

PRACTICE EXAM 7: 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 driveline vibration test separates engine-speed and road-speed relationships. What should the comparison record?

- A. Only the axle's delivery label.
- B. Only the customer's preferred replacement part.
- C. Only the loudest sound heard in the bay.
- D. The relevant speeds and conditions for each safe test state.

2. A stated differential model uses $\text{carrier speed} = (\text{left} + \text{right}) / 2$. Carrier speed is 42 rpm and left output is 30 rpm. What right speed results?

- A. 36 rpm
- B. 12 rpm
- C. 54 rpm
- D. 72 rpm

3. What does available freeze-frame information generally record?

- A. The complete service history of all vehicle repairs.
- B. Selected operating data associated with a detected fault event.
- C. A direct photograph of every damaged component.
- D. Proof that the part named by a code has failed.

4. A suspension replacement is correctly identified, but its installed locating mark conflicts with the prescribed orientation and its movement check binds. What should be corrected?

- A. Acceptance because its mounting holes fit.
- B. Acceptance because parked height is normal.
- C. Acceptance from correct part number alone.
- D. The actual component orientation and assembled movement.

5. A body-accessory display reports a mechanism open while inspection confirms it closed. The feedback link is detached, but the drive passes its command test. What should be assessed?

- A. The position-feedback mechanical connection.
- B. Motor replacement despite its successful test.
- C. A supply-fuse defect proven by the incorrect display.
- D. Acceptance from physical closure alone.

6. A hybrid control module requests cooling, but the commanded valve cannot move because its linkage binds; verified temperature rises under the defined test. What should be corrected?

- A. The demonstrated thermal-control valve movement fault.
- B. Battery replacement solely from rising temperature.
- C. Acceptance from the cooling request alone.
- D. Sensor replacement despite independent temperature confirmation.

7. A suspension-bushing replacement requires a specific orientation. What should installation preserve?

- A. Only the bushing's outer diameter.
- B. Only the old bushing's compressed shape.
- C. The defined location, orientation, and final assembly checks.
- D. Only the tool's ability to force the part in.

8. A stated wiper-control test has 30 ms on-time in a 100 ms period. What duty percentage results?

- A. 70.00%
- B. 30.00%
- C. 333.33%
- D. 3.00%

9. After restoring a diesel crankshaft-signal wire, what should final checks confirm?

- A. Only unloaded continuity.
- B. Only the starter's ability to turn without diagnosis.
- C. Only the original sensor's part marking.
- D. The module's actual rotation input and affected starting behaviour.

10. A reported output-speed signal is absent, but an independent test confirms output rotation. The sensor's supply meets specification and its local output fails the prescribed test. What merits diagnosis?

- A. The output-speed sensing function.
- B. An engine stall proven by absent reported speed.
- C. A normal sensor proven by supply alone.
- D. A stopped output shaft disproved by independent measurement.

11. A pressure test uses an adapter whose seal is damaged. What should be corrected before relying on the result?

- A. Only the customer's description of the leak.
- B. The complete test connection and verified equipment condition.
- C. Only the gauge's displayed units.
- D. Only the length of the test interval.

12. A circuit operates with a verified substitute load but fails with its original load. The original component then fails its prescribed independent check while the feed and ground comply. What is supported?

- A. Acceptance because the wiring is intact.
- B. A common feed fault disproved by comparison.
- C. A fault associated with the original load.
- D. A ground failure disproved by testing.

13. After a cold soak, a gasoline engine's coolant input reports a temperature far from verified ambient and independent coolant readings. Its reference and ground pass, but the sensor fails the specified response comparison. What is supported?

- A. Acceptance because the sensor has its correct reference.
- B. Fuel-pressure adjustment as proof of sensor recovery.
- C. A physically cold engine disproved by independent readings.
- D. A coolant-temperature sensing fault.

14. A cylinder's compression is deficient. Its approved leak-down test sends air into the crankcase, while the identified valve paths pass their checks. What area is supported for investigation?

- A. The exhaust valve as the demonstrated escape route.
- B. A normal cylinder seal proven by quiet valves.
- C. The ring and cylinder sealing path.
- D. The intake valve as the demonstrated escape route.

15. A stated transmission service needs 5.0 L. Four available containers each hold 1.2 L. What additional volume reaches that quantity?

- A. 4.8 L
- B. 9.8 L
- C. 1.2 L
- D. 0.2 L

16. A refrigerant-line replacement changes an assembly protected by a specified mounting clamp. What should be restored?

- A. Only the connector's electrical retention.
- B. The required line support and service clearance.
- C. Only the old line's total weight.
- D. Only the coupling's pressure-tight appearance.

17. A stated brake piston moves 8 mm through effective area 500 mm². Using 1000 mm³ per mL, what displaced volume results?

- A. 4 mL
- B. 4000 mL
- C. 0.004 mL
- D. 8 mL

18. A clutch slips after repair. Inspection finds its release mechanism held partly applied by incorrect adjustment, while friction-component identity meets the specification. What should be corrected?

- A. A wheel-speed sensor replacement as proof of restored coupling.
- B. Acceptance from correct friction-part identity.
- C. Transmission replacement without resolving the adjustment.
- D. The demonstrated release adjustment and actual clamp condition.

19. A driveline vibration remains at the same road speed when engine speed changes through the approved test. Inspection finds a damaged shaft support, while the tested engine mounts comply. What should be assessed?

- A. Acceptance because the vibration changes with neither idle setting.
- B. Ignition-coil replacement proven solely by vibration.
- C. The road-speed driveline and damaged support.
- D. Engine-mount replacement despite accepted checks.

20. A network harness replacement uses a defined branch length and route. What should the installation follow?

- A. The applicable electrical and mechanical harness requirements.
- B. Only conductor size without the specified branch arrangement.
- C. Only the replacement's outer covering appearance.
- D. Any longer route that reaches the connector.

21. A repaired cable passes through a location requiring heat protection. What should the final arrangement preserve?

- A. Only conductor continuity at room temperature.
- B. The specified thermal protection and clearance.
- C. Only the controller's powered display.
- D. Only the connector's terminal number.

22. A repaired engine meets its pressure check, but the replaced cover still has a localized leak where its seal was displaced on inspection. What remains deficient?

- A. Acceptance from normal engine sound alone.
- B. Acceptance from the new cover's identity alone.
- C. The cover's actual sealing assembly.
- D. Acceptance from the pressure value alone.

23. An EV output is correct at its source connection but absent at the required remote test point. The approved inspection identifies an isolated distribution connection left open after service. What remains to be restored?

- A. The actual intended electrical delivery path.
- B. Source replacement despite its correct result.
- C. A normal remote supply proven by a cleared display.
- D. Acceptance from source measurement alone.

24. Why does an HVAC system's air-distribution door position matter?

- A. It directly meters refrigerant into the evaporator.
- B. It directs airflow through the intended outlet path.
- C. It replaces the compressor's required pressure function.
- D. It directly measures the evaporator surface temperature.

25. A diesel charge-air pressure input is high with the engine stopped. The supplied reference test fails at the sensor, while a verified independent pressure reading matches the stated atmosphere. What is indicated?

- A. Turbocharger replacement solely from the high display.
- B. A real stopped-engine boost condition disproved by the reference.
- C. A normal sensor proven by its connector shape.
- D. A pressure-measurement fault requiring verification.

26. A wheel drags after brake release. Its hydraulic pressure is within the released criterion, but a seized sliding pin prevents the caliper moving as specified. What is indicated?

- A. A retained-pressure fault disproved by measurement.
- B. A mechanical caliper movement fault.
- C. A normal caliper proven by pressure alone.
- D. An ABS sensor fault proven by the seized pin.

27. A differential noise continues after bearing replacement. The final inspection finds its recorded adjustment outside the stated service criterion, while the replacement bearing itself passes checks. What remains unresolved?

- A. Acceptance from the replacement's correct package number.
- B. Acceptance from the new bearing alone.
- C. The actual assembled differential adjustment.
- D. Engine repair solely from recurring noise.

28. A replacement starter is specified for the actual engine variant. What should installation verify?

- A. Only the outside resemblance to the old unit.
- B. Only the connector's ability to fit.
- C. Only the replacement's delivery date.
- D. Correct component, engagement, retention, and affected starting function.

29. A module's communication fails when its connector warms. The prescribed comparison reveals a terminal contact opening there, while supply upstream and the peer bus remain correct. What is supported?

- A. A temperature-related local connection fault.
- B. Independent failure of all peer modules.
- C. A software defect proven solely by warming.
- D. A normal connector proven by cold operation.

30. A steering pull begins after a front tyre change. Alignment complies and the prescribed tyre comparison isolates the pull to the new tyre, while the vehicle-side conditions remain unchanged. What should be assessed?

- A. The identified tyre's contribution to the pull.
- B. Acceptance because the tyre has no visible puncture.
- C. An alignment fault despite the accepted measurement.
- D. A fixed steering-rack fault proven by the tyre comparison.

31. The stated toe convention adds plus 0.15 degree on one wheel and minus 0.05 degree on the other. What total results?

- A. Plus 0.05 degree.
- B. Plus 0.10 degree.
- C. Plus 0.20 degree.
- D. Minus 0.10 degree.

32. What does electrical power express for a stated operating point?

- A. The terminal count in a connector.
- B. The total stored energy without a time basis.
- C. The rate of electrical energy transfer.
- D. The circuit resistance alone.

33. A stated wheel centre bore is 80.0 mm and mating hub diameter is 79.9 mm. What diametral difference results?

- A. 0.2 mm
- B. 159.9 mm
- C. 0.05 mm
- D. 0.1 mm

34. After replacing a restricted gasoline filter, what should verification include?

- A. The specified pressure and delivery conditions relevant to the complaint.
- B. Only the removed filter's visual contamination.
- C. Only the new filter's package number.
- D. Only pressure with no fuel demand.

35. A qualified EV repair replaces a component in a specified isolation boundary. What must precede return to service?

- A. Only closing the nearest visible cover.
- B. The full prescribed restoration and affected safety/function checks.
- C. Only restoring one low-voltage accessory.
- D. Only clearing the original status message.

36. After correcting a binding selection cable, what should final checks include?

- A. Only smooth movement at the detached cable.
- B. Only deletion of the former history message.
- C. Only its displayed position without the transmission response.
- D. Actual transmission selection and the affected operating response.

37. Why is wheel-to-hub mating cleanliness part of installation quality?

- A. Cleanliness replaces all fastener-tightening requirements.
- B. The interface replaces the required seating inspection.
- C. The interface contributes to the final seating geometry.
- D. Cleanliness alone establishes every bearing's internal condition.

38. A stated engine bore requirement is 82.00 mm and a proposed machining allowance is 0.05 mm on diameter. What proposed finished diameter results?

- A. 82.10 mm
- B. 82.025 mm
- C. 81.95 mm
- D. 82.05 mm

39. An axle connection repair requires replacing a disturbed seal and restoring a specified seating depth. What should be verified?

- A. Only the axle's external label.
- B. Only the former seal's apparent flexibility.
- C. The complete seal identity, position, and assembled integrity.
- D. Only the seal's outside diameter.

40. A lamp relay receives its command but its output remains absent. The contact feed is present and the relay fails the applicable switching test. What should be addressed?

- A. The bulb as proven failed before receiving power.
- B. The relay's demonstrated switched-path fault.
- C. The contact supply as proven open.
- D. The command source as proven absent.

41. An ABS warning appears after wheel-bearing work. The sensor's wiring passes, but inspection shows the specified target orientation reversed in the installed assembly. What should be reconciled?

- A. The target's actual installed relationship to the sensor.
- B. Acceptance because the bearing turns smoothly.
- C. Sensor wiring replacement despite its accepted result.
- D. A software change solely from the warning.

42. The blower is commanded on, but the required relay contact feed is absent through a verified open fuse-panel connection. The motor passes its approved test. What should be addressed?

- A. Acceptance from the command indication alone.
- B. Motor replacement despite its successful test.
- C. The blower's supply distribution fault.
- D. A refrigerant leak proven by the open feed.

43. A stated battery energy model has 60 kWh total and 20% remaining. What remaining energy results?

- A. 3 kWh
- B. 12 kWh
- C. 120 kWh
- D. 48 kWh

44. A powered mirror adjusts from one switch but not another. The common motor moves correctly, while the failing switch's output does not change during its specified test. What is supported?

- A. A local command-switch path fault.
- B. A common motor failure disproved by operation.
- C. A universal mirror jam disproved by movement.
- D. Acceptance because the other switch works.

45. A loaded feed starts at 14.2 V and ends at 13.1 V on the same reference. What voltage difference results?

- A. 27.3 V
- B. 2.2 V
- C. 0.55 V
- D. 1.1 V

46. A steering component's service procedure requires replacement of its disturbed locking hardware. What should be fitted?

- A. An additional washer as universal compensation.
- B. The old part solely because its threads remain visible.
- C. The specified acceptable hardware and complete retention method.
- D. A same-size substitute without design verification.

47. Before a vehicle's powered seat is operated near exposed wiring during repair, what should be established?

- A. Only that the customer previously used the seat.
- B. The safe movement and electrical state required by the procedure.
- C. Only that the replacement wire is available.
- D. Only that the seat motor can respond.

48. After a wheel-speed target assembly is corrected, what should final verification include?

- A. Only a check that the bearing is quiet parked.
- B. Only matching the outer target diameter.
- C. Only clearing the former warning.
- D. The required installed signal and affected brake-control response.

49. A powered-mirror switch is repaired after an absent command. What should final checks cover?

- A. Its required directions and affected mechanism responses.
- B. Only movement from the other working switch.
- C. Only the old switch's visible label.
- D. Only closure of the connector latch.

50. Why must a hot-work assessment consider fuel vapour in the work area?

- A. The metal's appearance establishes the atmosphere's safety.
- B. PPE automatically removes flammable vapour.
- C. A stopped vehicle guarantees all nearby fuel systems are empty.
- D. An ignition source can affect a flammable atmosphere beyond the heated part.

51. An HVAC temperature input rises abruptly while an independent measurement remains steady. Its connector signal changes when moved, and the input path fails the specified inspection. What is supported?

- A. A real rapid temperature change disproved by comparison.
- B. A local temperature-measurement connection fault.
- C. Compressor replacement solely from the displayed jump.
- D. Acceptance because the physical temperature is normal.

52. An ignition repair removes the misfire, but the fitted coil's connector latch remains broken and disconnects during the required movement check. What is outstanding?

- A. The connection's actual mechanical security.
- B. Acceptance from the stationary misfire result alone.
- C. Acceptance from the new coil alone.
- D. Acceptance from matching terminal count alone.

53. A gasoline fuel-line repair requires a specified locking retainer. What should final assembly verify?

- A. Only clearing the original fuel code.
- B. Only whether the line can be pushed into place.
- C. The approved retention, sealing, and connection arrangement.
- D. Only matching its length without checking the locking arrangement.

54. A scan tool reports several missing modules that share one ground splice. The splice fails its loaded check, while their separate positive supplies comply. What should be assessed first?

- A. Acceptance from the positive supplies alone.
- B. Replacement of each missing module independently.
- C. The shared ground connection.
- D. Positive-feed replacement despite accepted measurements.

55. A restraint-related occupancy input is absent after seat service. Its nonpyrotechnic sensor supply is correct, but the prescribed signal check finds a wire trapped and open beneath the rail. What should be corrected?

- A. Acceptance from correct sensor supply alone.
- B. The demonstrated occupancy-signal connection.
- C. Deployment-unit replacement solely from the warning.
- D. A crash-sensor fault proven by the seat rail.

56. A tyre test records 220 kPa. Using the supplied factor 0.145 psi per kPa, what equivalent pressure results?

- A. 15.95 psi
- B. 220 psi
- C. 1517.24 psi
- D. 31.9 psi

57. A repaired driveline coupling reaches its tightening target, but the required retaining feature is omitted and its service record shows no approved alternative. What remains incomplete?

- A. The specified complete retention method.
- B. Acceptance from torque alone.
- C. Acceptance from a correctly sized coupling alone.
- D. Acceptance from idle operation alone.

58. One network segment communicates correctly, but a gateway's required supply to its second interface is absent at an open feed. Data is available at the first interface. What deserves investigation?

- A. Acceptance because one interface communicates.
- B. A sensor failure proven by data present at the gateway.
- C. The demonstrated second-interface supply path.
- D. Replacement of the working first segment.

59. An EV electrical component replacement specifies verified coolant-circuit preparation before operation. What should be completed?

- A. Only a visible reservoir level.
- B. Only matching hose dimensions without the preparation checks.
- C. Only the replacement component's identification label.
- D. The required fluid, air-removal, integrity, and thermal checks.

60. A hydraulic steering input has correct fluid level, but a prescribed pressure test fails only when a collapsing supply hose restricts the inlet. What should be addressed?

- A. The demonstrated inlet restriction.
- B. A normal hose proven by its exterior when unloaded.
- C. Acceptance from correct fluid quantity alone.
- D. Rack replacement solely from pressure deficiency.

61. A measured clearance must be compared with a vehicle-specific tolerance. What should the technician establish?

- A. Only the number of decimal places displayed.
- B. The correct component, measurement location, and applicable specification.
- C. Only a remembered value from another engine.
- D. Only the part's outside appearance.

62. One ignition coil arcs externally at its damaged insulation during the approved loaded test. The misfire follows that coil during a controlled exchange, while fuel checks comply. What should be addressed?

- A. A fixed-cylinder compression fault despite the moving symptom.
- B. Acceptance because the coil receives its supply.
- C. Injector replacement despite accepted fuel checks.
- D. The demonstrated ignition-coil insulation fault.

63. A scan result is absent on one tool but available on another verified compatible tool at the same vehicle condition. What must be assessed before declaring the vehicle faulty?

- A. The second tool as faulty because it displays more data.
- B. The first tool's coverage and applicable setup.
- C. Every sensor as defective from the first tool's limitation.
- D. The vehicle as proven unable to supply the parameter.

64. An accessory motor runs slowly. Its correct supply is present, but a local ground test fails and its connector heats under the specified load. What should be assessed?

- A. Software replacement solely from connector heating.
- B. Motor replacement solely from low speed.
- C. The ground path's demonstrated electrical loss.
- D. Acceptance from correct supply alone.

65. A brake repair requires inspecting the friction surfaces affected by a leak. What should service follow?

- A. The prescribed contamination assessment and component disposition.
- B. Only repairing the hydraulic leak.
- C. Only adjusting tyre pressure after the leak repair.
- D. Only wiping visible fluid without an acceptance basis.

66. A stated linear steering-sensor model changes 0.5 V over 50 degrees. What voltage change per degree results?

- A. 0.1 V/degree.
- B. 0.01 V/degree.
- C. 25 V/degree.
- D. 10 V/degree.

67. An aftermarket interface reports messages for a different equipment variant. Removing it restores the required original traffic, and its configuration record confirms the mismatch. What should be reconciled?

- A. Replacement of every original sender.
- B. A mechanical engine failure proven by restored traffic.
- C. Acceptance because its connector fits.
- D. The interface's actual compatibility and configuration.

68. A diesel runs poorly after refuelling. The prescribed sample test confirms unsuitable contamination, while compression and supply-circuit electrical checks meet their requirements. What should be addressed?

- A. Acceptance because the engine still starts.
- B. Engine overhaul solely from rough running.
- C. The confirmed fuel condition and required system disposition.
- D. Electrical pump replacement despite correct supply.

69. After refrigerant-hose replacement, the system passes its static leak check but the hose pulls on its connection during normal engine movement because its approved support is missing. What must be corrected?

- A. The final support and movement arrangement.
- B. Acceptance from a new connection seal alone.
- C. Acceptance from correct hose diameter alone.
- D. Acceptance from the static result alone.

70. A wheel-bearing complaint follows impact. The required inspection identifies a damaged hub surface and an assembly measurement outside its stated tolerance. What warrants correction?

- A. The actual wheel-end geometry and affected components.
- B. Acceptance from a quiet idle test.
- C. Engine repair solely from impact history.
- D. Acceptance from unchanged tyre pressure alone.

71. A brake-control system receives an implausible yaw value with the vehicle stationary. An independent stationary check confirms no rotation, and the sensor's reference test fails. What is supported?

- A. A tyre failure proven solely by the yaw value.
- B. Actual vehicle rotation disproved by the comparison.
- C. A normal sensor proven by network communication.
- D. A yaw-measurement fault requiring diagnosis.

72. What does accessory position feedback report when operating correctly?

- A. A direct measurement of battery chemical capacity.
- B. The sensed physical state of its defined mechanism.
- C. Proof that every motor command was delivered.
- D. A universal indication of all body-system positions.

73. A body-control repair restores a command, but its required position report remains wrong because a documented initialization step is incomplete. What is outstanding?

- A. Acceptance from deletion of an old fault alone.
- B. Acceptance from a new module alone.
- C. The applicable reference setup and feedback verification.
- D. Acceptance from command delivery alone.

74. A replacement electrical load operates, but its installed wire route is trapped between two moving panels and fails the required clearance inspection. What needs correction?

- A. The final conductor route and mechanical protection.
- B. Acceptance from matching wire length alone.
- C. Acceptance from initial operation alone.
- D. Acceptance from the load's correct part identity alone.

75. What is the camshaft's relevant engine function?

- A. Convert piston movement into crankshaft rotation directly.
- B. Smooth crankshaft speed through its stored rotational energy.
- C. Control the applicable valve-event motion and timing.
- D. Transfer piston force into the crankshaft journal.

76. A service tool remains attached to a rotating component after setup. The final checklist requires its removal before running, but the operator sees correct alignment marks. What prevents startup?

- A. A clear surrounding floor as proof of readiness.
- B. The tool's low mass as proof of safe rotation.
- C. Correct marks as proof the attached tool may remain.
- D. The outstanding restoration requirement at the rotating assembly.

77. A stated accessory repair calculation uses 3 A through a 0.2-ohm connection. What voltage loss is implied by $V=IR$?

- A. 3.2 V
- B. 0.6 V
- C. 0.0667 V
- D. 15 V

78. Why does disconnecting a low-voltage battery not universally establish an EV's high-voltage work condition?

- A. All vehicle electrical architectures use one identical boundary.
- B. A dark cabin display proves every conductor voltage-free.
- C. The traction circuit has its own defined sources and verification requirements.
- D. Low-voltage disconnection empties every traction cell automatically.

79. What distinction separates brake-fluid pressure from brake-pad friction force?

- A. Pressure acts on area to produce the mechanical application force.
- B. Pad force alone determines the circuit's effective piston area.
- C. Pressure and force are identical quantities in different spellings.
- D. Fluid pressure alone specifies every friction coefficient.

80. A cooling complaint continues after an airflow obstruction is removed. Independent testing identifies an actual charge leak at a hose joint, while corrected airflow meets its check. What remains unresolved?

- A. Acceptance from the airflow correction alone.
- B. Blower replacement despite correct airflow.
- C. A normal charge proven by the running fan.
- D. The demonstrated refrigerant-boundary leak.

81. A micrometer reads the supplied reference correctly, but its vehicle measurement was taken at a worn edge instead of the procedure's specified central location. What should be corrected?

- A. The instrument as proven inaccurate.
- B. The measurement's physical reference location.
- C. The reference block as defective despite its result.
- D. The service limit replaced by the edge value.

82. A transmission test requires the complaint's selected gear and temperature. What should be established before interpreting its pressure reading?

- A. Only the pressure gauge's maximum scale.
- B. Only the vehicle's parked selector label.
- C. Only the transmission's exterior dimensions.
- D. The exact defined operating state and measurement connection.

83. Where does a gasoline port injector deliver fuel in its normal design?

- A. Into the vapour route through a purge valve.
- B. Into a central throttle-body injection position.
- C. Into the individual engine intake port.
- D. Directly into the cylinder combustion chamber.

84. What does a driveline coupling's specified operating limit describe?

- A. Its permitted duty under the stated service conditions.
- B. Every connected component's capacity automatically.
- C. A universal support rating independent of connected load.
- D. A universal clearance for every axle design.

85. An intermittent electrical fault follows water entry. Inspection identifies a conductive bridge between two specified terminals, and isolating that connection removes the fault. What should be corrected?

- A. A normal connector proven by a secure latch.
- B. The contaminated connector and required protective arrangement.
- C. Replacement of every module powered by the harness.
- D. Acceptance because the exterior later dries.

86. A diesel contaminated-fuel procedure specifies component inspection before refill. What should the repair preserve?

- A. The complete cleaning, component disposition, and preparation sequence.
- B. Only draining the visible tank contents.
- C. Only fitting one new filter regardless of findings.
- D. Only filling with correct fuel before assessing remaining contamination.

87. What is a DC-to-DC converter's principal electrical role in its specified vehicle circuit?

- A. Convert DC into motor-driving AC as the inverter.
- B. Convert between the defined DC voltage levels.
- C. Store energy chemically as the battery.
- D. Convert grid AC directly into battery charging DC.

88. What is a synchromesh mechanism's relevant gearbox function?

- A. Set the tyre's rolling radius.
- B. Permanently eliminate every gear clearance.
- C. Help match the mating rotational speeds for engagement.
- D. Measure clutch fluid volume directly.

89. A clutch assembly repair requires a specified alignment tool before tightening. What should be used?

- A. Any convenient rod judged by outside appearance.
- B. The previous assembly's visible marks only.
- C. The transmission's weight as the default centring method.
- D. The applicable tool and complete assembly sequence.

90. A suspension knocks when one link reverses load. The prescribed test finds excess movement at that link's joint, while neighbouring joints comply. What should be corrected?

- A. Wheel balancing as proof of removed joint play.
- B. The demonstrated joint condition.
- C. Replacement of every compliant neighbouring part.
- D. Acceptance because the vehicle is level parked.

91. A rear defogger command and relay output are correct, but its local ground is disconnected and the load receives no complete operating path. What should be addressed?

- A. Switch replacement despite present command.
- B. Relay replacement despite correct output.
- C. The demonstrated return-path interruption.
- D. Acceptance from measured positive voltage alone.

92. A stated comparison expects 600 rpm and measures 630 rpm. Using excess/expected times 100, what overspeed percentage results?

- A. 5%
- B. 30%
- C. 4.76%
- D. 105%

93. An EV charging fault occurs after a cable connection is repaired. The charger input status stays absent, and the prescribed low-voltage signal test finds the required status conductor open at the repair. What should be assessed?

- A. A universal grid outage proven by an open local signal.
- B. Battery-cell replacement solely from charge refusal.
- C. Acceptance from the cable's external appearance.
- D. The demonstrated charging-status signal path.

94. Using the supplied formula $F = 1.8 \times C + 32$, what Fahrenheit reading corresponds to 20 degrees C?

- A. 68 degrees F
- B. 104 degrees F
- C. 52 degrees F
- D. 36 degrees F

95. After a brake repair, the specified hold test still fails, although its external fittings remain dry. The repair record does not include the required internal-function check. What remains necessary?

- A. Acceptance from dry fittings alone.
- B. Acceptance from replacement-part identity alone.
- C. The outstanding hydraulic diagnosis and defined verification.
- D. Acceptance from the mechanic's completed work time alone.

96. An electrical connection repair requires a specified tightening condition. What should be used?

- A. The old connection's removal effort as the target.
- B. The complete applicable preparation and tightening method.
- C. A larger torque selected only for extra security.
- D. Any lubricant that makes tightening easier.

97. A replacement controller communicates but broadcasts an implausible position value. Its required mechanical reference initialization has not been completed, and the independent position check complies. What remains to be addressed?

- A. The entire bus as proven open despite communication.
- B. Acceptance because the controller answers a scan.
- C. The mechanism as proven misplaced despite measurement.
- D. The applicable reference setup and message verification.

98. A battery test meets the supplied requirement, but starting voltage at the load falls outside its criterion through a measured high-loss terminal. What is indicated?

- A. A normal terminal proven by the battery test.
- B. Battery replacement solely from the load voltage.
- C. A delivery-path fault despite acceptable battery condition.
- D. Ignition-timing repair proven by terminal loss.

99. After an HVAC distribution-link repair, what should final verification address?

- A. Only the actuator's unloaded shaft rotation.
- B. Only the repaired link's package identity.
- C. Only a cleared diagnostic display.
- D. Actual outlet response through the prescribed commands and range.

100. A stated compressor preparation method requires retaining 100 mL from a new unit containing 180 mL. What volume must be removed under that defined method?

- A. 80 mL
- B. 280 mL
- C. 100 mL
- D. 180 mL

101. After a movement-related network fault is repaired, what should verification reproduce?

- A. Only the work-order's completed status.
- B. The relevant harness movement and required communication.
- C. Only a stationary cleared-code report.
- D. Only a photograph of the new connector.

102. A stated load uses 16 W from an 8 V supply under the ideal test. What current results?

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

103. A replaced gateway requires a current vehicle-specific programming package. What should be verified before loading it?

- A. The exact applicability and prescribed programming conditions.
- B. Only the file's availability on the tool.
- C. Only the former vehicle's successful use of that file.
- D. Only the gateway's exterior size.

104. A chemical-cleaning task needs protective gloves. What should selection follow?

- A. Only the shortest expected task duration.
- B. The actual material and task's specified exposure requirements.
- C. Only mechanical tear resistance without chemical suitability.
- D. Only the glove's thickness by appearance.

105. After repairing a crankcase-ventilation connection, what should final checks verify?

- A. Only the hose's approximate length.
- B. Only the engine's stopped exterior appearance.
- C. Only the former complaint code's deletion.
- D. The restored route and required operating pressure behaviour.

106. A crankcase-ventilation complaint includes excessive pressure. Inspection finds its prescribed outlet route blocked, and restoring the test path brings pressure within the stated criterion. What should be corrected?

- A. The demonstrated ventilation-route restriction.
- B. Ring replacement solely from the initial pressure.
- C. An ignition-module replacement as proof of crankcase ventilation.
- D. Acceptance because the engine can idle.

107. A brake pedal sinks during the prescribed hold. The supplied procedure identifies internal pressure loss, and external lines pass the required leak inspection. What should diagnosis assess?

- A. A normal hydraulic system proven by dry external lines.
- B. The remaining internal hydraulic loss paths.
- C. A tyre-pressure fault proven by pedal sinking.
- D. Acceptance from a full reservoir alone.

108. An overheating complaint has verified high coolant temperature. The removed thermostat fails the prescribed opening test, while its sensor matches the independent temperature check. What is supported?

- A. Sensor replacement despite the agreeing measurement.
- B. Acceptance because the thermostat is correctly labelled.
- C. The thermostat's demonstrated thermal-control fault.
- D. A warning display fault as the proven cause.

109. What is steering assistance intended to provide in its normal design?

- A. Set tyre pressure directly from steering-wheel angle.
- B. Replace all alignment measurements with motor commands.
- C. Eliminate every mechanical steering connection.
- D. Reduce the required steering effort through the specified assist system.

110. A valve-spring replacement requires checking its installation orientation and assembled dimensions. What should be completed?

- A. Only checking that the engine turns once.
- B. Only comparing the new and old packages.
- C. Only fitting the spring over the valve.
- D. All prescribed component-position and final-measurement checks.

111. Why should a diagnostic network diagram be used for the actual vehicle configuration?

- A. It defines the installed modules and their communication relationships.
- B. Every vehicle uses identical gateway routing.
- C. Every connector contains the same data terminals.
- D. A general diagram guarantees every optional module is installed.

112. An ideal service calculation needs 5 Ah supplied at a constant 2 A rate. Ignoring losses, what time results?

- A. 0.4 hour.
- B. 2.5 hours.
- C. 7 hours.
- D. 10 hours.

113. A diesel no-start has no recognized crankshaft rotation on the scan tool. An independent sensor test finds its output present locally but absent at the module through an open signal conductor. What should be corrected?

- A. Acceptance because the starter turns the engine.
- B. Sensor replacement despite its local output.
- C. The demonstrated crankshaft-signal delivery path.
- D. Fuel-pump replacement without restoring rotation input.

114. A replacement ignition coil requires specified mounting and connector checks. What should be followed?

- A. The complete installation and affected ignition verification.
- B. Only the engine's ability to run briefly.
- C. Only the replacement's brand label.
- D. Only the coil's supply-pin voltage.

115. A transmission support is removed during repair. What should reinstallation preserve?

- A. Only the old support's surface marks.
- B. The required locating, retention, and load-support arrangement.
- C. Only the vehicle's parked selector position.
- D. Only the fasteners' ability to enter available holes.

116. A stated hypothetical service calculation has 32 equal modules in series, each at 12.5 V. What summed voltage results?

- A. 256 V
- B. 12.5 V
- C. 2.56 V
- D. 400 V

117. A restraint-related sensor replacement requires its specified installation location and orientation. What should be followed?

- A. Only a generic sensor continuity check.
- B. Only clearing the warning after attachment.
- C. The approved mounting and complete system verification method.
- D. Only matching the connector shape.

118. A transmission's selected gear is correctly commanded, but the actual mechanical lever is prevented from reaching its detent by a binding linkage. What is supported?

- A. A fuel-delivery fault proven by lever binding.
- B. Acceptance from the correct command alone.
- C. A selection-path mechanical fault.
- D. Internal clutch replacement solely from the displayed request.

119. A network branch passes its electrical test after repair, but its installed route still crosses the sharp edge identified as the damage source. What remains deficient?

- A. Acceptance from continuity alone.
- B. Acceptance from a stationary scan alone.
- C. Acceptance from the new wire alone.
- D. The required mechanical protection and final routing.

120. A gasoline engine's pressure is correct at idle but delivery under the specified load is low. A restricted filter fails its prescribed flow check, while pump electrical supply complies. What should be corrected?

- A. The demonstrated fuel-flow restriction.
- B. Acceptance from the idle pressure alone.
- C. The sensor solely from reduced output under load.
- D. The supply wiring despite its accepted loaded result.

121. A corroded ground attachment is repaired under a specified surface and fastener method. What should final service include?

- A. Only a check that the fastener has matching threads.
- B. The complete attachment preparation and loaded electrical verification.
- C. Only polishing the visible outside of the cable.
- D. Only movement of the terminal by hand.

122. A stated fuel-use calculation records 45 L consumed over 600 km. What use in L/100 km results?

- A. 13.33 L/100 km
- B. 7.5 L/100 km
- C. 45 L/100 km
- D. 75 L/100 km

123. A branch that formerly communicated fails after a body repair. Its data conductor is trapped beneath a bracket, and releasing the approved test restraint restores continuity and communication. What is supported?

- A. A universal control-module software failure.
- B. A sender failure despite restored communication.
- C. Acceptance from continuity outside the pinched section alone.
- D. A physical branch-routing fault.

124. A disc measures 26.4 mm, planned total removal is 0.3 mm, and the supplied finished minimum is 26.0 mm. What difference above that minimum remains?

- A. 0.1 mm
- B. 0.4 mm
- C. 0.7 mm
- D. 0.2 mm

125. A network trace spans 120 ms and the stated test defines three equal message periods within that span. What period results?

- A. 3 ms
- B. 120 ms
- C. 40 ms
- D. 360 ms

Practice Exam 7: Answer Key and Explanations

1. D — The comparison needs to show which speed relationship the symptom follows under the approved test. Record both relevant conditions so the evidence remains interpretable. A loudness description alone does not distinguish the rotating systems or establish the component requiring repair.

2. C — Rearrange the supplied relation to right speed equals twice carrier speed minus left speed. Twice 42 minus 30 gives 54 rpm. The question provides the model for this calculation; do not assume another gear arrangement or sign convention applies without its own defined relationship.

3. B — The record supplies selected conditions useful for relating the fault to vehicle operation. It is not a complete physical inspection or universal service history. Interpret its scope and vehicle implementation before choosing a reproduction test or assigning a component failure.

4. D — The identification is suitable while the observed orientation and binding fail separate assembly requirements. Restore the specified relationship and verify movement. Mounting-hole fit and normal parked height cannot establish proper operation of a component positioned incorrectly for its required range.

5. A — The detached link prevents the feedback from following the actual mechanism despite normal drive operation. Restore and verify that relationship. Physical closure does not validate an inaccurate input, and the mismatch does not demonstrate an open fuse in a drive that responds correctly.

6. A — The physical binding prevents the requested thermal path from being established, while independent temperature verifies a real operating change. Correct and test that component under the applicable procedure. A command is not delivered cooling, and the observations do not by themselves prove battery damage.

7. C — The specified orientation contributes to the assembly's intended movement and loading relationship. Verify it with the applicable seating and tightening requirements. Correct diameter and successful pressing do not demonstrate that an asymmetrical or positioned component occupies its required installed orientation.

- 8. B** — Duty percentage is on-time divided by complete period, multiplied by 100. Thirty divided by 100 gives 30 percent. The stated relation does not equate this value directly with motor speed or establish another vehicle's control frequency without its own applicable data.
- 9. D** — The repair must deliver the required signal to the controller and restore the function relevant to the complaint. Continuity alone does not demonstrate the operating waveform at its destination. Verify the actual input and prescribed start conditions rather than accepting solely from physical engine rotation.
- 10. A** — The physical output rotates while the sensing function fails to represent it. Diagnose the sensor and relevant local path using the service method. Correct supply is a supporting condition, not proof of a valid output, and an absent displayed value cannot overrule independently verified rotation.
- 11. B** — A defective adapter can introduce leakage or prevent the test representing the vehicle boundary correctly. Restore and verify the equipment setup before interpretation. Unit changes and longer observation cannot independently distinguish a test-connection leak from the component condition being investigated.
- 12. C** — The controlled substitute operates on the same path, and the original load's independent failure provides corroborating component evidence. Repair and verify that load. Sound wiring establishes supporting conditions, not acceptable operation of a component that fails its own required check.
- 13. D** — The independent measurements establish the actual cold-soak condition, and the failed sensor comparison identifies inaccurate input despite adequate supporting circuits. Correct and verify that sensing path. A correct reference is necessary but cannot prove that the sensor represents the physical temperature.
- 14. C** — The crankcase escape path directs investigation toward ring or cylinder sealing, while the valve checks reduce support for those routes. Follow the mechanical method to identify the actual component condition. Quiet valves do not establish a sound cylinder when another leakage path is directly observed.
- 15. D** — The containers provide four times 1.2, or 4.8 L. Subtract that from the stated 5.0 L requirement to obtain 0.2 L additional volume. This plans the supplied quantity; the transmission's actual final level still follows its prescribed service method and operating conditions.
- 16. B** — The line must remain correctly supported and clear of harmful contact in the final arrangement. Restore the clamp and verify the route. A tight connection does not establish mechanical protection of the remaining line, and historical weight cannot confirm its required installed support.
- 17. A** — Multiply effective area by travel to obtain 4000 cubic millimetres. Divide by the supplied 1000 cubic millimetres per millilitre for 4 mL. This ideal volume uses the stated movement and geometry; it does not describe fluid loss or specify a bleeding quantity for every vehicle.
- 18. D** — The partly applied release mechanism changes the clutch's required engaged condition despite correct component identity. Restore and verify its adjustment under the procedure. New suitable friction parts cannot establish normal clamp function when the operating mechanism remains in an unintended release position.

- 19. C** — The speed comparison directs diagnosis toward the road-speed path, and its damaged support supplies a specific physical finding. Assess and correct it as required. A general vibration complaint cannot justify replacing verified engine mounts or ignition parts without relevant evidence.
- 20. A** — The harness must maintain the communication arrangement and suitable physical protection specified for the vehicle. Reaching the connector is not the full requirement. Colour and covering appearance cannot establish equivalence of a longer or differently routed branch to the approved assembly.
- 21. B** — The cable must remain suitable in its actual hot exposure, not merely conduct in a room-temperature test. Restore the required protective arrangement and verify its route. A powered display cannot establish that the installed conductor is protected from nearby heat during operation.
- 22. C** — The pressure result establishes one engine condition while the displaced seal explains a separate boundary leak. Correct and verify that assembly before acceptance. New-part identity and normal sound cannot establish tightness at a location where fluid escape remains demonstrated.
- 23. A** — The source result is valid locally, while the open connection explains missing delivery to the remote point. Restore it through the vehicle's approved procedure and verify the final boundary and function. Correct local output cannot establish availability throughout a path still separated after service.
- 24. B** — The door establishes a physical route for the air delivered by the blower. Its actual position must match the requested distribution under the design. Correct refrigerant operation cannot compensate for a door or linkage that leaves the airflow directed through the wrong path.
- 25. D** — The independent reading and failed sensor comparison establish that the reported pressure does not represent the actual stopped condition. Diagnose the sensing path before blaming boost hardware. A high display is not proof of real boost when its measurement function fails a known-reference check.
- 26. B** — The released pressure passes, while the pin directly fails the required mechanical movement. Repair and verify that condition. Hydraulic and sliding functions are separate; correct pressure cannot make a seized component acceptable or identify an unrelated wheel-sensing cause.
- 27. C** — The completed assembly still fails its adjustment requirement, which must be corrected and verified. A sound replacement component does not establish the relationships between all assembled parts. Recurring noise alone is broad, but the final measured discrepancy supplies focused evidence for further service.
- 28. D** — The installed starter must match the application and its mechanical and electrical requirements. Complete the prescribed fit and function checks. External resemblance and connector engagement alone cannot establish correct drive relationship or performance of the starter on the actual engine variant.
- 29. A** — The fault is reproduced at a specific contact under the relevant temperature condition, with supporting comparisons otherwise compliant. Correct and verify that connector. A cold pass does not establish hot reliability, and temperature dependence alone does not prove a software cause.

- 30. A** — The controlled comparison links the pull to the changed tyre rather than a fixed vehicle-side condition. Assess its suitability and actual condition through the prescribed method. A puncture inspection answers another question and cannot establish the absence of a tyre-related directional effect.
- 31. B** — Add the signed readings according to the supplied convention: 0.15 plus negative 0.05 equals plus 0.10 degree total. Ignoring the minus sign would produce a different value. The total must be compared with the applicable alignment criterion using the same convention.
- 32. C** — Power describes energy transfer per unit time and is related to voltage and current at the stated condition. It is not the same as total stored energy or resistance. Distinguishing these quantities prevents confusing watt measurements with energy capacity or connection geometry.
- 33. D** — Subtract the hub diameter from the centre bore: 80.0 minus 79.9 equals 0.1 mm across the diameter. Halving would express a radial value, not the requested difference. Suitability must still follow the actual wheel and hub service requirements rather than this number alone.
- 34. A** — The repair addresses delivery through the filter, so repeat the applicable measurements under the relevant demand. A new part and idle pressure do not establish flowing capacity. Document the completed operating result rather than accepting solely from contamination seen in the removed component.
- 35. B** — The completed repair must restore the actual protected boundary and demonstrate the required affected functions under the vehicle procedure. A closed cover and working accessory cannot establish all those conditions. Message clearing is not a substitute for the prescribed final verification of the repaired assembly.
- 36. D** — The cable must transmit the required motion through the installed mechanism, not merely move when detached. Verify actual positions and related operation. A display indication and cleared record do not establish that the transmission reaches every required physical selection state after repair.
- 37. C** — The actual mating surface affects how the wheel or adjoining component seats in the assembly. Correct preparation must accompany suitable parts and the prescribed tightening method. A clean interface does not independently demonstrate internal bearing condition or eliminate separate retention requirements.
- 38. D** — The allowance is explicitly a diameter increase, so add 0.05 to 82.00 for 82.05 mm. Do not double it as a per-side removal. Actual machining must follow the approved component and final-fit requirements; this arithmetic does not independently authorize a size change.
- 39. C** — The specified depth establishes the sealing relationship in the actual assembly and must accompany suitable replacement material. Correct outside dimensions do not establish its final position. Verify the completed boundary under the relevant procedure rather than relying on the removed part's appearance.
- 40. B** — The command and contact supply reach the relay, while its failed switching check explains missing output. Replace or disposition it under the procedure and verify the load. The data do not support blaming inputs that pass or a bulb that has not received the required power.

- 41. A** — The target orientation is a relevant installation requirement for obtaining the intended rotation information. Resolve it and verify the signal. Smooth mechanical rotation does not demonstrate correct sensing geometry, and sound wiring cannot compensate for a target installed outside its specified relationship.
- 42. C** — The motor can operate separately and the missing contact feed is localized upstream. Repair and verify that distribution path. A command does not establish current delivery, and the electrical interruption cannot prove that the refrigerant circuit caused the absent airflow.
- 43. B** — Multiply the supplied total energy by the remaining fraction: 60 times 0.20 equals 12 kWh. The calculation follows the stated model and does not independently measure battery health. Driving range and actual usable energy require additional vehicle and operating information not provided here.
- 44. A** — The shared drive works from one command, and the absent alternate output localizes the remaining failure to that input path. Diagnose and verify it. Successful movement elsewhere establishes one function but cannot make the failing switch's required operation acceptable.
- 45. D** — Subtract 13.1 from 14.2 to obtain 1.1 V across the stated path. The same-reference and loaded conditions make the pair comparable. Whether the difference is acceptable depends on the specific circuit criterion and test load, not a limit supplied by the subtraction itself.
- 46. C** — The retention components must follow the actual replacement requirement and assembly method. Visible threads do not overrule a specified disposition. Size alone cannot establish equivalence of another locking design, and adding a washer does not automatically restore the required connection function.
- 47. B** — Seat movement can strain or pinch the exposed work, and its electrical state may affect the repair. Establish the prescribed controls before operating it. Prior customer use and motor response do not demonstrate that the current partly dismantled arrangement is suitable for movement.
- 48. D** — The corrected target must produce the required information in its actual relationship with the sensor. Verify its signal and related control operation. Diameter and warning clearing cannot establish accurate wheel-speed data, while a parked noise check addresses another mechanical condition.
- 49. A** — The repaired input must now command the specified functions through the installed system. Test its relevant directions and actual mirror responses. An already working alternate control does not establish success of this repair, and a secure connector cannot demonstrate every commanded output.
- 50. D** — The heat or sparks can expose surrounding vapour, not just the component being worked. Assess the actual atmosphere and nearby operations before starting. A stopped vehicle and protective clothing do not establish that ignition exposure in the surrounding area has been controlled.
- 51. B** — The physical temperature is steady, but the damaged connection changes its reported input. Restore and verify the sensing path before interpreting the jump as a thermal fault. A normal independent measurement does not make the faulty control input acceptable or demonstrate compressor failure.

- 52. A** — The original symptom may improve stationary while the broken latch still fails the connection requirement. Restore retention and verify operation through the applicable movement. A new coil cannot make an insecure connector reliable, and terminal count does not establish installed mechanical engagement.
- 53. C** — The retainer is part of the installed connection's required security and must be restored with its sealing checks. Apparent insertion cannot establish complete engagement. Visual similarity and code clearing do not demonstrate the fluid boundary or retention under actual service conditions.
- 54. C** — The modules share a supporting path whose actual loaded condition is deficient. Restore and verify it before treating the multiple communication absences as separate failures. Positive supply is necessary but cannot establish operation when the common electrical return is inadequate.
- 55. B** — The signal path is physically interrupted at the identified pinch point while its supply passes. Repair through the approved restraint procedure and verify the relevant input. A correct supply cannot establish communication through an open conductor or prove a deployment-unit failure.
- 56. D** — Multiply 220 kPa by the stated 0.145 psi per kPa factor to obtain 31.9 psi. This converts the same test reading. It does not specify the correct inflation target, which depends on the actual vehicle and tyre service requirements rather than this unit calculation.
- 57. A** — The omitted feature is part of the required retention arrangement, separate from the indicated torque. Restore it or use an authorized disposition and verify the final assembly. Correct size and an idle run cannot establish that all connection-security requirements are met.
- 58. C** — The data reaches the first interface while the second lacks its required power through an identified open connection. Restore and verify that supporting path. One communicating segment does not establish availability of another interface or justify replacing the original sender.
- 59. D** — The thermal circuit contributes to the component's service conditions and requires its complete prescribed preparation. Visible quantity and product identity do not establish flow, integrity, or removal of trapped air. Complete the actual vehicle's applicable sequence before evaluating final component operation.
- 60. A** — The collapse occurs under the condition exposing the deficient pressure, identifying a supply restriction. Correct and verify that route before assigning the symptom to the rack. Adequate quantity and an unloaded appearance cannot establish inlet flow through a hose that collapses during demand.
- 61. B** — Clearance acceptance depends on measuring the defined relationship at the stated location and comparing it with the correct requirement. A precise number from another location or application can still be invalid. Match the actual vehicle and procedure before selecting the repair disposition.
- 62. D** — The visible insulation failure and symptom movement link the complaint to the exchanged coil. Repair through the applicable component procedure and verify operation. Supply voltage does not establish proper secondary insulation, while accepted fuel checks and the comparison reduce support for an injector fault.

- 63. B** — The comparison shows the vehicle can provide the data under that condition. Investigate the first tool's compatibility and setup before treating absence as a physical fault. Different tool coverage can explain a missing parameter without demonstrating sensor or module failure.
- 64. C** — The ground measurement and local heating identify a resistive return condition that can reduce load operation. Correct and verify it before condemning the motor from speed alone. A good positive supply cannot demonstrate the separate ground path's current-carrying performance.
- 65. A** — The leak correction stops one source, while the affected friction components need their own suitability assessment. Apply the prescribed disposition and final brake checks. Visible wiping cannot establish acceptable friction material condition, and an unrelated tyre adjustment cannot restore a contaminated braking interface.
- 66. B** — Divide the stated 0.5 V change by its 50-degree interval to obtain 0.01 V per degree. The linear relation is explicitly given for the example. Do not apply that gain universally to a different steering sensor or interpret it as the signal's complete absolute calibration.
- 67. D** — The traffic change follows the added interface, and its documented configuration does not match the vehicle. Resolve those conditions through the approved installation method. Mechanical fit cannot establish suitable message handling, and the comparison does not prove failure of the original network components.
- 68. C** — The sample supplies direct evidence about the fuel condition affecting the system. Follow the approved contamination disposition and verify the relevant components. Satisfactory compression and electrical checks reduce support for selecting those repairs solely from the broad rough-running symptom.
- 69. A** — The static boundary test does not cover the known mechanical demand created by the missing support. Restore and verify the installed route through the relevant movement. Suitable diameter and a new seal cannot establish that the connection remains protected from the demonstrated pulling force.
- 70. A** — The inspection and measurement provide specific wheel-end evidence beyond the impact history. Correct or disposition the affected assembly through its service requirements. A stationary engine test and tyre pressure do not establish acceptable hub geometry under the identified damage.
- 71. D** — The independent condition and failed reference test separate actual vehicle motion from the reported input. Diagnose the sensor and relevant path before treating the value as real rotation. A communicating module can still supply inaccurate data and does not demonstrate tyre failure.
- 72. B** — The feedback represents the particular mechanism through its sensor and mounting relationship. It must be compared with actual motion and commands during diagnosis. One position input cannot establish every accessory's state or guarantee that the corresponding drive circuit always functions.
- 73. C** — Command delivery establishes one stage while the reported position still lacks its required reference. Complete initialization and verify the actual mechanism-to-data relationship. A new

component and cleared history cannot demonstrate accurate feedback for the final installed accessory function.

74. A — The circuit presently works, but its confirmed pinch exposure fails the installation requirement and can damage it in service. Correct and verify routing through panel movement. Initial electrical performance and part identity cannot demonstrate mechanical suitability of the installed conductor path.

75. C — The camshaft and associated valvetrain establish valve motion according to the engine design. Crankshaft conversion, connecting-rod force transfer, and flywheel smoothing are different mechanical functions. Diagnose valve events with the applicable mechanical and signal relationships rather than assigning every support-system function to the timing shaft.

76. D — The tool is not part of the required operating arrangement and its removal remains an explicit readiness condition. Complete and verify that step before running. Correct alignment and a clear floor do not establish suitable rotation with temporary equipment still attached.

77. B — Multiply the supplied current by resistance: 3 times 0.2 equals 0.6 V loss. This is the defined model for the stated connection. Its acceptance must follow the actual circuit criterion and load condition rather than treating the calculated value as a universal permissible drop.

78. C — The traction system's condition must be established by its actual trained-service procedure, including the specified isolation and verification. Low-voltage removal affects another defined path and cannot be treated as universal proof. A display state does not independently demonstrate all relevant high-voltage work points are safe.

79. A — Pressure describes force per unit area, and its action on the effective piston area contributes to pad application. Fluid chemistry and tyre dimensions are separate attributes. Use the actual brake design and measurement conditions rather than equating a pressure number directly with total mechanical force.

80. D — The completed airflow repair addresses one condition, but the verified joint leak identifies another outstanding fault. Correct and prepare the refrigerant circuit under its procedure, then verify performance. A running fan cannot establish charge integrity through a leaking boundary.

81. B — The instrument check passes, but the vehicle measurement represents another physical location. Repeat it at the prescribed point before comparing with the service requirement. Calibration cannot make every location interchangeable or justify changing a specified acceptance basis.

82. D — The pressure result belongs to its actual test condition and connection. Establish the prescribed state before comparing it with the service criterion. A large gauge range and correct selector printing cannot show that the internal operating condition matches the defined diagnostic method.

83. C — Port injection delivers fuel into the intake port, unlike a direct injector that supplies the combustion chamber. Identify the actual architecture before choosing test equipment and procedures. Other fluid and emissions paths cannot be treated as equivalent injection destinations.

84. A — The coupling must meet its own applicable loading and operating requirements within the complete driveline. Its limit does not establish the capability of every connected part. Verify the actual

component and assembly conditions rather than extending one rating to unrelated clearances or support-system values.

85. B — The physical bridge and controlled isolation localize the electrical disturbance. Repair and protect that connector as required, then verify installed operation. Dry exterior appearance and mechanical latching do not establish that internal conductive contamination has been removed or that water exposure is controlled.

86. A — The procedure addresses contamination beyond the visibly drained volume. Complete its component checks and preparation before refill and verification. Correct replacement fuel cannot establish that retained material in lines or precision components has been removed or that affected parts remain suitable.

87. B — The converter changes one DC level to another within the defined architecture. AC charging conversion, motor-drive inversion, and chemical storage are separate functions. Identify the actual component and supporting circuit before interpreting a missing output as proof about the whole traction or charging system.

88. C — The mechanism helps bring the relevant rotating members toward the required speed relationship before engagement in its design. It does not eliminate every clearance or control tyre dimensions. Inspect its actual components and operation according to the applicable transmission service procedure.

89. D — The tool establishes the alignment needed by the prescribed assembly method. Use the appropriate equipment and sequence before tightening. Approximate appearance and old marks do not establish the actual relationship, while using an assembly's weight is not a universal substitute for controlled alignment.

90. B — The repeated load condition and measured local movement identify a mechanical fault at the link joint. Correct and verify it according to its service requirements. Parked height and wheel balance do not establish acceptable play at the joint involved in the reproduced noise.

91. C — The missing ground prevents the circuit completing its required current path even though positive-side controls work. Restore and verify that connection under load. A positive voltage reading is not proof of delivered heating when the return relationship is absent.

92. A — The excess is 630 minus 600, or 30 rpm. Divide by the specified 600 rpm reference and multiply by 100 for 5 percent. Dividing by measured speed would give another percentage and would not follow the supplied comparison definition.

93. D — The identified signal interruption is part of the vehicle's required charging information path and directly follows the repair. Restore and verify it through the trained-service procedure. Charge refusal alone cannot prove battery damage or a grid failure when a specific local status connection is open.

94. A — Multiply the supplied 20-degree C value by 1.8 to obtain 36, then add 32 for 68 degrees F. Both the scaling and offset are required. This conversion allows like-for-like comparison; it does not alter the physical temperature or establish sensor accuracy by itself.

- 95. C** — The failed hold shows the required operating result remains unmet despite external tightness. Complete the prescribed internal check and correct the demonstrated cause. Dry boundaries establish one condition, not full hydraulic performance, and work completion cannot substitute for acceptance of the tested function.
- 96. B** — The method defines how the connection should be assembled to provide its intended contact and retention. Follow its actual preparation and tool requirements. Removal effort and arbitrary lubrication cannot establish equivalent final conditions, while extra torque is not a substitute for compliance with the stated assembly.
- 97. D** — The physical position is acceptable while the controller lacks its required reference procedure. Complete that setup and verify the delivered value before further component diagnosis. A scan response shows communication, not accuracy of every measurement contained in the module's messages.
- 98. C** — The battery comparison establishes its tested condition, while the loaded path measurement identifies loss after that source. Correct and verify the terminal. A satisfactory source cannot deliver its required energy through an unacceptable connection, and the observation does not diagnose engine ignition timing.
- 99. D** — The repaired link must transmit actuator motion to the intended air-control function. Verify actual outlets under the required command range. Unloaded rotation and component identity describe other attributes and cannot establish that the final linkage produces the specified distribution response.
- 100. A** — Subtract the required retained 100 mL from the supplied 180 mL to obtain 80 mL removal. The method and quantities are explicitly given for this example. Actual compressor preparation must follow its specified oil type and quantity rules rather than assuming this retention value applies universally.
- 101. B** — The original condition must be represented to verify that the repair remains conductive and secure in service. A stationary scan can miss the failure that movement previously exposed. Test the affected path under the approved method and document its actual response.
- 102. C** — Divide supplied power by voltage: 16 W divided by 8 V equals 2 A. The values define the ideal test point. A different supply or varying load would need its own measurements and model rather than reuse of this current as a universal accessory specification.
- 103. A** — The package must match the actual vehicle and component under the approved procedure. File availability and a successful installation elsewhere do not establish applicability here. Complete the required electrical support and configuration checks before accepting the programmed replacement.
- 104. B** — The glove must suit the identified chemical and actual use conditions under the relevant safety information. Thickness and tear resistance do not establish the required chemical suitability. Brief duration alone cannot authorize equipment that has not been evaluated for the task's exposure.
- 105. D** — The repair must provide the specified ventilation path and correct the pressure condition relevant to the complaint. Verify operation through the applicable method. Hose length and code

clearing do not demonstrate that the installed arrangement permits the required flow under engine operation.

106. A — The controlled restoration changes the pressure to the required condition and identifies the blocked route as a relevant cause. Correct the approved permanent arrangement and verify it. High crankcase pressure alone would not prove worn rings when a specific ventilation obstruction is demonstrated.

107. B — Dry external boundaries eliminate neither internal loss nor every cause of the failed hold. Continue the applicable internal hydraulic diagnosis rather than accepting from reservoir quantity. The test directs investigation within the pressure system and does not demonstrate a tyre-related cause.

108. C — The failed thermostat test supplies a mechanical control finding consistent with the verified hot condition. Replace or disposition it as specified and verify the completed system. Correct identity does not establish operation, and the matched sensor evidence does not support treating the warning as a mere display error.

109. D — The assist system contributes to the steering force under its control strategy while the complete steering arrangement remains essential. It does not eliminate alignment or tyre requirements. Diagnose assist inputs and actual response without assuming that a command proves the mechanical path is sound.

110. D — The spring must meet its actual installed requirements rather than merely fit around the valve. Complete orientation and the defined measurements before acceptance. Turning the engine checks another aspect of assembly and does not establish every spring dimension or component placement.

111. A — The diagram must represent the network actually fitted, including applicable gateways and optional modules. A missing component on another configuration is not automatically a fault. Use verified vehicle identity before interpreting communication paths or comparing which modules should respond.

112. B — Divide the stated charge quantity by the constant current: 5 Ah divided by 2 A equals 2.5 hours. The question expressly assumes no losses or current change. Actual charging must follow the applicable battery and equipment procedure rather than using this ideal duration as a universal instruction.

113. C — Physical cranking does not establish that the controller receives the rotation information required by its strategy. The local-to-module comparison identifies an open delivery path. Restore and verify that signal before interpreting absent fuelling as proof of a fuel-pump defect.

114. A — The coil must be fitted and connected correctly and demonstrate its relevant operating function. Supply voltage establishes one supporting condition, not complete ignition performance. A brief run and product identity cannot establish that the original loaded misfire or connection fault is resolved.

115. B — The support carries the assembly through its specified load path and must be located and retained accordingly. Fastener fit is not the full structural requirement. Surface marks may inform removal records but cannot replace verification of the final support and associated clearances.

116. D — For the series arrangement expressly defined, add each identical module contribution by multiplying 32 by 12.5 to obtain 400 V. This is a calculation from supplied values, not authorization to construct or alter a pack. Actual battery service follows its qualified, vehicle-specific procedures and permitted configuration.

117. C — The sensor's physical relationship is part of the restraint system's defined operation and must be restored under its approved method. Connector fit and generic testing cannot establish suitability. Complete the specified installation and relevant verification without substituting ordinary accessory-circuit practices.

118. C — The intended command does not reach the required mechanical position because the linkage binds. Correct and verify that path before treating absent engagement as proof of internal clutch damage. A displayed gear is not confirmation that the physical selection mechanism completed its required movement.

119. D — The electrical repair restores a present path but leaves the demonstrated damaging exposure in place. Correct routing and protection and verify the installed arrangement. A new conductor cannot make the same sharp-edge contact suitable for service merely because it passes a test at rest.

120. A — The filter's failed flow check provides a specific delivery restriction under the condition that exposes the complaint. Correct and verify it before condemning electrical supply that meets requirement. Static pressure does not establish the volume needed during the stated operating demand.

121. B — The ground's contact arrangement must be restored as specified and verified under the relevant current. Visible polishing does not necessarily prepare the actual electrical interface. Thread fit and hand movement cannot quantify the remaining voltage loss of the completed connection.

122. B — Divide the stated consumed litres by travelled kilometres and multiply by 100: 45 divided by 600 times 100 equals 7.5 L/100 km. This expresses the recorded interval. It is not a universal expected value or a diagnosis without comparable operating conditions and service evidence.

123. D — The controlled test links the communication loss to the pinched conductor's route. Correct and protect the installed arrangement under the repair method. Colour and component identity do not establish a sound path when mechanical contact interrupts its actual conductor.

124. A — The proposed final thickness is 26.4 minus 0.3, or 26.1 mm. Subtract the supplied 26.0 mm minimum for a 0.1 mm difference. Actual acceptance must also meet the component's complete machining and service requirements; this calculation addresses only the stated dimensional comparison.

125. C — Divide the stated 120 ms interval by its three defined periods to obtain 40 ms each. The wording specifies complete periods rather than merely three timestamped messages. That distinction prevents treating a count of message events automatically as the same number of intervals.