger than inferring a supply fault from module absence alone.

71. B — The operating state changed the meaning of the measurement. The first reading cannot be judged against a sleep criterion while diagnostic access maintains activity. Follow the prescribed state and timing before assessing abnormal draw; the later valid result does not justify replacing modules solely from an observation made under a different condition.

72. A — Routing moves defined information between the architecture's paths; it is different from acquiring the original physical measurement. A routed value still depends on its source and interpretation. Identify the actual message path and module roles before concluding that an incorrect received value was measured incorrectly by the gateway.

73. D — The comparison distinguishes a source that produces the signal from a path that fails to deliver it. Restore the terminal through the approved repair process and verify the circuit. Missing data at one endpoint is not proof of failed sensing when independent checks localize the actual interruption between the two points.

74. A — Complete the required protective-response diagnosis and verification before release, even though ordinary assist works. Cold operation and motor rotation do not reproduce the condition covered by that test. The repair must restore the assigned response under its actual criteria rather than accept one favourable operating state as proof of every steering function.

75. D — The gasket depends on the actual mating surface condition, so perform the required inspection before assembly conceals it. A thicker part or the old gasket's appearance cannot substitute for measured acceptance. Tightening first removes the opportunity to establish the prescribed surface condition directly.

76. C — The measured loose interface is consistent with a load reversal acting through that attachment. Address and verify its prescribed condition rather than replacing a neighbouring support that meets its criterion. The evidence localizes a real defect but still requires confirmation that the original noise is resolved after repair.

77. B — The correction must restore delivered function as well as remove the known obstruction. Verify the actual air paths and temperatures under the applicable conditions. Discarding material documents an action, not its result, and hot hoses or a selected mode do not establish that the installed core now transfers useful heat into the intended cabin airflow.

78. B — The defined position and physical bind provide a local cause despite suitable electrical delivery. Assess the track and related assembly under the procedure. A stopped seat does not automatically prove an absent command or weak supply, and a relearn alone cannot remove the obstruction that the mechanical test identifies in its actual travel path.

79. C — The input represents the quantity assigned to its actual sensing location. It does not universally prove downstream movement or structural suitability. Identify that relationship before interpreting data, because the actuator can report its own position while a detached connection prevents the driven component from reaching the state requested by the control strategy.

80. D — Physical retention is necessary, but the completed restraint circuit still needs the applicable tests and system checks. Appearance or one cleared indication cannot establish all required conditions. Follow the actual procedure rather than treat a successful mechanical repair at one terminal as universal proof of the installed safety system's final integrity.

- 81. A** — Correct cavity assignment is necessary but does not establish that the replaced terminal remains seated. Verify its retention and contact condition through the actual approved method before reconnection. Hand-supported continuity or the opposite connector's condition cannot certify the repaired terminal's installed mechanical relationship.
- 82. A** — The network response changes with controlled connection of the branch, directing diagnosis toward that path and its attached devices. This is localization, not proof of one failed module. Follow the prescribed isolation sequence to distinguish wiring, termination or device effects within the branch that suppresses communication.
- 83. C** — The timing matches the provided normal reset interval, followed by stable availability. This observation alone does not establish a persistent communication fault. Preserve the actual startup definition when interpreting the event rather than treating every brief absence as the same condition as a sustained network failure.
- 84. B** — The replacement's assigned code and cylinder position are the relevant setup information for this procedure. Retaining the old value or copying another injector does not describe the installed unit. Complete the actual coding and verification method rather than treating shared part identity as equivalent individual correction data.
- 85. D** — The repair must restore both the electrical path and its defined construction. Continuity alone cannot certify the conductor arrangement required for the communication link. Use the approved splice and routing method, then complete the prescribed communication checks rather than duplicating a defective joint's appearance.
- 86. C** — The blend door controls the assigned temperature relationship between air paths. Blower quantity, outlet selection and outside-air selection are distinct climate-control functions. A command does not establish actual position, so compare the required movement with the installed door before accepting its delivered-temperature response.
- 87. B** — The original discrepancy appeared under electrical demand, so test the restored return and inputs in that condition. A low-current continuity result can miss remaining resistance. Clearing faults or changing a satisfactory supply does not demonstrate that the repaired local reference now remains suitable while the accessory and sensors operate together.
- 88. D** — The configuration must correctly interpret real vehicle information and produce the assigned response under the applicable checks. A missing warning at one moment does not establish the full function. A permanent simulated condition hides the actual input, so verify the released system through its real sensing path rather than accept an artificial favourable state.
- 89. A** — Bench or component function does not qualify every installed relationship. Resolve the interference through the approved arrangement and repeat relevant checks. A suitable new damper can still be mounted or selected incorrectly, and pressure changes or documentation edits cannot establish the physical clearance required as the actual suspension moves.

- 90. A** — The parameter's calculated status distinguishes its origin from the direct measurement. Preserve the failed physical result and investigate the model inputs and measurement paths. Their disagreement does not alone identify a controller fault, but it prevents accepting the hardware condition solely from the derived display.
- 91. D** — The independent gauge supports the reported low pressure under the same condition. Correct level removes one basic concern but does not prove pump delivery, internal leakage or restriction. Continue the specified mechanical pressure diagnosis rather than treating a corroborated condition as an isolated display fault.
- 92. B** — The exposed passage can be inspected directly before assembly conceals it. Verify its actual condition using the prescribed method. Correct lubricant grade does not establish distribution through a blocked passage, and a later test cannot replace a required inspection that prevents an unverified internal restriction from being assembled.
- 93. C** — The verified independent result and reported input disagree under matched conditions. Investigate sensing and interpretation before treating the display as accurate physical evidence. The findings do not identify one sensor component, but they establish that heat-transfer diagnosis cannot safely rely on that unverified input value alone.
- 94. A** — The indicator reports displacement through the actual fixture and contact direction. Reference movement or unsuitable geometry can change the apparent result even when the scale is readable. Resolution describes the display increment; it does not independently establish the accuracy of the complete measurement arrangement.
- 95. D** — The open connections need protection while the repair proceeds, not just after reassembly. Use the specified clean caps to maintain the required interface condition. Covering the removed part alone leaves vehicle openings exposed, and an eventual operating test cannot establish that contamination was prevented during the work.
- 96. C** — Balance concerns the rotating assembly's mass relationship and its potential dynamic effect. It does not define clutch pressure, software scheduling or lubricant choice. Preserve the actual shaft's marks and assembly procedure, and verify its specified condition rather than assuming every other driveline setting follows from balance alone.
- 97. B** — The marks preserve the installation relationship required for this shaft under its procedure. Bolt-hole alignment alone may permit more than one position and does not establish that relationship. Restore the specified orientation and fastening, then verify the actual driveline rather than borrowing another assembly's arrangement.
- 98. B** — The converter supplies the electrical role defined by the actual architecture, distinct from traction drive or condition assessment. Suitable input energy does not prove its output path works, and a low-voltage complaint needs the applicable command, supply and delivery checks rather than assumption that every electrified vehicle uses an identical conversion arrangement.

99. A — The upstream pressure passes while one downstream branch fails, and the friction inspections provide no defect to explain the difference. Investigate the intervening hydraulic path and connection. These measurements localize a real delivery problem without identifying the exact restriction or leakage feature until the branch checks are completed.

100. D — The short pressure loss occurs with the hesitation and is independently corroborated. Steady operation does not establish delivery during the rapid demand change. Investigate the fuel supply under that specific condition while preserving the possibility of upstream flow, control or restriction causes rather than selecting a part immediately.

101. C — The geometry correction resolves one condition while the load-bearing connection still needs its specified parts and process. Verify them before operation. Socket fit and software cannot establish fastening compatibility, and a clear movement envelope does not prove that the wheel joint is secured correctly for the actual vehicle duty.

102. C — The repair must prevent recurrence and restore the actual friction assembly's function. Follow the required source, installation and operating checks. A new component or cleared message documents limited observations, while altered pressure does not demonstrate that the surfaces and related hardware now meet their assigned condition and performance criteria.

103. D — The joint accommodates the defined shaft-angle relationship while transmitting torque. It is not a brake-control or gearbox-selection component, and its presence does not replace all shaft support. Diagnose its actual movement, fit and angle using the driveline's specified arrangement rather than extending its role beyond that interface.

104. B — The independent temperature agrees with the input and exceeds the supplied protection threshold. Investigate the actual thermal condition and duty using the steering procedure. Replacing a valid sensor or accepting normal cold assistance cannot establish why the limit is reached during the recorded failing operating state.

105. A — The angle input represents the steering position quantity defined by the system and its reference. Applied torque, assist current and lateral acceleration are different measurements. Correct setup and mechanical relationships still matter, so interpret the displayed angle through its actual sensing arrangement rather than assume it reports every steering-related quantity.

106. A — Divide measured pressure by the supplied reference and multiply by one hundred: $198 \div 220 \times 100 = 90\%$. The shortfall is ten percent, a different quantity. This reference is part of the problem, not a universal inflation requirement; actual adjustment must use the applicable vehicle and tire conditions.

107. C — The working circuit still needs a suitable physical route and insulation interface. Correct the opening protection before release because present operation does not demonstrate resistance to later contact or movement. Protection rating changes cannot stop abrasion, and convenient cable length does not qualify an exposed conductor path against a metal edge.

108. B — The replacement needs a complete suitable installation and verified electrical condition before normal release. Connector resemblance and a start attempt do not establish isolation, routing or all

required functional relationships. Follow the actual final sequence rather than use operation or memory clearing as a substitute for the acceptance evidence assigned to the repaired HV system.

109. D — The rating addresses the stand's allowed supported load in its specified use. It cannot certify the jack, floor or lifting position. Match the actual support arrangement to the vehicle and equipment instructions rather than extending one component's rating to the entire lifting operation.

110. C — The liquid can affect exposure, footing and equipment placement, so establish its identity and control the affected area before positioning the lift. Appearance alone cannot determine its hazards. Raising the vehicle does not remove the condition beneath the technician or establish suitable contact and support surfaces.

111. B — The vibration remains without engine firing and follows vehicle motion in the controlled test. Focus diagnosis on components rotating with road speed, while respecting the vehicle's permitted coast procedure. This comparison narrows the relationship but does not identify one shaft, wheel or bearing without further localization.

112. A — The controlled exposure and inspected pinch identify an interrupted drainage route at the recently disturbed area. Restore and verify that path through the body procedure. Wet trim alone would not localize entry, but this evidence is stronger than replacing unrelated seals or treating the final collection point rather than the actual backup condition.

113. D — A dry appearance does not establish the damper's actual motion-control performance. Use the failed prescribed test and related inspections to determine its disposition. Fluid containment and damping function are different observations, so absence of visible leakage cannot overrule an independent result showing the component does not meet its assigned operating criterion.

114. D — The pickup connection must be restored before the pan hides its sealing interface. Confirm the specified fit and attachment at that stage. Pump rotation cannot establish the pickup joint's condition, and similarity to the removed seal does not prove correct installed seating.

115. A — The view must map correctly to the actual housing and circuit before the prescribed measurement is meaningful. Confirm identity and orientation using the vehicle information. Colour and proximity can be ambiguous, while another application can assign different terminals, so those shortcuts cannot establish which path the actual procedure requires testing.

116. B — The repair needs evidence that water now follows its intended route under the condition that revealed backup. A previously dry floor does not test the source, while seal appearance and trim closure cannot demonstrate actual drainage. Repeat the applicable exposure and inspect the path rather than infer success solely from reassembly.

117. C — A module can participate on the network while using the wrong equipment definition. Correct the authorized identification or configuration issue before accepting its commands. Message availability does not establish compatibility, and changing vehicle wiring to accommodate an unverified variant is not supported by these findings.

118. B — The temporary setup provides evidence within its diagnostic purpose, not automatic final acceptance. Follow its required disposition and verify the actual vehicle arrangement after repair. A successful workaround can hide an unresolved original path, so the released circuit must meet its intended routing, protection and normal control functions.

119. D — The completed seat must move correctly under its required conditions and retain the functions affected by the work. A limited unloaded observation does not reproduce the original bind. Follow the applicable assembly and safety checks rather than accept a restored electrical reading as proof that the driven mechanical path now meets its operating requirement.

120. A — The writing process depends on the actual vehicle's stable supply and stated prerequisites. A single initial reading does not establish continued support throughout the operation. Verify the permitted supply arrangement and setup before starting rather than transferring another module's successful conditions without checking their applicability.

121. C — The exterior observation and internal level describe different conditions. A dry housing does not establish correct filling or exclude prior loss. Preserve the measured shortfall and investigate the actual service and leakage possibilities without naming a currently failed seal solely from the absence of a filling record.

122. C — The heat source and control movement are available, but the physical air path cannot use them as intended. Remove the installation obstruction through the appropriate process and verify heat delivery. Hot coolant at a component does not demonstrate useful cabin output when air is prevented from following the required heat-transfer passage.

123. D — The controlled substitution links the loaded fault to the moved assembly and clears the original cylinder in the comparison. It does not establish which internal feature fails. Preserve the same load condition when confirming the coil's disposition rather than allowing an unloaded reading to override the reproduced fault.

124. A — The rod's crankpin bearing supports the force transfer into the crankshaft journal. The other interfaces have valve-motion or cylinder-sealing functions. Identifying the force path does not establish its service condition; clearance, surface condition and assembly requirements still need the actual engine's specified inspection.

125. B — The breather must retain its specified function and route after the repair. Presence alone cannot establish an open path, while plugging it changes the intended pressure communication. Restore the designated endpoint and protection, then check the actual routing rather than treating every available connection as equivalent.