

PRACTICE EXAM 16: 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. What does an active wheel-speed input generally provide to its associated controller?
 - A. Direct measurement of brake-fluid composition.
 - B. The spring's installed height without another reference.
 - C. The specified signal representing wheel rotation.
 - D. Mechanical tightening force at every wheel nut.

2. An alternator repair produces acceptable output, but its ground connection is left loose outside the assembly requirement. What remains?
 - A. Acceptance from one initial waveform.
 - B. Keeping extra charging load off permanently.
 - C. Adding a larger fuse as ground security.
 - D. Restore specified retention and repeat loaded verification.

3. A moving-door harness is repaired for an open heater feed. What should installation verify?
 - A. Only stationary continuity.
 - B. Specified flex routing, retention and function through door travel.
 - C. Only a closed trim panel.
 - D. Additional tension on the splice to keep it straight.

4. A loose steering attachment is repaired. What should completion verify?

- A. Only a cleared chassis warning.
- B. A road test with unfinished locking hardware.
- C. Specified retention and stable geometry through required movement.
- D. Only static toe before fastening.

5. A source measurement is plausible and correctly transmitted, but one recipient interprets it with an incompatible scale after configuration work. The approved setup record identifies the incorrect parameter. What is supported?

- A. Correct the recipient's applicable interpretation configuration.
- B. Increase charging voltage as data-unit correction.
- C. Replace the valid source sensor immediately.
- D. Change wire resistance to rescale the message.

6. A supplied oil-accounting target is 100 mL and 68 mL is verified retained. What addition reaches the target?

- A. 168 mL.
- B. 3.2 mL.
- C. 100 mL.
- D. 32 mL.

7. Communication fails when a harness flexes. The prescribed continuity check identifies an intermittent open in the bus conductor, while supply voltage remains stable at affected nodes. What should be repaired?

- A. The localized movement-sensitive data path.
- B. All recipient modules independently.
- C. The stable power supplies solely from scan loss.
- D. A stronger diagnostic-tool battery.

8. What does a fuel filter principally remove within its specified duty?

- A. Every form of vapour from the evaporative canister.
- B. Particles within the filtration capability assigned to that element.
- C. All dissolved fuel components regardless of design.
- D. Electrical noise from the injector control circuit.

9. After dashboard work, one HVAC duct is disconnected. Blower and temperature production pass, but airflow escapes into the case area instead of the selected outlet. What should be restored?

- A. The coolant thermostat as the direct duct connection.
- B. A larger compressor as air-routing repair.
- C. The specified duct path and outlet delivery.
- D. More refrigerant to seal the duct.

10. A disconnected HVAC duct is reassembled. What should verification include?

- A. Only that trim panels close.
- B. Secure approved fit, required mode response and actual outlet flow.
- C. Increasing blower speed to hide a remaining duct gap.
- D. Only blower noise.

11. A rotor refinishing calculation predicts sufficient thickness, but the completed surface has a defect outside the supplied finish criterion. What must be resolved?

- A. Covering the defect with incompatible lubricant.
- B. Release from thickness arithmetic alone.
- C. The surface condition and complete brake-component acceptance.
- D. Extra wheel torque as finish correction.

12. A diesel air-control input is replaced after verification. What should completion demonstrate?

- A. Permanent simulation of an acceptable pressure.
- B. Only that the replacement connector fits.
- C. Only one local forced movement.
- D. Required input accuracy and normal commanded actuator behaviour.

13. A supplied preload measurement is 1.8 N·m against a 1.2 N·m target. What excess is calculated?

- A. 0.6 N·m.
- B. 3 N·m.
- C. 1.5 N·m.
- D. 0.06 N·m.

14. A suspension squeak disappears when a prescribed isolation test separates one dry damaged bushing interface. Other related joints pass their checks. What should be localized?

- A. The identified bushing and its approved interface condition.
- B. Replacing every satisfactory joint first.
- C. A different axle ratio as squeak correction.
- D. A brake-fluid change as bushing repair.

15. Why must a repair use suitable insulation for its circuit and environment?

- A. Any visible covering is equivalent.
- B. Insulation changes the module's software variant.
- C. Greater engine speed improves insulation properties.
- D. The conductor must remain electrically protected under the assigned exposure.

16. A no-start command is inhibited because module data reports not-in-park. Mechanical position is verified park, and the prescribed input test identifies an open position circuit. What is supported?

- A. The starter is necessarily defective.
- B. The position-input path needs diagnosis before starter replacement.
- C. A larger battery repairs the input open.
- D. Bypassing the start permissive permanently.

17. A gasoline intake-control fault reports an unachieved position. Its command and supply pass, but the prescribed mechanism test finds the flap disconnected from its shaft. What should be addressed?

- A. Higher fuel pressure as flap coupling.
- B. An arbitrary fixed input to suppress the fault.
- C. The physical linkage and required air-path control.
- D. Module replacement before reconnecting the mechanism.

18. A faulty mechanical latch is replaced. What should completion verify?

- A. Only the dashboard's closed indication.
- B. Permanent disabling of the ajar input.
- C. Specified retention, release, locking and sensed-state functions.
- D. Only matching the old latch's outline.

19. A network diagnosis requires verifying diagnostic access authorization before interpreting refusal. What should the technician establish?

- A. Permission to bypass every gateway safeguard.
- B. Only that the cable fits the socket.
- C. A refused request as proof of a physically shorted bus.
- D. The applicable tool support, vehicle state and authorized access conditions.

20. Oil pressure fluctuates after an oil-pan repair. The supplied inspection finds the pickup connection improperly sealed and air entering that path. What needs assessment?

- A. The pickup assembly and restored lubrication-supply integrity.
- B. Replacing every bearing without pickup checks.
- C. A coolant thermostat as the air-entry path.
- D. Increasing engine load to force a seal.

21. An HV harness is replaced after verified insulation failure. What should final assembly checks ensure?

- A. Only cleared history without installed functional evidence.
- B. Specified connections, protection and HV acceptance checks.
- C. Direct power before verifying the completed path.
- D. Only connector fit without the required isolation checks.

22. A wheel vibration appears after mud accumulates unevenly inside its rim. The prescribed inspection finds no damage, and cleaning the accumulation restores balance within the supplied criterion. What is supported?

- A. A new steering sensor is the mass correction.
- B. The brake-fluid level directly caused imbalance.
- C. The added uneven mass contributed to the vibration.
- D. Permanent wheel deformation is proved despite passed inspection.

23. A brake level-input connection is restored to the correct circuit. What should final checks verify?

- A. A permanently closed warning signal.
- B. Only connector fit without checking the mapped input.
- C. Only cleaning residue without verifying warning response.
- D. Actual level input and specified warning response.

24. A brake releases normally at rest but drags after steering reaches one lock. Inspection finds its hose stretched and kinked at that position outside the supplied routing requirement. What is supported?

- A. Acceptance from centred-wheel release alone.
- B. Correct routing and verify release throughout movement.
- C. Higher fluid level as kink removal.
- D. Replacing every disc as hose routing.

25. An EV's reported coolant temperature is plausible, but actual flow through the specified component is absent because a service valve remains closed. The pump runs normally. What should be restored?

- A. The intended fluid path and verified thermal performance.
- B. A larger battery to overcome the closed valve.
- C. Replacing every sensor before checking lineup.
- D. Acceptance from pump operation and temperature alone.

26. A wheel-speed sensor is correctly seated after repair. What should verification include?

- A. Applicable signal quality and interpreted wheel speed.
- B. Only a resting code check without wheel movement.
- C. A permanent substitute speed signal.
- D. Only bolt fit without testing the required signal.

27. What does state of charge represent within a battery system's defined estimation strategy?

- A. The exact mechanical weight of every cell.
- B. A direct guarantee of remaining battery health.
- C. The estimated charge state relative to its assigned reference.
- D. Proof of zero voltage when the display is low.

28. A valve-spring replacement procedure requires checking installed height and related retention. What should assembly verify?

- A. Only that the spring fits around the stem.
- B. Extra compression as a universal force correction.
- C. Only external shape without installed-height measurement.
- D. Those specified conditions and required valve-train operation.

29. A missing node is found to have its constant supply but no required switched feed because a fuse contact is damaged. Restoring that feed through the approved test permits communication. What is supported?

- A. The module is necessarily defective despite restored access.
- B. The switched-supply path contributes to the node's absence.
- C. Every other node must have failed at the same time.
- D. A common terminator replacement is proved required.

30. A replacement HV harness has the required electrical rating but its installed route contacts a moving linkage outside the supplied detail. What remains?

- A. An unverified abrasion wrap without correcting the route.
- B. Restore the approved mechanical protection and complete HV verification.
- C. Acceptance from the cable rating alone.
- D. A software reset as contact protection.

31. A tire-service record adds 140 g at one approved balancing plane and 85 g at another. What total added mass is recorded?

- A. 225 g.
- B. 55 g.
- C. 11,900 g.
- D. 119 g.

32. A brake assembly will be cleaned where legacy friction dust may be present. What should the technician use?

- A. Compressed air to disperse the dust quickly.
- B. Grinding dust away before identifying the hazard.
- C. The approved dust-control and cleaning method for the assessed material.
- D. A dry brush without exposure controls.

33. A diagnostic capture contains 4,500 records over 15 seconds. What average record rate is calculated?

- A. 0.00333 records/s.
- B. 67,500 records/s.
- C. 4,485 records/s.
- D. 300 records/s.

34. Incompatible transmission fluid is corrected by the approved process. What should final checks assess?

- A. Specified level, setup and relevant operating behaviour.
- B. Only disappearance of a dashboard message.
- C. An unrelated gearbox's pressure chart.
- D. Only fluid appearance without the required level check.

35. A damaged HV connector is wet and the required isolation status cannot be verified with the available equipment. What should the technician do?

- A. Handle it because the vehicle is not ready.
- B. Restrict access and obtain the authorized HV assessment and verification capability.
- C. Dry it with an ordinary tool while connected.
- D. Infer zero energy from a low-voltage battery reading.

36. A recorded event lasts 0.45 seconds. With 1 second = 1,000 ms, what duration is expressed in milliseconds?

- A. 4,500 ms.
- B. 45 ms.
- C. 0.00045 ms.
- D. 450 ms.

37. A recorded circuit drop is 150 mV. With 1 V = 1,000 mV, what value is expressed in volts?

- A. 1.5 V.
- B. 15 V.
- C. 0.15 V.
- D. 150,000 V.

38. A diesel diagnostic pressure of 250 kPa gauge is stated with atmosphere 95 kPa. What absolute pressure results?

- A. 23,750 kPa.
- B. 250 kPa.
- C. 155 kPa.
- D. 345 kPa.

39. A test requires rotating wheels on workshop equipment. What should preparation verify?

- A. Approved equipment, securing and safe personnel positions.
- B. Only tire inflation without equipment-use verification.
- C. Only engine starting without the specified securing checks.
- D. Permission inferred from any lift's rated weight.

40. Why must a brake-hose replacement match its required motion and fitting arrangement?

- A. Additional sealant replaces all mounting brackets.
- B. The complete assembly must preserve pressure integrity and movement suitability.
- C. A matching bore qualifies every hose length.
- D. A tighter bend always reduces hydraulic losses.

41. An engine's stated oil delivery is 2.4 L over 20 seconds. What timed rate is calculated?

- A. 0.12 L/min.
- B. 48 L/min.
- C. 7.2 L/min.
- D. 0.8 L/min.

42. A load's path loses 0.18 V at 5 A. Using $R = V/I$, what effective resistance is calculated?

- A. 0.9 ohm.
- B. 0.036 ohm.
- C. 27.78 ohms.
- D. 0.0036 ohm.

43. A heated-mirror function is intermittent when the door moves. Its local element test passes, but a captured harness open interrupts its feed at the hinge. What is supported?

- A. A permanently larger fuse to bridge the open.
- B. Element replacement despite its passed check.
- C. A new climate compressor as hinge-wire repair.
- D. The movement-sensitive door harness needs repair.

44. A biased cabin-temperature sensor is replaced. What should completion verify?

- A. Plausible input and appropriate automatic control across relevant conditions.
- B. Only a displayed number at one instant.
- C. Only clearing climate history.
- D. Permanent manual heating as repaired automatic control.

45. An approved shaft-balance repair passes its test, but the flange mounting faces remain contaminated outside their supplied assembly condition. What must be resolved?

- A. Acceptance from balance alone.
- B. A higher torque setting as cleaning replacement.
- C. The mounting interfaces and final installation verification.
- D. Adding another balance weight over the contamination.

46. A temperature input becomes implausible only when its connector is heated in the prescribed test. The same independent temperature stays valid and its contact opens during the event. What is supported?

- A. The actual component temperature must change instantly.
- B. Increasing reference voltage closes the terminal.
- C. Every sensor on the vehicle is defective.
- D. A temperature-sensitive connection fault affects the reading.

47. A tire inspection requires using the applicable size, load and condition criteria. What should the technician verify?

- A. Only the tire's nominal size without checking its load rating.
- B. The actual tire and vehicle requirements before assigning suitability.
- C. A generic maximum speed as every tire's acceptance.
- D. Only that the wheel can be bolted on.

48. A synchronizer repair is completed. What should verification include?

- A. A faster road shift to seat the parts.
- B. Only filling any available lubricant.
- C. Specified setup, actuation and selection operation.
- D. Only gear selection with the engine stopped.

49. An engine loses power at high speed. The prescribed inspection measures valve-spring force below its criterion while cam lift and relevant fuel checks pass. What should be investigated?

- A. The affected valve-control mechanism and spring condition.
- B. Fuel-pump replacement despite its passed checks.
- C. A battery change as spring-force repair.
- D. An airflow-sensor offset to conceal the mechanical result.

50. A protected circuit trips during one actuator's motion. Isolating that load removes the excess current, and the component's prescribed test confirms an internal fault. What should be assessed?

- A. A permanent larger protection rating.
- B. An unrelated module's software as component restoration.
- C. Replacing every branch fuse repeatedly.
- D. The localized actuator and correct protective-circuit duty.

51. What does a body latch-position input generally report?

- A. The sensed state defined for the particular latch mechanism.
- B. All window-motor currents directly.
- C. The exact strength of every door hinge.
- D. The selected position of the window glass.

52. A brake-hose inspection must cover suspension and steering travel specified by the procedure. What should checks confirm?

- A. Only appearance at normal straight-ahead height.
- B. Required clearance, freedom from tension and suitable shape through that range.
- C. An arbitrary extra-long hose as universal clearance.
- D. Only that the fittings are tight.

53. A CVT diagnostic test specifies a particular fluid temperature. Why should that condition be established?

- A. Temperature selection replaces circuit checks.
- B. The fluid label alone proves every operating value.
- C. Its expected behaviour and measurement limits depend on the defined test state.
- D. Any convenient temperature produces identical hydraulic results.

54. What does transmission backlash describe at the specified gear interface?

- A. The fluid's measured chemical viscosity.
- B. The input sensor's electrical duty cycle.
- C. The defined clearance between engaging gear-tooth surfaces.
- D. The tire's loaded diameter.

55. A workpiece ejects slightly during a press setup trial because its support is uneven. The intended load has not yet been applied fully. What should happen?

- A. Use a faster stroke to shorten the unstable interval.
- B. Stop and correct the approved fixture and support arrangement.
- C. Hold the workpiece by hand during pressing.
- D. Continue because the final load will seat it harder.

56. A door-closed display is correct but the latch fails its prescribed mechanical retention test. What should diagnosis recognize?

- A. The physical retaining function remains faulty despite a valid input.
- B. A new tire-pressure sensor is required.
- C. A software update mechanically repairs the latch.
- D. The correct display proves the door is safely retained.

57. After a pickup seal is replaced, the engine passes the specified oil-supply test but fresh leakage remains at the disturbed pan joint. What is needed?

- A. More oil above the specified level.
- B. Acceptance from delivery performance alone.
- C. A thicker pickup seal as pan-joint repair.
- D. Resolve the separate containment fault and verify the completed repair.

58. A shaft vibration remains with acceptable runout. An approved balance check fails, and inspection finds a missing balance weight. What is supported?

- A. The shaft's balance condition needs correction under the procedure.
- B. A larger bearing as replacement balance weight.
- C. Changing transmission software to balance the shaft.
- D. Runout acceptance proves complete rotating integrity.

59. An EV's charging power is reduced when its required cooling pump is reported inoperative. Direct tests find no pump current because its supply path is open, while the pump passes its component check. What should be repaired?

- A. Bypassing pump monitoring during charging.
- B. The pump's supply and verified thermal-control path.
- C. A new traction battery without thermal repair.
- D. The charger solely because power is reduced.

60. A rear-wiper arm index is corrected. What should final checks include?

- A. Only the blade's length.
- B. Adjusting the park indicator without moving the arm.
- C. Specified park position, sweep clearance and related wiping operation.
- D. Only one motor turn with the arm removed.

61. Why must a network measurement identify its test connection point?

- A. Every terminal always represents the same bus state.
- B. Connection location automatically proves sensor accuracy.
- C. Any gateway removes the need for a diagram.
- D. Different segments and included paths can produce different observations.

62. A powered accessory diagnosis requires checking mechanical resistance before forced actuation. What should preparation do?

- A. Apply maximum power first to break the bind.
- B. Follow that inspection and keep the approved movement area clear.
- C. Skip inspection if the control signal is present.
- D. Use hands in the moving joint to feel resistance.

63. A fuel filter fits the housing, but its documented pressure and flow limits do not cover the supplied service requirement. What should be installed?

- A. A lower pump command without authorized review.
- B. A second identical filter in series as capacity qualification.
- C. The fitting filter because size is correct.
- D. A verified compatible element or assembly meeting the full duty.

64. A duplicate-node-address conflict is corrected by the approved setup. What should completion verify?

- A. Distinct applicable identities and operation of all required nodes.
- B. Only the programming tool's battery level.
- C. Only appearance of one node in a scan.
- D. Permanent removal of the other node.

65. A specified fill is 2.75 L, and 2.30 L has been added. What further volume reaches that total?

- A. 5.05 L.
- B. 0.045 L.
- C. 0.45 L.
- D. 1.375 L.

66. A diesel pressure-sensing hose arrangement is restored. What should verification include?

- A. Only clearing the previous filter code.
- B. An estimated differential entered into memory.
- C. Only the hose's external colour.
- D. Correct connections, clear passages and plausible measured response.

67. A stated input shaft speed is 3,600 rpm through a 2.4:1 reduction. What ideal output speed results?

- A. 1,500 rpm.
- B. 8,640 rpm.
- C. 3,597.6 rpm.
- D. 864 rpm.

68. A specified HVAC temperature comparison uses 30°C ambient and 11°C outlet. What difference is calculated?

- A. 41°C.
- B. 0.367°C.
- C. 19°C.
- D. 2.727°C.

69. A propeller shaft rotates at 2,100 rpm. With one event per revolution and frequency = rpm/60, what frequency results?

- A. 0.0286 Hz.
- B. 35 Hz.
- C. 126,000 Hz.
- D. 210 Hz.

70. A pressure-test adapter is documented for a different thread and seal interface from the vehicle connection. What should be used?

- A. The mismatched adapter tightened farther.
- B. A compatible approved adapter and test arrangement.
- C. Extra sealing tape as thread-system conversion.
- D. An unverified universal coupling forced onto the port.

71. A hybrid's isolation fault disappears when an auxiliary HV harness is separated by the prescribed method. Independent component checks pass, but the disconnected harness fails its specified insulation test. What is supported?

- A. The localized harness requires approved assessment or replacement.
- B. All auxiliary components must be replaced despite their passed tests.
- C. Software clearing restores damaged insulation.
- D. A low state-of-charge display qualifies the harness.

72. A supplied charging model uses 12 kW input for 1.5 hours at 88% net energy efficiency. What stored energy is calculated?

- A. 18 kWh.
- B. 20.45 kWh.
- C. 13.5 kWh.
- D. 15.84 kWh.

73. An EV cooling-pump supply is repaired. What should completion include?

- A. Only cleared history without checking charging behaviour.
- B. Permanent simulated pump feedback.
- C. Specified electrical, flow and charging-response checks.
- D. Only pump sound without verifying actual coolant flow.

74. An alignment complaint remains after adjustment. Ride height meets its requirement, but a worn mounting interface moves beyond its supplied criterion during loading. What should be assessed?

- A. A software reset as mechanical mounting repair.
- B. The support stability before accepting final geometry.
- C. Changing tire pressure outside specification.
- D. A second static adjustment without resolving movement.

75. Why should programming power-support equipment meet the specified duty?

- A. A large label replaces actual output verification.
- B. Any initial voltage guarantees every later stage.
- C. Power support automatically repairs communication wiring.
- D. Voltage stability must be maintained throughout the required procedure.

76. A refrigerant system's pressure reading at its sensor remains fixed, but a separate approved measurement follows actual operation. The sensor connector tests reveal an interrupted signal. What is supported?

- A. The pressure-input path needs repair and verified response.
- B. A fixed real pressure throughout every operating change is proved.
- C. Adding refrigerant to move the sensor display.
- D. Compressor replacement before sensing checks.

77. A supplied service step requires a charge-state window of 50–70%. The measured state is 46%. What percentage-point increase reaches the lower bound?

- A. 24 percentage points.
- B. 8.7 percentage points.
- C. 4 percentage points.
- D. 96 percentage points.

78. A faulty actuator is replaced in a protected circuit. What should completion assess?

- A. Only the new part's exterior size.
- B. A permanently enlarged fuse rating.
- C. Only absence of a blown fuse at rest.
- D. Correct application, load current and required control response.

79. A gasoline sensor replacement produces plausible static data, but the required response test still fails under operating change. What remains?

- A. Acceptance from the stationary number alone.
- B. Resolve and verify the dynamic sensing condition.
- C. Adding fuel to force one favourable reading.
- D. Changing the reported limit without authorization.

80. What does pulse-width modulation change in a defined switched-output strategy?

- A. The active portion of the repeating switching interval.
- B. Every load's mechanical gear ratio.
- C. The fuse's material composition.
- D. The conductor's physical diameter during operation.

81. A controlled lamp functions normally. Its scope trace matches the supplied pulsed pattern, but an averaged meter reading is below a reference meant for steady power. What should interpretation do?

- A. Treat the steady reference as universal regardless of waveform.
- B. Increase fuse rating to raise the average.
- C. Use the measurement method applicable to the pulsed output.
- D. Replace the lamp solely from the average value.

82. A vehicle's steering response changes over bumps. Static toe passes, but the prescribed motion check finds a loose steering-link attachment that lets geometry shift. What should be assessed?

- A. A different tire brand as hardware retention.
- B. The identified attachment and operating movement condition.
- C. A new brake booster as toe support.
- D. Acceptance from the stationary reading alone.

83. An intake flap linkage is repaired. What should final checks demonstrate?

- A. Actual range, feedback and required operating response.
- B. Only clip fit without verifying the physical control range.
- C. Permanent locking at one position.
- D. Only actuator motion without checking the linked flap.

84. What is a feeler gauge used to assess in a suitable specified engine check?

- A. The actual volume delivered by a fuel injector.
- B. The total volume of a fluid sample.
- C. The clearance between designated surfaces.
- D. The current flowing through a powered conductor.

85. A gasoline engine misfires after plug replacement. One installed plug's documented heat and reach application differs from the verified engine requirement. Coil and fuel checks pass. What should be established?

- A. Changing fuel pressure to qualify the wrong plug.
- B. A new coil despite its passed test.
- C. Injector replacement from the misfire count alone.
- D. Correct plug applicability and the affected ignition path.

86. A seat-occupancy input fails after a connector's terminals are mixed during repair. Its approved substitution passes, and the diagram identifies the wrong mapping. What should be corrected?

- A. Changing seat foam before restoring the circuit.
- B. The receiving module despite correct response.
- C. Adding a fixed occupant signal as normal repair.
- D. The specified terminal arrangement under the restraint procedure.

87. A supplied angle-tightening sequence adds 45° and then 60° after its specified initial stage. What total added angle is calculated?

- A. 105° .
- B. $2,700^\circ$.
- C. 15° .
- D. 52.5° .

88. A solenoid-feed repair restores current, but the transmission's required pressure response still fails at its test point. What remains?

- A. Increasing fuse rating to create pressure.
- B. Diagnose and verify the remaining hydraulic response.
- C. Installing another connector without evidence.
- D. Acceptance from restored electrical current.

89. A supplied body-accessory installation needs 48 mm total spacing and one approved existing piece is 32 mm. What further spacing is calculated?

- A. 1.5 mm.
- B. 24 mm.
- C. 16 mm.
- D. 80 mm.

90. A fault appears after a replacement node is added. Its hardware is approved, but its configured address duplicates another required node and the application information identifies the conflict. What should be resolved?

- A. A larger battery to separate addresses.
- B. Every data wire as physically shorted.
- C. Removing one required node permanently.
- D. The authorized addressing and configuration arrangement.

91. A temperature-sensitive connector is repaired, and room-temperature checks pass. The original fault occurred after heat soak, but that condition has not been retested. What should verification require?

- A. Changing the sensor limit to include the old fault.
- B. The relevant permitted heat-condition test and circuit response.
- C. A new battery without localized evidence.
- D. Acceptance from the favourable room state alone.

92. An acceleration shudder is localized to an inner CV joint by the prescribed test. Its movement is rough and damaged surfaces are found, while tire and mount checks pass. What needs assessment?

- A. Immediate replacement of acceptable tires.
- B. The engine's charging voltage as the surface defect.
- C. The identified joint and related torque-transfer interfaces.
- D. A new parking-brake switch.

93. A bushing is replaced with the proper application, but required mounting preparation is omitted and the joint moves beyond its supplied criterion. What is needed?

- A. Restore the specified installation and verify the supported interface.
- B. A stronger steering command to conceal movement.
- C. Adding cargo to stabilize the joint.
- D. Acceptance from correct part identity alone.

94. After branch-geometry repair, communication passes but the new splice lacks its specified environmental sealing. What remains?

- A. A software update as sealing material.
- B. Acceptance from current communication alone.
- C. Extra conductor length to avoid the seal requirement.
- D. Restore the complete physical repair and repeat relevant verification.

95. A diesel air-control actuator responds to local test command but normal operation is inhibited. Its required pressure input is inaccurate against an independent measurement. What should be diagnosed first?

- A. Actuator replacement despite successful local response.
- B. Permanent direct power to bypass the strategy.
- C. The input and conditions governing the normal request.
- D. A larger turbocharger as sensor correction.

96. A gasoline sensor diagnosis requires matching its position and circuit to the vehicle diagram. What should the technician verify?

- A. Only the closest reachable sensor.
- B. The actual bank, location and signal path before assigning replacement.
- C. Only a generic code description.
- D. Only connector colour shared by several parts.

97. A commanded transmission solenoid draws no current. Its component check passes, but the prescribed harness test finds an open feed at its connector. What should be repaired first?

- A. The identified electrical supply path.
- B. A larger hydraulic pump as connector repair.
- C. The passed solenoid solely because current is absent.
- D. Changing the final-drive ratio to create current.

98. A simple 12 V load draws 6 A. Using $P = V \times I$, what power results?

- A. 18 W.
- B. 72 W.
- C. 2 W.
- D. 0.5 W.

99. What does a steering tie rod principally transmit in its intended arrangement?

- A. Cooling airflow to the brake disc.
- B. Electrical current to the wheel-speed sensor.
- C. Hydraulic brake pressure to the caliper.
- D. Steering force and motion to the assigned wheel linkage.

100. An AWD mode indicator changes, but actual coupling engagement fails. Required supplies pass, and the prescribed actuator test cannot reach its specified mechanical position. What should be assessed?

- A. A different tire brand as position repair.
- B. Acceptance from the dashboard indication alone.
- C. The actuator and driven engagement mechanism.
- D. Replacing every powered module.

101. A transmission shifts poorly after fluid service. The installed product is documented as incompatible with the supplied application, although level is correct. What should be addressed?

- A. The specified fluid condition and assessment of resulting operation.
- B. Changing tires to alter friction behaviour.
- C. Extra additive without authorized compatibility information.
- D. Acceptance from level alone.

102. A charging waveform fails the supplied ripple criterion under the required load. Battery and cable checks pass, and the approved test localizes abnormal output at the alternator. What should be assessed?

- A. A larger battery as waveform correction.
- B. All body modules independently.
- C. Cable replacement despite acceptable loaded checks.
- D. The alternator's generating and rectifying functions.

103. A diesel aftertreatment fault follows an approved harness repair. The specified exhaust-pressure sensing hoses are now reversed, and the diagram confirms their intended connections. What should be corrected?

- A. The sensing connections and verified differential interpretation.
- B. A forced regeneration as hose orientation repair.
- C. A higher sensor voltage as connection reassignment.
- D. Immediate filter replacement without restoring the hoses.

104. A supplied spring installed-height target is 36.5 mm and the measurement is 37.2 mm. What numerical excess is found?

- A. 0.35 mm.
- B. 73.7 mm.
- C. 0.7 mm.
- D. 0.07 mm.

105. A brake hose is rerouted correctly, but its prior kink damage fails the supplied component criterion. What remains?

- A. Wrapping the damaged section as universal pressure repair.
- B. Replace or disposition the damaged hose and verify the completed path.
- C. Acceptance from the corrected route alone.
- D. Adding fluid to support the kink.

106. A receiver-drier replacement is required after the specified circuit work. What should handling protect?

- A. Only exterior condition without internal protection.
- B. Leaving it open indefinitely until the system is ready.
- C. Only mounting fit without controlling open exposure.
- D. The specified internal dryness and cleanliness.

107. A start-permissive position circuit is repaired. What should completion verify?

- A. Only a cleared no-start message.
- B. Correct input states and the required authorized start behaviour.
- C. Permanent imitation of the park input.
- D. Only whether the starter can be jumped.

108. What is the oil pickup's principal role in its intended lubrication circuit?

- A. Setting lubricant viscosity independently of formulation.
- B. Regulating every downstream oil pressure directly.
- C. Providing the required reservoir-to-pump oil path.
- D. Distributing oil directly to all bearing surfaces.

109. A supplied gasoline test uses 4 ms active time in a 16 ms period. What active percentage is calculated?

- A. 25%.
- B. 400%.
- C. 0.25%.
- D. 12%.

110. An automatic HVAC system commands heat when cabin temperature is normal. Its cabin input is biased cold, and the approved substitution restores the correct request. What should be diagnosed?

- A. A refrigerant recharge as input-bias repair.
- B. A heater-core replacement solely from hot air.
- C. The cabin sensing path and its effect on the control decision.
- D. A larger blower fuse to change sensor calibration.

111. An engine assembly procedure requires a particular fastener-tightening temperature and stage sequence. What should the technician do?

- A. Skip earlier stages if the last setting is known.
- B. Establish that condition and follow the complete specified sequence.
- C. Use the same final number at any temperature.
- D. Combine stages from a different engine family.

112. A communication trace is distorted only at a repaired stub whose length exceeds the supplied installation requirement. Approved correction restores the reference signal. What is supported?

- A. A permanent failure of every node is proved.
- B. A new tire set is the signal repair.
- C. The vehicle's battery chemistry caused the stub length.
- D. The repaired branch geometry affected signal behaviour.

113. A wheel with removed contamination passes its balance check. What should the installation also verify?

- A. Specified wheel condition, mounting and final operating clearance.
- B. Only rim cleanliness without final mounting checks.
- C. Only removed mass without inspecting wheel condition.
- D. An unverified torque chosen from another wheel.

114. A supplied rotor check starts at 26.0 mm. A permitted stated process removes 0.15 mm from each of two faces. What final thickness is calculated?

- A. 0.3 mm.
- B. 25.7 mm.
- C. 25.85 mm.
- D. 26.3 mm.

115. A brake warning follows master-cylinder work. Actual fluid is correct, but the specified level-sensor connector was fitted to the wrong nearby input. The diagram confirms the mismatch. What should be restored?

- A. Adding fluid beyond the prescribed level.
- B. An oversized warning fuse as pin reassignment.
- C. Replacing the sensor without reconnecting it correctly.
- D. The correct circuit mapping and required warning operation.

116. What does an HVAC receiver-drier do in the system that specifies it?

- A. Regulate cabin-mode door position.
- B. Drive the compressor mechanically.
- C. Serve its assigned liquid storage and moisture-control roles.
- D. Replace every low-side accumulator in any layout automatically.

117. Second-gear selection grinds while moving. Clutch release and external linkage meet their checks, but the supplied internal inspection finds the relevant synchronizer fails its criterion. What is supported?

- A. The second-gear synchronizing path needs assessment.
- B. All gearbox gears must be damaged equally.
- C. Tire inflation as engagement-speed matching.
- D. Immediate clutch-cylinder replacement despite passed release.

118. A supplied simplified brake calculation applies 400 N to a piston area of 200 mm². Using pressure = force/area, what pressure results?

- A. 2 N/mm².
- B. 600 N/mm².
- C. 0.5 N/mm².
- D. 80,000 N/mm².

119. An unsuitable spark plug is replaced with the verified application. What should completion assess?

- A. A larger electrode gap as compatibility correction.
- B. Correct assembly and ignition operation in the original complaint condition.
- C. Only a cleared misfire counter.
- D. Only the package's listed model name.

120. A timing measurement changes after an unsecured probe shifts. Repositioning it under the prescribed fixture restores repeatability. What should interpretation account for?

- A. A new sensor is proved required from the first trace.
- B. The specification should be widened to include probe movement.
- C. The measurement setup affected the apparent timing change.
- D. The engine necessarily changed mechanically at the same moment.

121. A low-speed wheel signal drops out after sensor service. Target and supply meet checks, but its documented mounting reference is not achieved because the sensor is not fully seated. What should be corrected first?

- A. A larger fuse to establish mechanical seating.
- B. Brake bleeding as sensor-gap correction.
- C. Controller replacement despite localized mounting evidence.
- D. The specified seating and sensor-target relationship.

122. A rear wiper parks incorrectly after arm replacement. The motor's prescribed park signal and motion pass, but the arm's installed index differs from the supplied reference. What should be corrected?

- A. Increasing fuse rating to alter the park index.
- B. The arm installation and required swept-position arrangement.
- C. The motor controller solely because the blade parks wrongly.
- D. The washer pump as arm-position repair.

123. What information does a diagnostic freeze-frame record provide within its defined capture strategy?

- A. Selected operating data associated with the recorded event.
- B. A guaranteed complete history of every vehicle state.
- C. Proof that the named component is defective.
- D. Automatic repair of an intermittent wire.

124. A corrected recipient scaling configuration requires verification of an affected output function. What should completion do?

- A. Only record that a setting was changed.
- B. Only clear communication history.
- C. Use another vehicle's output as a substitute observation.
- D. Compare the interpreted value and actual response under the applicable test.

125. An inner CV joint replacement is correct, but its boot is pinched during assembly and fails the prescribed sealing check. What remains?

- A. Leaving the boot vented without approval.
- B. Acceptance because the joint is new.
- C. Correct the boot installation and verify the complete joint protection.
- D. Extra grease outside the torn interface.

Practice Exam 16: Answer Key and Explanations

1. C — The input supplies the wheel-motion information defined by the sensing arrangement. It does not directly inspect fluid or mechanical assembly properties. Correct supply, target relationship and interpretation still require the applicable tests before a reported speed can be accepted as a valid description of that wheel's actual movement.

- 2. D** — A present favourable output does not establish a durable return path when the connection is unsecured. Correct the mechanical contact and verify under load. Protection changes or reduced normal demand cannot replace the fastening and electrical conditions assigned to the alternator's installed ground connection.
- 3. B** — The repaired path must remain protected and conducting as the door moves. Restore the approved flex arrangement and verify the original trigger. A stationary pass does not demonstrate durability at the hinge, while extra splice tension can impose another mechanical load rather than meet the required movement accommodation.
- 4. C** — The repaired link must remain secure while the system moves and carries its assigned load. Complete the fastening and relevant geometry checks before operation. One unfixed static value does not establish a retained adjustment, and warning status cannot substitute for the mechanical stability the original diagnosis found missing.
- 5. A** — The error is identified in the recipient's configuration while the source and transmitted value remain valid. Restore the authorized parameter and verify the affected function. Physical communication can succeed while interpretation is wrong; altering wiring or power cannot legitimately substitute for the scaling requirement defined by the module's applicable setup.
- 6. D** — Subtract the retained amount from the supplied total: $100 - 68 = 32$ mL. The problem defines its accounting basis; the value is not a universal compressor-oil addition. Actual service must use the specified oil formulation and component procedure rather than assuming all retained and added quantities follow this same example.
- 7. A** — The fault-state tests distinguish a data interruption from lost module power. Restore the conductor and its mechanical protection, then verify movement-sensitive operation. Stable supplies alone do not prove communication continuity, and scan absence should not lead to module replacement when a direct wiring fault has been localized under the same trigger.
- 8. B** — The element acts on the contaminants and size range specified for its filtration duty. It does not universally remove dissolved materials or electrical interference. Correct selection and condition matter, because a physically fitting element can differ in flow, filtration and material suitability from the one required for the actual fuel system.
- 9. C** — The system produces airflow and conditioning, but the physical delivery path is open at the disconnected duct. Restore that arrangement and verify the selected outlet. Heat-generation or refrigerant changes cannot qualify the ventilation connection that inspection directly identifies as failing to carry air to its intended destination.
- 10. B** — The repaired path must be retained correctly and deliver air to its intended outlets across the assigned modes. Trim fit and fan sound do not establish that result. Greater speed can force more air through a remaining gap while leaving the physical connection and distribution requirements unresolved.

- 11. C** — Dimensional margin and surface suitability are separate requirements. Apply the approved disposition for the actual defect before release. A correct predicted thickness cannot qualify the completed friction interface, and torque or lubricant cannot establish the required surface condition for the repaired brake component.
- 12. D** — The repaired input must describe the actual condition so the normal strategy can issue its required command. Verify both measurement and response. A forced movement was possible during the fault and cannot alone confirm the normal sequence, while fixed simulation removes the condition-dependent information the system needs during operation.
- 13. A** — Subtract target from measurement: $1.8 - 1.2 = 0.6 \text{ N}\cdot\text{m}$ excess. The result describes this given setup check rather than a universal preload limit. Correct adjustment must follow the bearing or assembly instructions, including the prescribed state and any related conditions needed for a valid rotational measurement.
- 14. A** — The controlled separation connects the sound to the damaged interface, while other checks narrow alternatives. Assess that bushing under its service requirements rather than applying unapproved lubricant indiscriminately. The symptom alone would not identify a part, but the localized mechanical evidence supports this specific suspension repair path.
- 15. D** — The insulation needs appropriate electrical and environmental suitability in addition to covering the metal conductor. A convenient wrap is not automatically equivalent to the specified system. Engine speed and software do not qualify material performance, so follow the actual repair requirements for the exposed location and circuit duty.
- 16. B** — The control is withholding start because its required input is wrong, with a localized electrical fault identified. Restore and verify that signal under the procedure. A stationary starter alone does not prove failure when it receives no authorized command, and permanent bypass removes the intended condition rather than repairs it.
- 17. C** — The actual driven flap is disconnected, explaining missing physical response despite valid external conditions. Restore the approved mechanism and verify operation. A command or actuator movement cannot demonstrate air-path position when the motion-transfer link is broken, and a fixed simulated value would hide rather than repair the function.
- 18. C** — The replacement must provide physical and monitored functions assigned to the door assembly. Verify them under the procedure rather than accepting the indication alone, which was correct during the original fault. Similar shape or suppressed input cannot establish proper retention or full operation of the installed latch.
- 19. D** — A refused operation can reflect access or support conditions rather than a physical failure. Confirm the actual requirements before drawing a network conclusion. Socket fit alone does not establish compatibility, and bypassing safeguards is not a substitute for following the authorized diagnostic route defined for the vehicle function.

- 20. A** — The repaired pickup interface has a demonstrated condition capable of disrupting oil supply. Restore and verify that arrangement before assigning damage elsewhere. The pressure symptom alone is not a component verdict, but observed air entry at the recently assembled supply path provides a specific mechanical installation candidate.
- 21. B** — The replacement must restore the complete electrical and mechanical arrangement and pass the applicable acceptance checks before normal energization. Similar appearance and cleared history do not establish isolation or routing integrity. Follow the actual high-voltage process rather than using direct power as the initial proof that the repaired path is correctly assembled.
- 22. C** — The controlled removal restores balance and identifies the added material as a contribution under the given checks. This does not prove every tire or chassis condition perfect, but it supplies evidence against immediate structural replacement. Electrical sensing or fluid inventory cannot remove the actual uneven mass found in the rotating assembly.
- 23. D** — The repair must connect the actual sensed condition to the required warning response. Verify both under the applicable process. Connector fit and cleaning document other aspects but do not establish interpretation, while fixed suppression removes the condition-dependent function the correct level input is intended to provide.
- 24. B** — The complaint follows a specific movement that puts the hose outside its required geometry. Assess and correct that path using the procedure, then verify the full range. A centred pass covers a different state, and friction-part replacement does not remove the identified hose stretch or restriction at steering lock.
- 25. A** — A running pump and one plausible temperature input do not establish flow through every required branch. The closed service valve directly interrupts the component's specified path, so restore the approved lineup and verify actual circulation and thermal behaviour. A bypass or another available route may permit pump operation while this component remains unserved. The diagnosis must connect indications to the physical circuit rather than accepting apparently normal data as proof that all thermal interfaces receive their intended coolant flow.
- 26. A** — Correct seating is necessary but the repaired sensing path still needs functional evidence. Verify its signal and the control's interpretation in the defined test state. A resting code check may not expose the original low-speed dropout, while permanent simulation removes the actual wheel information rather than demonstrates restored measurement.
- 27. C** — State of charge describes the estimated operating charge condition under the system's method. It is different from health or capacity assessment. A low indication does not establish electrical isolation, so high-voltage safety and battery-condition testing still require their own specified procedures and measured evidence.
- 28. D** — The spring's installed relationship and retainers are part of its required operating condition. Verify them with the applicable measurements and assembly procedure. Physical fit or appearance

cannot establish correct force and travel, while arbitrary extra compression changes geometry rather than qualifies a component under its specified setup.

29. B — The controlled feed restoration allows the node to communicate, linking absence to an identified supply path. Repair and verify that circuit before assigning a module. A constant feed does not establish every power condition the node needs, and network-wide replacement would ignore the localized event demonstrated at its connector.

30. B — Electrical suitability does not qualify a mechanically exposed installation. Correct the routing and required protection, then perform applicable checks under the high-voltage procedure. A rated cable can still be damaged through motion, and software or improvised covering cannot automatically establish the installed condition defined by the approved detail.

31. A — Add the two stated masses: $140 + 85 = 225$ g total. This documents the given operation rather than defining an acceptable balance correction for every wheel. The actual procedure governs plane, placement, weight type and final residual result; the total alone cannot qualify the rotating assembly's balance.

32. C — The cleaning method must control the assessed dust exposure rather than simply move material into the air. Follow the approved process for the friction material and workplace. Dry brushing, blowing or grinding without those controls can spread the hazard instead of establishing suitable conditions for component service.

33. D — Divide the captured record count by duration: $4,500 \div 15 = 300$ records per second. The rate follows the supplied recording definition. It is not automatically physical bus speed or useful message throughput, which depend on what each record represents and how the particular diagnostic tool captures the network.

34. A — The restored fluid condition must be paired with the actual unit's setup and performance checks. Appearance and warning status alone cannot establish pressure, shifting or level requirements. Use the applicable architecture-specific information rather than interpreting this repaired transmission against a chart that describes a different system.

35. B — The wet damaged interface and unverified state require the applicable controlled assessment before handling. Non-ready indication or a low-voltage reading cannot establish the condition of that high-voltage work point. Obtain suitable qualified equipment and procedures rather than attempting an improvised drying or touch check of an uncertain circuit.

36. D — Multiply seconds by the supplied factor: $0.45 \times 1,000 = 450$ ms. This is the same physical interval in another unit. It does not itself establish whether the event is acceptable, because interpretation needs the applicable signal or operating timing requirement as well as the measured duration.

37. C — Divide millivolts by one thousand: $150 \div 1,000 = 0.15$ V. This converts the same measured loss to another unit. Whether it is acceptable depends on the actual path, load and specified criterion, so unit conversion does not itself identify a defective connection or supply component.

- 38. D** — Add atmospheric pressure to the given gauge pressure: $250 + 95 = 345$ kPa absolute. Gauge and absolute values use different references, so comparing them directly can create a false discrepancy. The calculation does not establish the correct operating pressure for another diesel system or test state.
- 39. A** — Rotating-wheel tests need a specifically suitable arrangement and safeguards, not merely equipment that can support static weight. Follow the permitted procedure and keep personnel clear of movement. Engine operation or tire inflation does not establish that the support system is approved for the planned rotating-load condition.
- 40. B** — The hose needs suitable ends, material and geometry for its pressure and full movement conditions. Bore alone does not establish that duty. A tighter bend or omitted support can impair the installed path, and sealant cannot supply the mechanical restraint and clearance assigned by the approved assembly arrangement.
- 41. C** — Divide volume by seconds and multiply by sixty: $2.4 \div 20 \times 60 = 7.2$ L/min. This is the supplied test's rate, not a generic pump specification. Actual acceptance requires the engine's defined temperature, speed, test path and delivery criterion before the computed result can support a repair decision.
- 42. B** — Divide the localized voltage drop by the current: $0.18 \div 5 = 0.036$ ohm. The result applies at that measured condition. Its acceptance requires the relevant circuit's specified criterion; the calculation does not define a universal allowable resistance or replace localization of the actual connection producing the loss.
- 43. D** — The measured event localizes interruption to the moving feed while the heating element meets its prescribed test. Restore and protect the harness, then verify through the required door travel. Increasing protection cannot bridge a broken path, and a cold mirror alone does not justify replacing an independently satisfactory element.
- 44. A** — The replacement needs to describe actual cabin conditions and produce the specified strategy response. Verify both under the procedure. One number or cleared history does not establish accuracy across relevant states, and switching permanently to manual operation does not demonstrate restoration of the automatic function affected by the original sensing fault.
- 45. C** — Balance qualifies the assembly within its test scope, not the completed vehicle mounting interfaces. Restore the required contact condition and follow installation checks. Added mass or arbitrary torque cannot remove contamination or establish the specified joint geometry and fastening relationship when the shaft is connected to the vehicle.
- 46. D** — The controlled test distinguishes real temperature from an electrical interruption at the connector. Diagnose and restore that path under the procedure. A changed indicated value alone is not proof of a physical thermal event, especially when independent measurement remains consistent and contact failure is captured at the same time.
- 47. B** — Tire suitability includes the documented application and actual condition, not merely wheel fit or a brand impression. Use the relevant requirements to assess the installed assembly. A broad speed

label cannot replace the complete dimensional, load and service criteria assigned to the vehicle and tire configuration being inspected.

48. C — The repair needs the complete transmission procedure and operating conditions that exposed the fault. Engine-off selection is a limited observation and may not assess speed matching. Use the specified fluid and functional checks rather than operation intended to force an unverified assembly into a satisfactory condition.

49. A — The independent spring measurement identifies a mechanical valve-control condition despite acceptable cam lift and checked fuel delivery. Assess it using the engine procedure. Power loss alone would not identify a spring, but the failed force criterion provides evidence beyond the symptom and should not be masked through unrelated electrical adjustments.

50. D — The controlled separation and component result identify the affected load rather than merely an unexplained trip. Resolve it and verify the circuit under the applicable requirements. Repeated fuse replacement or enlarged protection does not repair the fault and can compromise the designed response to excessive current in that path.

51. A — The input provides the latch state assigned by the vehicle architecture. It does not automatically establish mechanical hinge strength or unrelated fluid condition. Actual reporting and physical retention should be assessed separately where required, because a signal state is not universal proof that every part of the door assembly meets its specification.

52. B — The hose must remain suitable through its full assigned movement, not just a resting position. Verify routing and retention using the actual procedure. Tight fittings do not establish freedom from rubbing or stretch, and excessive length can introduce another interference rather than automatically satisfy the complete installation envelope.

53. C — The procedure's reference state makes the measurement comparable with its criterion. Establish it before judging CVT pressure or behaviour. Fluid identification matters but does not define actual temperature, and neither a label nor an arbitrary state can replace the prescribed setup needed for meaningful interpretation of the test result.

54. C — Backlash is a mechanical clearance at the identified gear interface and must be measured with the prescribed setup. It is distinct from fluid properties and electrical signal timing. Correct interpretation also needs the actual component criterion; a general term alone does not establish the acceptable value for every transmission or axle arrangement.

55. B — The movement demonstrates an unstable force path before full loading. Correct the fixture and workpiece support under the tool procedure before continuing. More force or faster travel can increase the consequence of release, while hand restraint cannot establish a rated stable setup against the press load.

56. A — The signal reports a defined state but does not replace the latch's mechanical acceptance. Resolve the failed retention under the body repair procedure. Different functions can produce different

results, so a favourable display must not be treated as proof that the structural retaining mechanism passes the test specifically assigned to it.

57. D — The supply function now passes while the repaired system still loses oil through a separate pressure or containment interface. Correct that joint under the applicable procedure and repeat required checks. A favourable delivery result cannot qualify ongoing leakage, and altering inventory or a different seal does not address the identified pan boundary.

58. A — Straightness and balance are different conditions. The failed balance test and missing weight support assessing that rotating assembly under its repair instructions. Software or another bearing cannot automatically correct the identified mass-distribution issue, and an acceptable runout result does not negate an independently failed balance requirement.

59. B — The supply open explains absent current despite a satisfactory pump test. Restore that circuit and verify cooling before condemning charging hardware. Reduced charge can be a control response to unmet thermal conditions, so its symptom alone cannot establish a failed charger or justify removing the required monitoring function.

60. C — The corrected mechanical relationship must produce the required blade position and range on the vehicle. Verify clearance and function under the procedure. Unloaded motor rotation was already possible during the fault, and an indication change cannot relocate an incorrectly attached physical arm or prove its operating envelope is now acceptable.

61. D — The test point determines which segment and electrical paths the measurement represents. Confirm it against the applicable diagram and procedure. A gateway can separate or route networks, so an observation at one location cannot automatically describe all others or establish accuracy of physical sensor information communicated across them.

62. B — The procedure's mechanical check helps determine whether operation is obstructed before a command applies force. Use the specified method and safe positioning. A valid control signal does not establish free movement, and forcing or hand exposure can turn an unresolved bind into damage or a pinch hazard during the test.

63. D — Housing fit establishes one dimension, not hydraulic or structural capability. Select the proper component for the complete requirement. Another restrictive element or an altered command cannot automatically qualify insufficient rated performance, and the actual fuel system must retain the capability assigned by the approved vehicle application.

64. A — The correction must restore the approved inventory and each node's required functions, not merely make one response visible. Verify identities and related operation through the applicable checks. Removing another required controller would avoid the conflict by deleting functionality rather than demonstrate a completed configured-network repair.

65. C — Subtract recorded addition from the stated total: $2.75 - 2.30 = 0.45$ L. This quantity follows the scenario's accounting basis. Apply the actual fluid type and final level procedure because a calculated

remaining amount does not itself establish the correct inventory under every temperature or retained-fluid condition.

66. D — The repair must restore the intended measurement path and confirm it follows the actual operating condition. Clear passages and correct routing matter alongside signal plausibility. Appearance and code clearing do not establish that the hoses transmit the specified pressures, while an estimate would conceal rather than validate the installed sensor response.

67. A — Divide input speed by the given reduction: $3,600 \div 2.4 = 1,500$ rpm. The model assumes steady operation without added slip. Multiplying would calculate a speed increase instead of the reduction described, while subtracting the ratio from rpm mixes dimensionless and speed quantities.

68. C — Subtract outlet from ambient: $30 - 11 = 19^{\circ}\text{C}$. This reports the supplied comparison and is not a universal cooling-performance limit. Actual acceptance needs the vehicle's defined mode, airflow and environmental conditions, so the difference alone cannot distinguish charge, control or heat-transfer causes in another system.

69. B — Convert revolutions per minute to revolutions per second: $2,100 \div 60 = 35$ Hz for the stated one-event model. A higher vibration order would use another event multiplier. The calculation provides a reference frequency but does not alone identify a faulty joint, balance condition or support without corresponding evidence.

70. B — The adapter forms part of the test pressure boundary and must match the actual connection. More force or sealant does not qualify an incompatible geometry. Use the approved setup so the measurement is valid and the port is not damaged by an improvised attachment during diagnostic work.

71. A — The controlled separation and independent insulation result distinguish the harness from the connected components. Follow the high-voltage procedure for its disposition before reconnection. Removing the warning does not repair material condition, and battery indication cannot qualify a pressure or electrical boundary that independently fails its assigned test.

72. D — Multiply power, duration and stated efficiency: $12 \times 1.5 \times 0.88 = 15.84$ kWh. The ideal input is 18 kWh, but the supplied model accounts for losses. Real charging varies with control and conditions, so the fixed-value example does not independently measure vehicle battery capacity or actual session efficiency.

73. C — The circuit repair must restore actual cooling and the appropriate control response, not merely a perceived running condition. Verify the specified electrical and fluid functions and related charging behaviour. A sound or cleared warning cannot establish flow, while simulation removes evidence of the real pump function the protection is intended to monitor.

74. B — The component can hold one reading while unloaded and still fail to maintain geometry under the specified load. Resolve the identified mounting condition before final alignment acceptance. Correct ride height reduces one alternative but does not establish that every attachment preserves its intended position through actual operating forces.

75. D — The programming process needs suitable supply conditions for its duration and vehicle loads. Initial voltage alone does not prove sustained stability. Approved equipment and setup are therefore required, but they do not remove separate communication checks or physically repair a damaged connection through which the update must be delivered.

76. A — The independent measurement shows real pressure changes while the identified signal path is interrupted. Diagnose that path before using its display as a physical pressure conclusion. Adding charge or replacing the compressor would not restore the open sensing circuit and could introduce another condition without addressing the demonstrated measurement fault.

77. C — Subtract the measured value from the specified lower bound: $50 - 46 = 4$ percentage points. This is a direct difference, not a relative percentage increase. The window is a problem-specific service instruction; actual charging and readiness must follow the vehicle's full procedure rather than this arithmetic alone.

78. D — The replacement must meet the actual duty and restore operation without abnormal demand. Verify current and commanded response under the procedure. A fuse that remains intact while the load is idle does not demonstrate operating condition, and increasing its rating is not required evidence that the repaired actuator performs within specification.

79. B — A plausible value at one state does not prove the sensor responds correctly to the condition required by its test. Continue diagnosis of the installed part, circuit and setup. A forced reading or altered acceptance criterion cannot replace evidence that the measurement path tracks the actual operating change in the intended manner.

80. A — The strategy varies the active portion of an output interval according to its design. It does not physically resize wires or alter fuse material. Interpreting the output requires the correct timing and measurement method, because a meter's averaged indication is not automatically the same as the signal's instantaneous high-state voltage.

81. C — The scope trace matches the specified pulsed operation, while the comparison value was intended for a continuously energized circuit. An averaging meter can show a lower number because it combines active and inactive intervals rather than reporting only the high state. Use the approved measurement and reference for this actual strategy. Normal output function and a matching waveform provide relevant evidence; condemning the lamp from an inappropriate steady-power expectation would confuse measurement interpretation with a demonstrated fault.

82. B — A static value does not demonstrate stable geometry during suspension movement. The loose attachment directly affects the operating relationship and requires assessment under the steering procedure. Correct and verify the complete connection before relying on another stationary measurement, rather than using unrelated component changes to conceal the moving fault.

83. A — The repaired linkage must transmit movement to the physical flap and support the intended controlled range. Verify the applicable response rather than an actuator that could move without driving the flap during the fault. A fitted clip or fixed position does not establish full restored air-path function.

- 84. C** — The gauge compares a designated gap with its known blade thickness under the prescribed setup. It does not assess chemical composition, stored electrical energy or software. Correct location, temperature and insertion technique matter because an apparent fit outside the required conditions may not represent the clearance the procedure defines.
- 85. D** — The installation timing and documented plug mismatch identify a component-application issue after other tests pass. Verify the correct part and inspect the affected path under the procedure. A firing symptom does not make every ignition part interchangeable, and changing fuel supply cannot qualify an unsuitable plug reach or application for the engine.
- 86. D** — The wiring mismatch prevents the intended input from reaching its receiving path, while controlled substitution supports the module's response. Restore the approved connection through the SRS process before other replacement decisions. A fixed signal would hide the fault and remove the actual occupant-dependent information assigned to that system.
- 87. A** — Add the two stated angle stages: $45 + 60 = 105$ degrees total added rotation. This is not a standalone fastening instruction; the initial stage, sequence, tool and hardware requirements remain part of the supplied procedure. Torque and angle are different quantities and should not be substituted for one another.
- 88. B** — Electrical current confirms one repaired path but does not prove the hydraulic mechanism produces its assigned result. Investigate the remaining failed response using the applicable circuit and pressure tests. Additional electrical work or changed protection cannot be assumed to correct an independently measured hydraulic function that still falls outside its requirement.
- 89. C** — Subtract the approved existing thickness from the supplied total: $48 - 32 = 16$ mm. The calculation does not authorize arbitrary spacer construction. Follow the actual mounting method, material and retention instructions so the completed accessory assembly meets its load and clearance requirements as well as this stated dimension.
- 90. D** — The documented configuration conflict affects network identity despite compatible hardware. Correct it through the applicable setup process and verify both required nodes. More voltage or new wiring cannot assign valid distinct identities, and deleting a required function is not equivalent to restoring the approved network configuration.
- 91. B** — The original event depended on a condition absent from the completed check. Reproduce it through the approved method and verify the repair's response. A static room-temperature pass is useful but limited evidence, and unrelated replacement or altered limits cannot demonstrate that the connection remains reliable when its earlier trigger returns.
- 92. C** — The localized test and direct damage support the joint as a fault candidate after common alternatives pass. Assess it under the driveline procedure. A shudder without those checks would not identify one component, and electrically unrelated changes cannot restore the mechanical sliding and torque-transfer surfaces shown to be damaged.

- 93. A** — A suitable part can still be installed incorrectly. Resolve preparation and assembly requirements, then repeat the actual movement check. Identity alone does not establish a load-bearing interface that meets its criterion, and changes intended to mask motion cannot substitute for the prescribed mechanical mounting condition.
- 94. D** — The repair must meet durability and installation requirements as well as provide a current signal. Complete the prescribed seal and protection, then verify. Present communication does not demonstrate resistance to later moisture exposure, and software or arbitrary length cannot supply the physical environmental barrier assigned to that splice system.
- 95. C** — The actuator demonstrates some ability to move, while a verified input discrepancy can affect the normal control decision. Diagnose that input and applicable conditions before condemning the actuator. Bypassing the strategy removes its operating logic and protections rather than establishes why the proper request is inhibited during the complaint.
- 96. B** — Sensor naming must correspond to the actual engine layout and circuit. Verify that relationship before testing or replacing a component. Proximity and similar connectors do not establish the correct location, while a generic description alone cannot resolve a build-specific arrangement with multiple sensing points and separate control roles.
- 97. A** — The solenoid can pass its defined component test while receiving no operating supply through an open connection. Restore that path and verify the command-current relationship. A no-current observation does not automatically prove an internal load failure when independent tests localize the interruption in the harness feeding it.
- 98. B** — Multiply voltage by current: $12 \times 6 = 72$ W under the stated condition. This is a simple instantaneous electrical-power relationship. A real pulsed or changing load may need suitable time-based measurement, so the number should not be applied outside the fixed values and model explicitly given by the problem.
- 99. D** — The tie rod is a mechanical part of the steering path for the particular layout. Its joint and adjustment requirements matter to that role. It does not carry brake fluid or electrical data, so geometry and retention checks cannot be replaced by tests directed at those different systems.
- 100. C** — The displayed selection reports a requested or indicated state, not proof of physical engagement. The failed position test localizes the missing motion despite suitable supplies. Diagnose the actuator and driven path under the applicable procedure instead of accepting the system from an indicator or replacing unrelated controllers without supporting evidence.
- 101. A** — Correct inventory does not establish suitability of the fluid's properties for this transmission. Resolve the incompatibility using the approved service process and evaluate operation afterward. Unverified additives cannot automatically make the wrong product equivalent, and a satisfactory level does not negate the documented application mismatch.
- 102. D** — The prescribed output test identifies an alternator-related waveform condition after external paths pass. Assess generating and rectifying components through the applicable process without

assuming one specific internal part from ripple alone. A battery change is not justified merely to absorb abnormal output when the independent evidence localizes its source.

103. A — The identified reversal changes what the pressure sensor receives and how the differential should be interpreted. Restore the specified route and verify readings before judging filter condition. Regeneration or altered voltage cannot reconnect the hoses or make the reversed installation equivalent to the approved measurement arrangement.

104. C — Subtract target from measurement: $37.2 - 36.5 = 0.7$ mm excess. The calculation does not specify the adjustment material or mechanism. Use the actual engine's component and installed-height instructions so the final geometry, travel and spring function meet all requirements rather than correcting one number through an unapproved method.

105. B — Routing correction does not restore a hose already damaged beyond its acceptance requirement. Apply the specified component disposition and verify the installed assembly. External wrapping and fluid level cannot establish the internal pressure-boundary and flow condition needed for a hose that still fails its material or geometry criterion.

106. D — The component's moisture-control function and cleanliness require suitable handling and the applicable service sequence. Follow protection and installation instructions rather than leaving the open unit exposed. Exterior appearance or dimensions cannot establish its internal condition when air and moisture have been allowed to enter before the circuit is restored.

107. B — The repaired circuit must report its real assigned states and support the required start logic. Verify normal and relevant inhibited conditions under the procedure. Forced starter movement does not establish the control path, while a fixed imitation defeats the input's intended condition-dependent function rather than demonstrates its restoration.

108. C — The pickup supplies oil to the pump through the arrangement defined by the engine design. Its condition matters to lubrication flow, but it is not the ignition, cooling-air or fuel-spray control component. Correct identification of the circuit role helps separate supply faults from pressure regulation and downstream bearing conditions.

109. A — Divide the active interval by total period and multiply by one hundred: $4 \div 16 \times 100 = 25\%$. Both intervals use milliseconds, so their units cancel. The fraction describes this waveform and does not independently establish fuel mass or ignition energy without the applicable actuator and operating characteristics.

110. C — The independent cabin condition and controlled substitution identify an inaccurate input affecting the requested temperature response. Diagnose that sensing path before condemning the heater or refrigerant system. Hot delivered air can be a normal physical response to an incorrect command, so the output symptom alone does not prove a failed heat exchanger.

111. B — The stated condition and stages form part of the intended assembly process. Follow them together rather than treating the final number as independent of setup. Another engine's sequence or a

skipped stage cannot establish that this joint received the loading relationship defined by its actual repair procedure.

112. D — The controlled geometry correction restores the observed signal, providing a link between the installation and communication fault. Follow the actual physical-layer repair requirements rather than assuming continuity alone qualifies any branch length. This evidence identifies a contribution at the repaired stub without making a universal claim about allowable lengths on other networks.

113. A — The balance result covers rotating mass distribution, while installation still needs proper mounting and required clearances. Complete the actual vehicle checks rather than relying on appearance or another application's torque. A balanced assembly can remain unsuitable if damaged or incorrectly attached to its wheel-end interface.

114. B — Total removal is $0.15 \times 2 = 0.30$ mm. Subtract it from the starting 26.0 mm for a final 25.7 mm. The problem explicitly supplies this permitted process; real machining also needs the actual rotor's refinishing and other acceptance requirements, which cannot be inferred from this arithmetic alone.

115. D — The verified misconnection means the control does not receive the intended level information even with correct fluid inventory. Restore the actual wiring and verify the assigned input. More fluid or sensor replacement alone cannot correct the connector routing identified by the diagram and inspection after the recent service.

116. C — The component performs the roles assigned by the particular refrigerant architecture, including storage and moisture control. It is not universally interchangeable with another layout's accumulator. Identify the actual system and service requirements rather than assuming similar vessel appearance makes different refrigerant-management components equivalent.

117. A — The symptom is localized and the prescribed inspection identifies a failed synchronizing condition after external checks pass. Assess that path under the transmission procedure. Grinding alone would not isolate the cause, but the combined evidence distinguishes the relevant internal engagement function from a general release or linkage fault.

118. A — Divide the given force by effective area: $400 \div 200 = 2$ N/mm². The simplified model excludes additional mechanical or hydraulic effects. This is a calculation from stated conditions, not a universal brake pressure or acceptance criterion for any particular master cylinder or operating test.

119. B — The replacement still needs correct installation and relevant operating verification. Package identity and memory clearing do not prove the installed path now functions under the condition that caused the complaint. Follow the specified plug preparation and checks rather than modifying dimensions to compensate for a previous application error.

120. C — The controlled repositioning links the differing trace to probe stability rather than automatically proving a vehicle timing fault. Secure and verify the setup before interpreting actual component behaviour. Repeated evidence needs a valid reference, and changing specifications cannot compensate for an instrument arrangement that moves during capture.

121. D — The actual installation differs from the sensing geometry required by the procedure. Correct and verify it before assigning controller replacement. Adequate supply and a satisfactory target do not establish a valid signal when the sensor's position is wrong, and hydraulic or protection changes cannot restore the mounting reference.

122. B — The motor's checks pass while the arm is mechanically indexed incorrectly. Restore the actual installation reference and verify sweep and park. A wrong blade position does not by itself prove failed motor control when the output relationship was changed during recent arm work and its driven component is misaligned.

123. A — The record preserves defined data associated with an event, helping relate a fault to its operating context. Coverage and trigger strategy vary. It is not a full universal history or a component-replacement verdict, so its information should guide relevant tests rather than substitute for verification of the suspected path.

124. D — The configuration action must produce the intended interpretation and resulting function in this installation. Verify both under the required conditions. A changed parameter record does not prove correct behaviour, and another vehicle's observation cannot demonstrate that this recipient now controls its actual assigned output appropriately.

125. C — The new internal joint still needs its intended enclosure and lubricant protection. Resolve the failed boot assembly under the procedure. A suitable replacement mechanism cannot qualify a damaged or displaced seal, and external grease or an open arrangement does not restore the specified barrier against contamination and lubricant loss.