

PRACTICE EXAM 5: 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 procedure specifies probing a connector without damaging its terminal tension. What should be used?
 - A. Any large probe that remains firmly wedged.
 - B. Repeated insertion until the probe contacts several terminals.
 - C. A pointed tool chosen only because it pierces easily.
 - D. The approved probe method for that connector and circuit.

2. A diesel loses power and its actual airflow falls below the stated test condition. Inspection exposes a collapsed intake duct ahead of the compressor, while fuel supply passes verification. What should be addressed?
 - A. Fuel-filter replacement despite adequate supply.
 - B. The demonstrated intake-flow restriction.
 - C. Injector replacement solely from reduced power.
 - D. Acceptance because the duct has no external leak.

3. A compressor replacement procedure requires assessing the system for contamination from the failed unit. What should be completed?

- A. Only final charge quantity, ignoring failed-compressor debris.
- B. Only the drive setup, ignoring refrigerant contamination.
- C. Only fitting the new compressor.
- D. The required contamination checks and preparation.

4. An electrical harness replacement must pass through a protected body opening. What should installation preserve?

- A. Only the connector pin count.
- B. Only the new part's delivery packaging.
- C. The required grommet, routing, and conductor protection.
- D. Only the harness's measured overall length.

5. A heater complaint includes low outlet air temperature. Its control door moves correctly, but coolant temperature at the heater inlet is below the stated test condition. What should be established first?

- A. The required coolant supply condition and its cause.
- B. Blower replacement solely from cool outlet air.
- C. Acceptance from the door-position result alone.
- D. Door replacement despite correct movement.

6. A clutch replacement procedure requires inspecting an oil-contaminated mating surface and addressing the leak source. What should repair include?

- A. Only cleaning the disc's package before installation.
- B. The complete contamination correction and prescribed component checks.
- C. Only adjustment of pedal free play without investigating oil.
- D. Only a new disc fitted against the contaminated surface.

7. An intake air leak is repaired by replacing a specified hose. What should installation preserve?

- A. Only the nearest sensor's identification label.
- B. Only the connector's ease of removal.
- C. Only the old hose's approximate overall length.
- D. The correct routing, connection security, and applicable material suitability.

8. A module's low-voltage supply meets its unloaded check, but drops outside specification when it wakes. Its network signal remains present and a loaded feed test locates a corroded splice. What is supported?

- A. A wake-up supply-path fault at the demonstrated splice.
- B. A software fault proven by unloaded supply alone.
- C. A normal module feed proven by the sleeping reading.
- D. A completely absent network signal despite measurement.

9. A fuel-system repair procedure requires replacement of disturbed sealing rings. What should be completed?

- A. Reuse of each ring if it remains round externally.
- B. Addition of exterior sealant instead of the new rings.
- C. The specified seal replacement and final integrity checks.
- D. A startup attempt as the only sealing verification.

10. An electrical diagnostic test records 12 V and 25 A at a stated load. What power is measured?

- A. 300 W
- B. 600 W
- C. 2.08 W
- D. 37 W

11. A suspension height complaint affects one corner. Its spring is fractured on inspection, while the position-sensor reading follows measured height correctly. What is indicated?

- A. A wheel-speed sensor fault proven by low height.
- B. A height sensor failure disproved by comparison.
- C. The damaged spring as a demonstrated mechanical fault.
- D. A normal spring proven by correct sensing.

12. After correcting a diesel charge-air leak, what should verification reproduce?

- A. Only the repaired hose's external appearance.
- B. The relevant load condition and required pressure behaviour.
- C. Only the turbocharger's identification plate.
- D. Only an idle start.

13. A sensor message is present at the source module and gateway input, but the gateway's configuration excludes that destination after a replacement. What should be addressed?

- A. Sensor replacement despite correct originating data.
- B. A sensor mechanical fault proven by gateway configuration.
- C. Replacement of every destination module.
- D. The specified routing configuration for that message.

14. A seat-buckle input connector is serviced under the applicable restraint procedure. What should reassembly follow?

- A. The method from an unrelated lamp connector.
- B. A cleared warning without testing the restored input.
- C. A generic deployment-circuit resistance check.
- D. The approved connection, routing, and required verification method.

15. An electronic steering-angle value is offset with the wheels at the verified straight-ahead position after alignment. Mechanical alignment meets specification, and the required zero procedure is incomplete. What remains necessary?

- A. The applicable steering-angle initialization and verification.
- B. Mechanical realignment solely from the sensor offset.
- C. Acceptance from mechanical alignment alone.
- D. Rack replacement solely from the incomplete zero procedure.

16. What does a differential pressure gauge measure?

- A. The total of both connection pressures automatically.
- B. The difference between its defined pressure connections.
- C. The larger connection pressure automatically as absolute pressure.
- D. The fluid's temperature without a separate sensing element.

17. An EV will not become ready. Its required low-voltage module supply collapses during startup, while the stated high-voltage status remains otherwise acceptable. A loaded test identifies a poor low-voltage connection. What should be addressed?

- A. Traction-battery replacement solely from nonreadiness.
- B. Drive-motor replacement solely from the supply collapse.
- C. The demonstrated low-voltage delivery fault.
- D. Acceptance because the supply is correct with the vehicle asleep.

18. A fuel-pressure sensor reports low pressure, but a verified independent gauge meets the stated requirement. Its reference supply is correct and its signal fails the specified comparison at the sensor. What should be diagnosed?

- A. The regulator solely from the signal disagreement.
- B. The sensor's signal function and local circuit.
- C. The gauge solely because it indicates acceptable pressure.
- D. The fuel pump solely from the reported value.

19. A refrigerant circuit's stated charge is 720 g. A defined procedure starts from an empty prepared circuit and delivers 510 g. What mass remains to reach the target?

- A. 720 g
- B. 1230 g
- C. 510 g
- D. 210 g

20. A fuse is replaced after its downstream short is found. What should repair include?

- A. Only repeated fuse replacement.
- B. Only movement of the harness without inspecting the defect.
- C. Correction of the short and verification with specified protection.
- D. Only replacement protection without removing the short.

21. After a steering repair, the wheel is centred but the recorded toe values remain outside the supplied requirement. What still needs correction?

- A. The actual alignment result.
- B. Acceptance from visual steering-wheel centre alone.
- C. Acceptance from the new steering component alone.
- D. Acceptance from a successful engine start alone.

22. A scan parameter names one sensor, but the circuit identifier in the applicable diagnostic procedure refers to another input. Both components are installed. What should be clarified before testing?

- A. Acceptance of the parameter label as every pin's identity.
- B. Replacement of whichever sensor is easier to reach.
- C. Use of one sensor's test specification for both inputs.
- D. The exact parameter-to-circuit relationship for the complaint.

23. A relay-controlled pump is intermittent. Its coil command remains correct, but output disappears as the relay is gently moved; its socket-terminal retention also fails inspection. What merits correction?

- A. The identified socket connection and output path.
- B. The command source as proven intermittent.
- C. The pump as proven failed from movement at the relay.
- D. The battery as proven discharged.

24. A cylinder-head fastener is identified as requiring replacement under the service procedure. What should be installed?

- A. The removed bolt if its exterior looks undamaged.
- B. An extra washer as a substitute for replacement.
- C. The specified acceptable replacement and tightening arrangement.
- D. A same-length bolt without verifying its material or design.

25. A network repair procedure specifies preserving the pair arrangement through the splice. What should assembly follow?

- A. Long exposed stubs retained as the preferred test points.
- B. The defined conductor, splice, and routing requirements.
- C. Any two conductors joined separately by convenience.
- D. Matching insulation colour as the only selection condition.

26. A cylinder bore is 86.03 mm and the specified piston measuring location reads 85.96 mm. What diametral clearance results?

- A. 0.07 mm
- B. 0.14 mm
- C. 0.035 mm
- D. 0.03 mm

27. A propeller-shaft joint replacement specifies retaining clips and a final movement check. What should be verified?

- A. Only the removed component's age.
- B. Only the replacement's manufacturer label.
- C. Only the joint's ability to fit inside the yoke.
- D. The complete retention and required joint motion.

28. A bearing replacement rotates smoothly before installation, but binds after the specified retention is applied. Inspection finds an incorrect spacer in the installed stack. What must be reconciled?

- A. Acceptance from the correct hub model alone.
- B. The spacer arrangement and resulting assembled bearing condition.
- C. Acceptance from new bearing status alone.
- D. Acceptance from the uninstalled rotation alone.

29. A repaired connector now passes continuity, but its routed harness rubs a moving seat frame at the original damage point. What remains deficient?

- A. Acceptance from a stationary scan response alone.
- B. Acceptance from an intact connector latch alone.
- C. The final mechanical protection and movement clearance.
- D. Acceptance from continuity alone.

30. An SRS diagnostic check identifies a nonpyrotechnic buckle input permanently open. The approved connector inspection finds that circuit disconnected after seat work. What should be assessed first?

- A. A crash sensor fault proven by the disconnected buckle input.
- B. Deployment-unit replacement solely from the warning.
- C. Acceptance because the seat motor operates.
- D. The buckle input connection and required restraint verification.

31. An engine repair procedure requires verifying bearing clearances before final assembly. What should be measured?

- A. Only the replacement bearing's package thickness.
- B. Only the original parts' purchase descriptions.
- C. The specified component relationships using the prescribed method.
- D. Only whether the crankshaft turns before fasteners are tightened.

32. A technician will remove a spring-loaded assembly using a specified restraint tool. What should precede release of its fasteners?

- A. Secure and verify the stored-energy restraint under the procedure.
- B. Only loosen every fastener equally before fitting the tool.
- C. Only identify the replacement assembly's part number.
- D. Only arrange the removed parts on the bench.

33. A bearing check identifies excessive play at one hub, and the applicable retention connection is found below its specified assembled condition. What should be established before final bearing disposition?

- A. Replacement based only on play without assessing retention.
- B. The correct retention and the resulting bearing condition.
- C. Acceptance because the wheel was previously quiet.
- D. Acceptance because the hub's label matches the vehicle.

34. A stated service calculation has 7 kW input and an explicitly assumed useful fraction of 0.90. What useful power results?

- A. 6.3 kW
- B. 7.78 kW
- C. 7.9 kW
- D. 0.9 kW

35. After actuator replacement, the HVAC door completes travel but moves opposite the required command because its installation indexing is wrong. What must be resolved?

- A. Acceptance from a cleared-code report alone.
- B. The actuator-to-door relationship and verified response.
- C. Acceptance from connector fit alone.
- D. Acceptance from full travel alone.

36. A stated network rate is 500000 bits/s. Using bit period=1/rate, what bit period in microseconds results?

- A. 500 microseconds
- B. 0.5 microseconds
- C. 2 microseconds
- D. 2000 microseconds

37. After replacing a wheel-speed sensor, what should service verify?

- A. Only connector voltage without observing the output.
- B. Only a powered sensor without a rotation-signal check.
- C. Only a stationary zero-speed display without wheel motion.
- D. Installed signal and affected system checks.

38. A clutch will not disengage. Pedal motion is present, but measured slave-cylinder travel is below the stated requirement and air is confirmed in its hydraulic circuit. What should be addressed?

- A. Gearbox replacement despite deficient actuator movement.
- B. Clutch-disc replacement solely from nonrelease.
- C. The hydraulic actuation condition and required travel.
- D. Acceptance because the pedal can be pushed down.

39. A window regulator replacement requires checking glass travel and anti-pinch initialization. What should be completed?

- A. Both the mechanical travel and specified initialization checks.
- B. Only closure of the connector latch.
- C. Only comparison with the former part's outside length.
- D. Only the motor's ability to turn.

40. A gearbox whine appears after lubricant service. The work record names fluid not approved for the installed unit, and the original fault was absent beforehand. What must be reconciled?

- A. Bearing replacement as proven necessary from timing alone.
- B. The lubricant's suitability and the required diagnostic disposition.
- C. Acceptance because the fill quantity was correct.
- D. Acceptance because the housing remains pressure-tight.

41. A gasoline engine's misfire moves from cylinder 1 to cylinder 4 when only their coils are exchanged. Compression and injector checks remain acceptable. What does the controlled exchange support?

- A. A fixed cylinder-1 mechanical fault.
- B. A shared fuel supply failure proven by the move.
- C. An injector fault that stayed at cylinder 1.
- D. A fault associated with the moved ignition coil.

42. A speed comparison shows expected output 1000 rpm and measured output 900 rpm. Using $\text{shortfall} = (\text{expected} - \text{measured}) / \text{expected}$, what percentage shortfall results?

- A. 90%
- B. 10%
- C. 100%
- D. 11.11%

43. A body-accessory motor draws 3 A at a stated 12 V test condition. What electrical power results?

- A. 4 W
- B. 72 W
- C. 15 W
- D. 36 W

44. A hoisted vehicle is stable before engine removal, but the approved hoist information shows that removing the assembly changes its required balance and support arrangement. What must be reconciled?

- A. Acceptance from the vehicle's parked wheel alignment.
- B. Acceptance from the engine crane's capacity alone.
- C. The changed load distribution before the removal operation.
- D. Acceptance from stability with the engine still installed.

45. Why must the vehicle's lifting-point information accompany selection of a workshop hoist?

- A. Hoist capacity and vehicle support locations address different requirements.
- B. Vehicle lifting-point information replaces the hoist's rated capacity.
- C. The vehicle's wheelbase alone establishes safe arm loading.
- D. An adequate hoist rating defines all vehicle pickup surfaces.

46. A diesel pressure-control complaint starts after a sensor harness repair. The connector now places its signal on the terminal identified as supply in the vehicle diagram. What must be corrected?

- A. The terminal arrangement and required signal verification.
- B. The fuel pump solely from the repair date.
- C. Acceptance because every terminal is mechanically retained.
- D. The pressure regulator solely from the displayed value.

47. What is the evaporator's principal thermal role during cabin cooling?

- A. Compress refrigerant to the high-pressure condition.
- B. Reject all refrigerant heat directly to outside air.
- C. Meter refrigerant across the expansion device.
- D. Absorb heat from the cabin air into the refrigerant.

48. A driveline clunk follows reversal of drive. Inspection shows excessive movement at a worn propeller-shaft joint, while the required differential-clearance check passes. What is best supported?

- A. Acceptance because the clunk occurs only during reversal.
- B. The demonstrated joint wear as a relevant clunk source.
- C. Differential overhaul despite its acceptable check.
- D. An engine-fuelling fault proven by joint movement.

49. After latch replacement, the mechanism opens correctly but the body-control input still reports closed because its connector is attached to the wrong switch. What remains to be corrected?

- A. Acceptance from the replacement's part identity alone.
- B. Acceptance from matching connector shells alone.
- C. The verified position-input connection.
- D. Acceptance from mechanical opening alone.

50. What does a reduction gear ratio greater than 1:1 describe when stated as input speed divided by output speed?

- A. Output rotation slower than input rotation.
- B. Identical speed at both shafts.
- C. Output rotation always faster than input rotation.
- D. Zero torque transfer through the gear set.

51. A transmission speed sensor indicates erratic output while a verified independent measurement is steady. Its waveform drops out when a damaged local connector is moved. What should be assessed?

- A. The final drive as proven mechanically slipping.
- B. The input shaft as proven stopped.
- C. The actual gearbox ratio as proven unstable.
- D. The output-speed sensing connection.

52. What is a door-position input used to provide to a vehicle body-control system?

- A. Direct measurement of battery internal capacity.
- B. Information about the sensed door state.
- C. A universal measurement of airbag deployment current.
- D. Direct control of every window motor's torque.

53. An accessory's position feedback disagrees with the observed mechanism. Its sensor arm is disconnected, while commands and motor travel remain correct. What is supported?

- A. A feedback linkage fault.
- B. A normal feedback value proven by a working motor.
- C. A missing command disproved by the input test.
- D. A motor failure disproved by correct movement.

54. A hybrid cooling-system repair replaces a pump with a model requiring specified commissioning. What should the technician complete?

- A. Only the old pump's successful historical test.
- B. Only a check that coolant is visible in the reservoir.
- C. The correct installation, circuit preparation, and functional commissioning.
- D. Only the new pump's connector fit.

55. An intermittent bus complaint occurs after body movement. Flexing a connector reproduces it, and the applicable terminal-retention check fails at one network pin. What should be corrected?

- A. The unrelated engine sensor solely from lost communication.
- B. The identified connector retention and signal continuity condition.
- C. A software version solely from body movement.
- D. The network rate solely from the intermittent symptom.

56. A brake-piston service procedure requires a particular retraction method for its design. What should be used?

- A. Extra hydraulic pressure as the default retraction method.
- B. Any force method that makes the piston move.
- C. The specified tool and complete retraction procedure.
- D. The method from an unrelated caliper.

57. A wheel is removed during brake service. What should final retention follow?

- A. Only the removed fasteners' apparent tightness.
- B. Only the wheel's centred appearance.
- C. Only an impact duration chosen by experience.
- D. The correct fasteners and specified tightening conditions.

58. What does a communication fault code establish directly?

- A. The named module must always be replaced.
- B. A monitored communication condition failed its defined check.
- C. Every module on the bus lacks supply power.
- D. The physical harness is necessarily undamaged.

59. A stated battery energy calculation begins with 90 kWh and uses 18 kWh. Ignoring other changes, what energy remains?

- A. 108 kWh
- B. 5 kWh
- C. 18 kWh
- D. 72 kWh

60. A motor does not run. Its ground path meets the test requirement, but its positive terminal receives no voltage while the supply connector shows an open conductor. What is indicated?

- A. An interrupted motor supply path.
- B. A normal circuit proven by correct ground.
- C. A ground fault disproved by the test.
- D. A motor failure proven without supply voltage.

61. A solvent is introduced into a parts-cleaning task that previously used another agent. What should the work assessment consider?

- A. Only the tool list from the earlier work package.
- B. Only the cleaning time achieved with the former agent.
- C. The actual product's exposure, handling, and ignition requirements.
- D. Only the size of the old storage container.

62. One cylinder has low compression, but wet and dry readings are similar. Leak-down sends air into the intake, and the exhaust route remains comparatively quiet. Which area is indicated?

- A. The exhaust valve as the demonstrated leakage route.
- B. Normal cylinder sealing proven by similar wet and dry readings.
- C. The piston rings as the demonstrated intake-air path.
- D. The cylinder's intake-valve sealing path.

63. An engine runs rich after air-intake work. Inspection finds the airflow input connector installed on another compatible-looking component, and the recorded air measurement no longer follows engine demand. What must be reconciled?

- A. Ignition-timing advance as the proven cause.
- B. The actual airflow sensing connection and control input.
- C. Fuel-pressure increase as the proven cause.
- D. Acceptance because the connector latches securely.

64. A throttle-component replacement requires an initialization procedure. What should final service include?

- A. The applicable initialization and actual response checks.
- B. Only copying another model's stored settings.
- C. Only clearing existing messages.
- D. Only checking that the throttle connector fits.

65. Why is lubricant selection part of a transmission repair requirement?

- A. A pressure-tight housing eliminates lubricant compatibility needs.
- B. Matching colour makes all lubricants equivalent.
- C. Fluid properties must suit that transmission's operating design.
- D. More fluid always compensates for the wrong specification.

66. A stated transmission reduction is 2.5:1 and final-drive reduction is 4:1. Assuming both stages multiply, what combined reduction results?

- A. 10:1
- B. 1.6:1
- C. 0.625:1
- D. 6.5:1

67. After a starter cable repair, the motor cranks but its loaded-drop result still exceeds the provided limit at the repaired terminal. What remains unresolved?

- A. Acceptance from new terminal material alone.
- B. The repaired connection's actual current-delivery performance.
- C. Acceptance from cranking alone.
- D. Acceptance from the conductor's nominal rating alone.

68. An alignment adjustment changes a reading from plus 0.30 degree to plus 0.10 degree. What reduction is measured?

- A. 0.10 degree.
- B. 0.15 degree.
- C. 0.40 degree.
- D. 0.20 degree.

69. A battery-warning complaint is accompanied by correct alternator output at its stud and a loose output terminal that heats and loses voltage under load. What should be addressed?

- A. Battery replacement solely from terminal heating.
- B. Alternator replacement solely from the warning.
- C. The output connection's demonstrated resistance fault.
- D. A sensor recalibration as proof of connection integrity.

70. A network's fault remains after replacing the suspected module. Independent testing shows the same harness short remains at its connector. What is unresolved?

- A. The demonstrated physical circuit defect.
- B. Acceptance because a new module is installed.
- C. A normal connector proven by the replacement date.
- D. A requirement to replace every other module.

71. What does an EV's low-voltage system commonly supply to its control equipment?

- A. Proof that the traction battery is fully discharged.
- B. Power for the applicable control and accessory circuits.
- C. Mechanical drive directly to every wheel.
- D. A universal measurement of high-voltage insulation.

72. A charging-cable repair replaces a damaged connection. What should its final check reproduce?

- A. Only current delivery at a much lighter load.
- B. Only an unloaded visual inspection.
- C. The relevant loaded delivery condition and specified voltage-drop test.
- D. Only the alternator's idle sound.

73. The stated HVAC test records 32 degrees C entering air and 15 degrees C leaving air. What temperature decrease results?

- A. 15 degrees C
- B. 47 degrees C
- C. 8.5 degrees C
- D. 17 degrees C

74. One wheel-speed value repeatedly drops to zero while the wheel keeps turning. The waveform at that wheel has missing pulses at a damaged target location, and wiring checks pass. What is supported?

- A. A stopped wheel proven by the reported zero.
- B. A defect in the inspected wheel-speed target.
- C. A transmission ratio fault proven by missing target pulses.
- D. An open supply disproved by the wiring checks.

75. A rear wiper does not respond to its cabin switch. Its motor passes the approved test, and the switch command is absent at a connector with a confirmed open input wire. What is indicated?

- A. A seized wiper mechanism proven by absent command.
- B. A motor fault proven despite its test.
- C. A normal input proven by the cabin switch's movement.
- D. A command-path wiring fault.

76. A hydraulic steering system makes noise under load. Its supply reservoir is below the specified test level and the leak source is visible, while the belt drive passes inspection. What should be addressed first?

- A. The confirmed fluid loss and required supply condition.
- B. Belt replacement despite its acceptable check.
- C. Acceptance because steering can still be turned.
- D. Rack replacement without correcting the supply condition.

77. After a clutch hydraulic repair, measured release travel meets the requirement, but leakage remains at the new cylinder connection. What still prevents acceptance?

- A. Acceptance because the cylinder is new.
- B. Acceptance because release travel is sufficient.
- C. The demonstrated pressure-boundary sealing defect.
- D. Acceptance because the pedal returns normally.

78. A diesel high-pressure component replacement has specified single-use connections. What should the technician follow?

- A. Reuse of the old lines based only on appearance.
- B. An assumption that all threaded lines are interchangeable.
- C. Rework of sealing faces by an unapproved hand method.
- D. The component-specific connection replacement and assembly requirements.

79. What does a manufacturer's specified minimum brake-disc thickness govern?

- A. The maximum permitted brake-disc runout.
- B. The permitted thickness variation around the disc.
- C. Acceptance of the disc under its defined service criteria.
- D. A universal legal limit for every vehicle disc.

80. A vibration begins after tyre installation. The balancing machine finds a large imbalance, while wheel seating and the required runout check are acceptable. What should be addressed?

- A. Acceptance because the tyre is newly installed.
- B. The measured imbalance of the installed wheel assembly.
- C. Transmission replacement solely from vibration.
- D. Hub replacement despite acceptable runout.

81. What is an ABS hydraulic modulator's relevant operating role?

- A. Alter brake hydraulic pressure under control command.
- B. Measure steering angle directly.
- C. Generate the wheel-speed input signal.
- D. Measure the brake-pedal input directly.

82. A diesel's rail-pressure command and sensor reading agree with the supplied operating requirement, but one cylinder contributes little torque and its compression fails the stated limit. What should diagnosis prioritize?

- A. High-pressure pump replacement despite acceptable rail pressure.
- B. Glow-plug replacement as proof of mechanical recovery.
- C. The deficient cylinder's mechanical condition.
- D. Rail sensor replacement despite the comparison.

83. A drive axle has normal joint rotation, but its support bracket is loose and moves when torque direction changes. Other checked mounts comply. What should be corrected?

- A. The demonstrated support attachment fault.
- B. Acceptance because the axle rotates by hand.
- C. The normal joint solely because it is nearby.
- D. Every compliant mount solely because a clunk exists.

84. A sleep-current complaint remains after waiting the stated interval. One module repeatedly wakes when a damaged door input fluctuates, and stabilizing that input restores the required sleep condition. What should be diagnosed?

- A. Alternator replacement as proven necessary.
- B. Battery replacement as proven necessary.
- C. Acceptance because every module eventually sleeps once.
- D. The demonstrated door-input fault and wake-up behaviour.

85. An indicator moves from minus 0.04 mm to plus 0.05 mm in a prescribed hub sweep. What total indicated variation results?

- A. 0.01 mm
- B. 0.09 mm
- C. 0.045 mm
- D. 0.05 mm

86. A vehicle pulls during braking. One front caliper's sliding mechanism binds on inspection, and the opposite caliper meets its movement checks. What finding merits repair?

- A. Acceptance because both wheels turn with the pedal released.
- B. Tyre balancing as the proven cause of the bind.
- C. The demonstrated caliper sliding fault.
- D. Steering software as the proven cause of the bind.

87. A stated brake calculation uses pressure 5 N/mm² on effective piston area 1000 mm². What ideal piston force results?

- A. 200 N
- B. 5000 N
- C. 10000 N
- D. 1000 N

88. An HVAC air-distribution command changes on the scan tool, but one door's feedback stays fixed. Inspection confirms that its actuator shaft turns without moving the broken coupling. What is supported?

- A. An unchanged command disproved by the scan data.
- B. A refrigerant leak proven by the broken coupling.
- C. A blower electrical fault proven by door feedback.
- D. A mechanical door-drive connection fault.

89. What does an oxygen-sensing input contribute to gasoline fuel control when the system uses it?

- A. Information about the exhaust's oxygen-related mixture condition.
- B. A direct count of fuel molecules remaining in the tank.
- C. A direct measurement of cylinder bearing clearance.
- D. A universal ignition-coil test independent of engine state.

90. Two pressure readings disagree. One gauge shows the correct reference pressure on a verified source; the other remains offset by the same amount both disconnected and on that source. What should be addressed?

- A. The vehicle's regulator as proven faulty by instrument disagreement.
- B. The verified source as defective despite the comparison.
- C. The first instrument solely because it differs from the second.
- D. The second instrument's reference or calibration condition.

91. Cooling is weak only with the vehicle stationary. The prescribed condenser-airflow check finds the commanded fan inoperative due to an open motor feed, while road airflow restores cooling. What should be corrected?

- A. The demonstrated condenser-fan supply fault.
- B. Acceptance because cooling returns while driving.
- C. Refrigerant addition solely from weak stationary cooling.
- D. Evaporator replacement solely from road improvement.

92. What does a vehicle-specific high-voltage disablement procedure define?

- A. Automatic discharge of every cell inside the pack.
- B. The actual isolation boundary and required verification steps.
- C. Permission to omit measurement-equipment verification.
- D. A universal method interchangeable across every EV.

93. For a stated assembly, adding shim thickness reduces end play by the same amount. Measured play is 0.32 mm and target is 0.20 mm. What additional shim is calculated?

- A. 0.20 mm
- B. 0.32 mm
- C. 0.12 mm
- D. 0.52 mm

94. After valvetrain assembly, the crankshaft reaches the required reference position, but measured clearance at one valve is outside its specified range while peers comply. What remains unresolved?

- A. Acceptance because neighbouring valves meet their values.
- B. Acceptance because the components are recently replaced.
- C. Acceptance of all valves from the crankshaft position alone.
- D. That valve's actual adjustment or assembled condition.

95. A qualified EV repair requires restoring an interlock connection after the specified component installation. What should follow?

- A. Only clearing every stored status without testing.
- B. The complete interlock and affected system verification procedure.
- C. Only checking that one cabin accessory operates.
- D. Only checking that the outer cover fits.

96. An EV charges normally at one compatible station but stops at another whose equipment log records a supply interruption at the same time. What should diagnosis distinguish?

- A. The location's demonstrated supply event from a universal vehicle fault.
- B. Onboard-charger failure proven by any stopped session.
- C. Battery failure proven despite normal charging elsewhere.
- D. A normal original station proven solely by connector fit.

97. After a fuel-line repair, a pressure test reveals leakage only at the newly assembled connection. Its fitting specification is correct, but inspection shows the seal rolled out of its seat. What is indicated?

- A. A fuel pump fault proven by external leakage.
- B. Acceptance because the replacement fitting is specified.
- C. An assembly sealing fault at the demonstrated connection.
- D. A sensor fault proven by fitting identity.

98. An HVAC hose connection is repaired with the specified sealing components. What should follow?

- A. Only observing a powered control display.
- B. Only checking that the fitting threads engage.
- C. Only matching the former hose's outside length.
- D. The prescribed integrity, preparation, and performance verification.

99. The network works until a repaired branch is connected. Inspection finds its two data wires exchanged relative to the applicable connector view. What should be reconciled?

- A. A scan-tool fault proven by branch connection.
- B. The branch's verified conductor-to-terminal arrangement.
- C. Replacement of every original module.
- D. A normal branch proven by secure terminals.

100. A brake-response analysis uses stated speed 20 m/s and response interval 0.6 s with no slowing in that interval. What distance is travelled?

- A. 0.03 m
- B. 20 m
- C. 12 m
- D. 33.33 m

101. A drive-axle seal is replaced after leakage. What should the installed assembly preserve?

- A. The specified seal position and acceptable mating surface condition.
- B. Only the new seal's external diameter.
- C. Only the replacement's identity without seal positioning.
- D. Only the axle's original shipping dimensions.

102. Which alignment term describes the steering axis's fore-aft inclination in side view?

- A. Caster angle.
- B. Wheel toe.
- C. Thrust angle.
- D. Wheel camber.

103. A module installation requires identification coding from the actual vehicle. What should be entered?

- A. Only the scan tool's default equipment list.
- B. A code copied from a similar-looking vehicle.
- C. The verified applicable vehicle and component information.
- D. Only the removed module's exterior dimensions.

104. A connector repair requires a terminal-locking insert that was removed during disassembly. What should be restored?

- A. Only the connector's outer latch.
- B. The complete specified terminal-retention assembly.
- C. Only the wire identification tag.
- D. Only a continuity reading.

105. What does a cylinder leak-down test primarily assess under its specified setup?

- A. The engine's running ignition advance at every speed.
- B. The alternator's maximum electrical output.
- C. The fuel injector's delivered volume per minute.
- D. Leakage from the pressurized cylinder through relevant sealing paths.

106. An accessory completes one prescribed test cycle in 8 seconds. How long do four identical consecutive cycles take with no pauses?

- A. 32 seconds.
- B. 16 seconds.
- C. 0.5 second.
- D. 8 seconds.

107. A stated resistor has 1.2 V across it while 0.3 A flows. What resistance results?

- A. 1.5 ohms
- B. 4 ohms
- C. 0.36 ohms
- D. 0.25 ohms

108. A gasoline pressure test reads 45 psi. Using the supplied conversion 1 psi=6.9 kPa, what reading in kPa results?

- A. 45 kPa
- B. 621 kPa
- C. 6.52 kPa
- D. 310.5 kPa

109. A disc's stated service minimum is 24.0 mm and its measured thickness is 24.7 mm. What difference above that minimum results?

- A. 0.35 mm
- B. 48.7 mm
- C. 0.7 mm
- D. 1.4 mm

110. A hybrid's cooling warning appears after service. The required coolant pump receives the correct command but its disconnected feed prevents operation; the temperature rises under the specified test. What is supported?

- A. A normal cooling circuit proven by the command.
- B. A temperature-sensor fault proven despite observed heating.
- C. A coolant-pump supply interruption affecting the tested thermal function.
- D. Battery-cell replacement solely from the warning.

111. After restoring a network branch, what should final checks verify?

- A. Affected communication, functions, and the original failure condition.
- B. Only one scan response from an unrelated module.
- C. Only successful storage of a cleared-code report.
- D. Only the branch's unloaded appearance.

112. A supplied engine criterion permits at most 20 kPa cylinder spread. The highest reading is 190 kPa and lowest 155 kPa. What spread supports further investigation?

- A. 20 kPa; it exceeds the stated criterion.
- B. 35 kPa; it exceeds the stated criterion.
- C. 345 kPa; it exceeds the stated criterion.
- D. 15 kPa; it exceeds the stated criterion.

113. A brake lamp stays on. The control input remains active with the pedal released, and the verified switch adjustment does not match the specified released position. What should be corrected?

- A. The lamp bulb as proven shorted.
- B. The rear-lamp ground as proven missing.
- C. The supply fuse as proven open.
- D. The switch's actual operating relationship and input state.

114. A manual-shift complaint occurs only when hot. What should the diagnostic comparison preserve?

- A. The relevant temperature and conditions that reproduce the fault.
- B. Only the customer's preferred replacement assembly.
- C. Only the gearbox's part-label location.
- D. Only the cold movement of the gear lever.

115. A service measurement requires the depth of a piston recess from a defined surface. What tool setup is suitable?

- A. A ruler positioned from an unrelated raised casting feature.
- B. A pressure gauge attached to the nearest opening.
- C. A depth-measuring arrangement referencing that specified surface.
- D. An outside calliper measurement used directly as recess depth.

116. Brake pressure releases normally, but a wheel still drags. Its parking-brake linkage remains applied after the cabin control returns, and the service brake caliper passes inspection. What should be investigated?

- A. The verified service caliper as the proven fault.
- B. The parking-brake release linkage.
- C. The hydraulic master cylinder despite released pressure.
- D. The cabin control's return as proof of complete release.

117. An automatic transmission's fluid-level diagnostic method specifies engine state and temperature. What should be established before reading the level?

- A. Only whether the dipstick is clean.
- B. Only the last recorded fill quantity.
- C. Only the temperature of the workshop floor.
- D. The complete specified check conditions.

118. Why can an unloaded continuity check miss a resistive automotive connection that fails under demand?

- A. Continuity always applies the full circuit current.
- B. Its small test current differs from the circuit's operating load.
- C. A vehicle circuit cannot change with current demand.
- D. A continuity display directly measures every loaded voltage drop.

119. A module is absent from scans, but a verified supply fault is restored and communication returns without replacing it. What did that result demonstrate?

- A. Its earlier noncommunication was associated with the missing supply.
- B. The module requires replacement despite restored operation.
- C. The gateway requires replacement despite the localized correction.
- D. The whole bus was permanently open.

120. An overheating complaint occurs with hot coolant at the engine outlet. The cooling fan passes an independent operating test, but its commanded relay feed lacks power through an open fuse connection. What should be corrected first?

- A. The cylinder head solely because the engine overheats.
- B. The fan motor despite its successful operating test.
- C. The thermostat solely because coolant is hot.
- D. The demonstrated fan supply-path interruption.

121. After a transmission module replacement, an adaptation procedure is required for that vehicle. What should be completed?

- A. Only a cleared-code report.
- B. Only a check that the selector lights illuminate.
- C. The applicable setup and verification for the installed assembly.
- D. A procedure copied from another gearbox by convenience.

122. Two front toe readings are plus 0.12 degree and plus 0.08 degree on the stated common sign convention. What total toe results?

- A. Plus 0.20 degree.
- B. Plus 0.04 degree.
- C. Plus 0.40 degree.
- D. Plus 0.10 degree.

123. A stated ideal 10 V accessory test uses a 5-ohm load. What current results?

- A. 5 A
- B. 2 A
- C. 0.5 A
- D. 50 A

124. A body lock functions from the local control but fails remote commands. The remote receiver has no required supply and its feed fuse connection is open. What should be addressed?

- A. The door's hinges as the proven cause.
- B. Every local switch as proven faulty.
- C. The remote receiver's demonstrated supply fault.
- D. The working lock motor as proven defective.

125. A suspension joint replacement specifies supporting the assembly at a defined position before final tightening. What should the technician do?

- A. Use the wheel's hanging position by default.
- B. Copy another model's installed height.
- C. Tighten at any position because the parts fit.
- D. Establish that position and complete the stated assembly method.

Practice Exam 5: Answer Key and Explanations

1. **D** — The probe must preserve the connector's intended mechanical contact while allowing the required measurement. Follow the approved method for the actual design. A wedged or intrusive probe can alter terminal condition and create a new fault even if it obtains a reading temporarily.
2. **B** — The collapsed duct restricts the air path even though it may remain externally sealed. Correct and verify that restriction before pursuing fuel parts that passed their checks. Power loss alone is broad, but the actual airflow result and physical obstruction provide a focused explanation.
3. **D** — The failed component can affect the rest of the circuit, so follow its required contamination and preparation procedure before installing and accepting the replacement. External belt inspection and caps establish other conditions. A new compressor alone cannot remove debris or correct incompatible internal material.
4. **C** — The body opening can damage wires unless the prescribed protective interface and route are restored. Correct pin count and total length do not establish protection at that contact location. Verify the completed arrangement through its required movement and exposure conditions.
5. **A** — The thermal supply does not meet the condition needed by the heater test, even though the door operates. Establish the coolant temperature and relevant engine-cooling diagnosis before condemning air-control parts. Correct positioning cannot create heat that is not available at the supplied condition.
6. **B** — A new friction component does not remove the fluid source or restore every affected mating surface. Follow the specified cleaning, inspection, and leak correction. Pedal adjustment cannot demonstrate suitability of oil-contaminated friction interfaces that remain exposed to the same source after reassembly.
7. **D** — The hose must restore the intended air path without new leakage or unsuitable exposure. Verify its routing and connections as well as the correct service material. Approximate length alone cannot establish a complete functional equivalent to the specified installed hose.
8. **A** — The fault appears as current demand changes, and the loaded test identifies a resistive supply location. Correct and verify it before assuming network or software failure. An unloaded voltage can remain acceptable even when the path cannot support the module's operating current.
9. **C** — Disturbed seals must be handled according to the applicable repair requirements. Install the specified replacements and verify the assembled boundary. External shape and one startup do not establish a correct seal condition or authorize replacing required components with added sealing compound.
10. **A** — Multiply the supplied voltage by current to obtain 12 times 25, or 300 W. The calculation describes the test point under the stated load. It does not, by itself, establish circuit efficiency or a component's acceptable power without the applicable service criterion.

- 11. C** — The physical fracture identifies a mechanical support fault, and the sensor accurately represents the changed position. Correct the spring condition using the applicable repair requirements. Accurate measurement of a low corner does not make the supporting spring acceptable or prove the sensor caused the height change.
- 12. B** — The original leak affected the charge-air path under load, so verify the repair at its relevant operating condition with the specified measurements. Idle operation may not reproduce that demand. Appearance and component identity cannot quantify whether the repaired path now retains the required pressure.
- 13. D** — The message reaches the gateway, and the documented exclusion explains why it is not forwarded to the required destination. Restore and verify the applicable configuration. An available source value does not support replacing the sensor as the demonstrated cause of the missing routed information.
- 14. D** — The connector is part of an identified restraint-related input and must be restored using the applicable service method. Do not substitute unrelated circuit practices or assume message clearing verifies operation. Complete the approved input and system checks for the actual repaired connection.
- 15. A** — The mechanical position is verified, but the control input lacks its required reference initialization. Complete that procedure and confirm response before condemning the rack. Correct alignment does not automatically establish the electronic straight-ahead value expected by the control system.
- 16. B** — The instrument compares the two designated pressure connections. Its reading must therefore be interpreted with both locations and their communication paths. It does not automatically report absolute pressure or temperature, and blocked connections can invalidate the intended comparison.
- 17. C** — The startup load exposes a specific low-voltage supply defect affecting the control equipment. Correct and verify it before condemning traction components from absent readiness alone. An acceptable sleeping voltage does not demonstrate sufficient delivery when the modules demand operating current.
- 18. B** — The independent pressure check and failed local signal comparison demonstrate a measurement-path problem requiring diagnosis. Verify the sensor and connection under the applicable method. Replacing fuel-delivery parts from the displayed value would ignore evidence that actual pressure meets the requirement at the tested condition.
- 19. D** — Subtract the delivered 510 g from the stated 720 g target to obtain 210 g. The empty prepared starting condition makes that difference meaningful. The result must not be used as a topping-up instruction for a system with unknown retained refrigerant.
- 20. C** — The downstream defect must be removed before the circuit's correct protective arrangement is accepted. A replacement fuse does not repair the fault it interrupted. Follow the specified protection and wiring procedure rather than altering capacity to keep a damaged path energized.

- 21. A** — Steering-wheel appearance is not a measurement of the required wheel geometry. Correct and verify the deficient toe result before acceptance. A new component and an operating engine cannot establish that the completed steering repair meets the supplied alignment criterion.
- 22. D** — The diagnostic relationship is unclear and could direct testing to the wrong circuit. Reconcile the parameter, identifier, and applicable vehicle information before probing. The presence of both sensors does not make their specifications or control-system roles interchangeable.
- 23. A** — The stable command and movement-sensitive output localize the failure to the relay/socket path. Restore terminal retention and verify delivery under load. Intermittent pump operation alone could have many causes, but the reproduced local connection fault provides specific corrective evidence.
- 24. C** — The service requirement controls the fastener's disposition and complete assembly method. Exterior appearance alone does not overrule the replacement instruction. Matching length and an added washer cannot establish equivalence of an unverified component to the specified engine connection.
- 25. B** — The repair must preserve the electrical and mechanical relationship required for that network. Follow the approved pair and splice details rather than treating two matching colours as a complete specification. Convenient exposed stubs do not establish a suitable final communication path.
- 26. A** — Subtract the piston diameter from the bore diameter: 86.03 minus 85.96 equals 0.07 mm. The stated measuring location matters because piston dimensions can vary by location. This arithmetic provides the diametral result, which must still be compared with the applicable fit requirement.
- 27. D** — The clips must establish the intended retention while the joint meets its movement requirement. Physical fit is not the complete assembly result. Age and product identification cannot demonstrate correct installed seating, retention, or freedom of movement after the repair.
- 28. B** — The binding appears in the assembled condition and the wrong spacer supplies a specific geometric fault. Restore the specified stack and assess the bearing as required. A smooth bench check cannot establish acceptable operation after an incorrect assembly changes its installed loading.
- 29. C** — Electrical continuity confirms a present conductive path, while the unchanged contact exposure can damage it again during normal seat movement. Correct routing and protection and verify the range. A stationary pass cannot establish the final mechanical suitability of the repaired branch.
- 30. D** — The identified input and disconnected circuit provide specific evidence associated with the recent seat work. Restore and verify through the manufacturer's approved restraint procedure. A seat motor's operation does not establish buckle status, and the warning alone does not prove a deployment-unit or crash-sensor defect.
- 31. C** — The final installed relationships determine the relevant clearance, so complete the prescribed measurements before acceptance. Package information identifies parts but does not measure the assembled fit. Free rotation before final tightening is not equivalent to a verified clearance under the required condition.

- 32. A** — The restraint must control the stored energy before releasing the assembly's retaining connections. Follow and verify the prescribed setup. Part identification and tidy storage support the job but do not establish that the spring force is safely held during disassembly.
- 33. B** — The incomplete retention can affect the play observed at the hub. Restore the approved assembly condition and assess the actual bearing as directed by the procedure. Quiet previous operation and component identity do not establish its present mechanical condition or eliminate the need to evaluate damage.
- 34. A** — Multiply the stated input by the supplied useful fraction: 7 times 0.90 equals 6.3 kW. The problem defines that fraction rather than asserting a universal vehicle efficiency. Dividing instead would calculate a different relationship from the one expressly requested here.
- 35. B** — Full travel establishes a range of movement, but the wrong indexing gives the opposite response to the intended command. Correct the installation and verify its sequence. A fitted connector and cleared messages cannot establish that the actual air-control function follows the required direction.
- 36. C** — The reciprocal of 500000 bits per second is 0.000002 seconds per bit. Multiply by one million to express 2 microseconds. This calculation uses the rate supplied in the question and does not claim that all vehicle networks share this operating speed.
- 37. D** — The replacement must produce the required information as the wheel rotates and support the affected control functions. Verify its installation and dynamic response using the applicable method. A stationary zero value does not demonstrate that the sensor or target supplies valid pulses in motion.
- 38. C** — The insufficient slave travel and confirmed air provide a specific actuation fault capable of preventing release. Correct and verify that path before condemning internal drive components. Pedal movement alone does not establish that the clutch receives the required mechanical release motion.
- 39. A** — The replacement affects both glass motion and its required control relationship. Verify the complete travel and initialization under the vehicle procedure. Motor rotation and connector retention do not establish correct window operation or the specified response associated with the final installed mechanism.
- 40. B** — The known specification mismatch is an outstanding service condition that must be resolved. Correct quantity does not establish fluid suitability. The timing of the noise warrants investigation, but does not alone prove which internal part was damaged or authorize replacement without the applicable diagnosis.
- 41. D** — The misfire follows the one component intentionally moved between otherwise acceptable cylinders. That comparison supports investigating the coil and associated transferred condition. It does not prove a fixed cylinder defect or shared supply fault when the symptom changes location with the exchanged ignition part.
- 42. B** — The difference is 100 rpm. Divide by the specified expected reference of 1000 rpm and multiply by 100 for 10 percent. Using measured speed as the denominator would produce another percentage and would not follow the relation stated in the question.

- 43. D** — Multiply the supplied voltage by current: 12 times 3 equals 36 W. This is the measured electrical input at that condition. It is not a direct measurement of mechanical output or efficiency, which would need additional information about the accessory's delivered work.
- 44. C** — The removal changes the mass distribution used by the support arrangement. Establish the prescribed controls for that altered condition before transferring the engine's weight. Initial stability and engine-crane capacity cannot demonstrate the remaining vehicle's supported balance after the assembly is removed.
- 45. A** — The hoist must carry the load within its rating, while the vehicle must be supported at suitable designated locations. Neither requirement replaces the other. Wheelbase and total weight alone cannot establish the strength or arrangement of every proposed contact surface.
- 46. A** — The verified terminal mismatch changes the electrical relationship used to report pressure. Restore the correct arrangement and test it before interpreting the signal as a hydraulic fault. Retained terminals establish mechanical security, not correct circuit identity within the connector.
- 47. D** — The evaporator transfers heat from the air into refrigerant as part of the cooling cycle. The condenser rejects heat, while the compressor supplies another function. Identify these roles separately so pressure and temperature findings are related to the actual component being tested.
- 48. B** — The joint's measured wear supplies a local mechanical finding relevant to load reversal. Correct and verify it under the driveline procedure. The reversal pattern alone is not unique, but the passing differential check reduces support for condemning that assembly without further evidence.
- 49. C** — Mechanical opening verifies the latch's motion, while the wrong switch supplies incorrect position information to the controller. Restore and test the intended input. Similar connector shells and correct replacement identity cannot establish that the final control system senses the actual latch state.
- 50. A** — The stated ratio compares input speed with output speed. A value above one means more input turns occur for each output turn, so the output is slower. It does not imply zero torque transfer or define every loss in the actual gearbox.
- 51. D** — The independent speed remains steady, while connector movement reproduces failure of the reported signal. That comparison localizes the problem to the sensing path rather than demonstrating changing mechanical ratio. Repair and verify the connection before interpreting the erratic data as an internal transmission fault.
- 52. B** — The input reports the door state used by the applicable body-control functions. It does not directly measure battery capacity or every motor's mechanical torque. Diagnose the actual sensor and circuit relationship rather than assuming one door input establishes all accessory or restraint conditions.
- 53. A** — The sensor arm cannot follow the mechanism, so the control system's position information is unrepresentative despite successful motor travel. Correct and verify that linkage. Movement and feedback are separate functions; one working does not automatically establish the other.

- 54. C** — The replacement must be prepared and tested as installed in the actual circuit. Visible coolant and a fitted connector cannot demonstrate adequate flow or complete required preparation. The previous pump's test describes another component and does not establish the replacement's final thermal function.
- 55. B** — The repeatable connector movement and failed pin-retention check provide specific evidence of a local connection fault. Restore the terminal condition and verify communication through the relevant movement. An intermittent symptom alone does not establish an incorrect network rate or software selection.
- 56. C** — The caliper design controls how its piston must be returned without disrupting its required mechanism. Follow the specified procedure and tooling. Visible movement alone does not establish that another method preserves the installed assembly's internal condition and required function.
- 57. D** — Wheel retention requires the prescribed components, seating, and tightening method for the actual assembly. Apparent centring and remembered removal effort do not establish the intended connection load. Use suitable tools and complete the required checks before returning the vehicle to service.
- 58. B** — The code records the monitored failure condition rather than proving one universal cause. Module power, network wiring, configuration, or the affected sender may still require testing. Use its defined meaning and associated evidence before making component replacement decisions.
- 59. D** — Subtract the stated 18 kWh use from the initial 90 kWh to obtain 72 kWh remaining. The question explicitly excludes other changes. This ideal balance is not a battery-health assessment or a prediction of driving range without additional vehicle and operating information.
- 60. A** — The missing positive supply is localized by the open conductor, while the verified ground meets its requirement. Repair and verify that feed before assessing the motor under proper power. A good ground alone does not make a circuit complete or prove the load defective.
- 61. C** — The new product can change the required controls even when the cleaning task is otherwise similar. Review its relevant information and actual exposure conditions. Previous cleaning speed and container size do not establish suitable handling or ignition control for the substituted agent.
- 62. D** — The intake escape path directly identifies the sealing route requiring investigation. Similar wet and dry readings do not establish sound sealing when the absolute result is deficient. Use the leak evidence and mechanical procedure rather than assuming every low reading is caused by piston rings.
- 63. B** — The misplaced connector and unresponsive air measurement provide specific evidence of an incorrect sensing relationship. Restore and verify the intended input before making fuel adjustments. Secure physical latching does not establish that the control system receives information from the correct component.
- 64. A** — The installed component must be prepared for the vehicle's control system and verified as specified. Clearing messages does not initialize every required relationship. Connector fit and settings from another model cannot establish correct response of this vehicle's replaced throttle assembly.

- 65. C** — The fluid must meet the transmission's specified performance and material requirements. Its visual colour cannot establish those properties. Correct quantity and a sound housing are separate requirements and do not make an unsuitable fluid equivalent to the approved lubricant.
- 66. A** — The two defined reductions act in sequence, so multiply 2.5 by 4 for a combined 10:1 input-to-final-output ratio. Adding the stage ratios does not represent successive speed reductions. The problem explicitly supplies the multiplication assumption rather than requiring an unstated operating gear.
- 67. B** — Cranking shows some operation, but the required loaded measurement still identifies unacceptable loss at the repair. Correct and repeat that verification. A new terminal can be poorly assembled, and visible colour cannot establish its electrical contact performance under starter current.
- 68. D** — Subtract the final plus 0.10 degree reading from the initial plus 0.30 degree reading to obtain a 0.20 degree reduction. The readings use the same sign convention. Whether the new value is acceptable still depends on the stated alignment requirement.
- 69. C** — The connection's loaded loss and heating supply physical and electrical evidence of a resistive path. Correct and verify it before condemning generating or storage components from the warning alone. A suitable alternator output cannot reach the battery correctly through an inadequate connection.
- 70. A** — The replacement did not remove the measured harness short, so that physical defect remains an outstanding cause. Repair and verify it through the applicable network method. A new component cannot make an unchanged damaged circuit acceptable or justify further unrelated replacements.
- 71. B** — The low-voltage system powers defined control and accessory functions within the vehicle design. Its state does not establish the stored-energy condition or insulation of the traction circuit. Diagnose both systems according to their actual relationship rather than using one supply reading as proof about every voltage boundary.
- 72. C** — The repair addresses current delivery, so verify the connection under the prescribed loaded condition. Appearance and colour cannot quantify remaining loss. Alternator sound does not establish that its output reaches the battery through the restored cable path as required.
- 73. D** — Subtract the leaving temperature from entering temperature: 32 minus 15 gives 17 degrees C. This describes the measured air change under the stated setup. Acceptance also depends on the defined airflow and other required conditions rather than a universal temperature-drop limit.
- 74. B** — The wheel remains physically in motion, and the missing waveform pulses align with the damaged target. Investigate and correct that sensing target under the procedure. A reported zero does not establish a stopped wheel when the source signal demonstrably loses its rotation information.
- 75. D** — The open input wire prevents the command reaching the controller even though the motor can operate. Repair and verify that path before condemning mechanical or output components. Physical switch movement alone does not demonstrate delivery of its electrical signal through a damaged harness.

- 76. A** — The low fluid and visible leak provide a defined supply deficiency under the complaint condition. Correct it and verify operation before further component diagnosis. Remaining steering movement does not establish adequate fluid supply, and an acceptable belt does not explain the demonstrated loss.
- 77. C** — The travel result verifies one operating attribute, while the leaking connection fails a separate integrity requirement. Correct and retest that boundary before acceptance. New condition and normal pedal return cannot establish a sound seal where actual fluid escape is observed.
- 78. D** — The connections must meet the actual component's service requirements, including replacement where prescribed. Exterior appearance cannot override that instruction. Unapproved face rework and thread fit do not establish the required integrity of the completed high-pressure diesel assembly.
- 79. C** — The thickness requirement belongs to the particular disc and applicable service method. Compare the measured or proposed finished component with that defined criterion. It is not a universal value across vehicles or a substitute for runout and thickness-variation criteria.
- 80. B** — The measured imbalance supplies a relevant condition after the tyre change, while the other checks reduce support for a seating or runout fault. Correct and verify balance using the specified method. New tyre condition does not establish a balanced rotating assembly.
- 81. A** — The modulator changes hydraulic pressure as commanded by the applicable brake-control strategy. Wheel-speed information and other inputs inform that control, but direct wheel-speed, steering-angle, and pedal sensing are different input functions. Diagnose its function using the vehicle's specified methods.
- 82. C** — The verified rail condition reduces support for a shared pressure deficiency, while the low cylinder contribution and failed compression provide mechanical evidence. Follow the appropriate cylinder tests to locate the cause. Replacing rail components cannot correct a demonstrated compression problem in one cylinder.
- 83. A** — The movement occurs at a specific loose attachment under the condition relevant to the complaint. Restore that support and verify operation. Free joint rotation does not establish secure mounting, and a broad clunk symptom does not justify replacing components that pass the required checks.
- 84. D** — The changing door input explains the repeated wake-ups, and the controlled comparison restores the specified sleep condition. Diagnose that input and connection. An isolated eventual sleep event does not establish stable shutdown, while the evidence does not prove a battery or alternator defect.
- 85. B** — Subtract the minimum negative reading from the maximum positive reading: 0.05 minus negative 0.04 equals 0.09 mm. The sweep spans both sides of zero. Subtracting the absolute magnitudes would not report the full measured variation.

- 86. C** — The comparison identifies a specific mechanical fault in one brake assembly that can affect balanced operation. Correct and verify the sliding mechanism. Released-wheel rotation does not establish proper caliper behaviour under application, and the bind does not demonstrate an unrelated balancing or software fault.
- 87. B** — Force equals pressure multiplied by effective area. Five newtons per square millimetre times 1000 square millimetres gives 5000 N. This ideal calculation excludes friction or other losses not supplied and is not itself a vehicle's braking-performance acceptance test.
- 88. D** — The command changes and actuator turns, but the broken coupling prevents that movement reaching the door. Repair and verify the mechanical relationship and actual distribution. The feedback result does not demonstrate a refrigerant or blower fault when a specific motion-transfer defect is visible.
- 89. A** — The input supplies information used in assessing mixture condition under the controller's applicable operating strategy. It does not directly measure mechanical clearances or tank contents. Evaluate the actual sensor type and test conditions rather than assuming all oxygen-sensing devices share one electrical response.
- 90. D** — The repeated offset belongs to the second instrument across independent conditions. Verify and correct its reference under the instrument procedure before judging the vehicle. A discrepancy alone could have several explanations, but the known-source comparison supplies evidence about which measurement is unreliable.
- 91. A** — The operating pattern and failed fan supply check identify inadequate commanded airflow at rest. Correct and verify that circuit before changing charge without evidence. Improvement in motion does not make the stationary requirement acceptable or prove an evaporator defect.
- 92. B** — The procedure identifies how the actual vehicle is prepared and how the work point must be verified by appropriately trained personnel. It is not a universal substitute across designs. Disconnecting a boundary does not automatically remove every internal stored-energy source or eliminate required instrument checks.
- 93. C** — The required reduction is 0.32 minus 0.20, or 0.12 mm. Under the explicit one-for-one relation, add that thickness through the approved shim method. The relation is supplied for this assembly and must not be assumed to govern every driveline adjustment.
- 94. D** — The correct reference position makes the comparison meaningful, and the single deficient clearance identifies an outstanding local condition. Correct and verify it under the engine procedure. Compliant neighbours and new components cannot establish that the affected valve meets its own requirement.
- 95. B** — The interlock is a required part of the restored vehicle arrangement and must pass its specified checks. Cover fit and accessory operation establish different conditions. A cleared status record does not demonstrate continuity, correct engagement, or the affected system's required operating response.

- 96. A** — The matching supply event explains why the affected session stops and the successful comparison limits the universal vehicle-fault claim. Verify the installation and relevant vehicle records before selecting a repair. Connector fit alone does not establish continuous electrical supply during charging.
- 97. C** — The rolled seal identifies a specific assembly condition matching the localized leak. Correct the connection through the approved method and repeat verification. Correct component identity does not demonstrate correct assembly, and the external leak does not establish a pump or pressure-sensor defect.
- 98. D** — The completed boundary must be tested and prepared under the applicable refrigerant procedure before its performance is accepted. Thread engagement and exterior dimensions do not establish tightness, internal condition, or restored cooling. Verify the actual installed connection and affected operation.
- 99. B** — The communication change occurs with the specific branch and its documented terminal relationship is wrong. Correct and test that arrangement under the vehicle method. Secure mechanical retention cannot establish correct wire identity or explain away a reproduced network disturbance.
- 100. C** — With constant stated speed, distance equals speed times elapsed time. Twenty metres per second multiplied by 0.6 second gives 12 m. The explicit no-slowness condition makes this a response-interval distance rather than a calculation of the complete braking distance.
- 101. A** — Seal position and the contacting surface contribute to the completed sealing function. Inspect and assemble them under the applicable method. External size identifies one fit attribute but cannot establish that the lip relationship or mating surface is acceptable after installation.
- 102. A** — Caster refers to the steering-axis inclination seen from the side. Camber concerns wheel tilt in front view, while toe describes the wheels' directional relationship in plan. Keep the viewing plane and measured feature distinct when interpreting an alignment report.
- 103. C** — The configuration must match the actual vehicle and installed component under the service procedure. Similar appearance does not establish the same equipment or message requirements. Defaults and dimensions cannot replace verified information needed for the replacement module's correct operation.
- 104. B** — The locking insert contributes to retaining the terminals in their intended positions and must be reinstated as specified. A closed outer latch does not necessarily provide that internal function. Continuity at rest cannot establish secure terminal position through normal vibration and movement.
- 105. D** — The test pressurizes a cylinder at the required position to assess its sealing and leakage routes. It complements rather than duplicates a fuel-delivery or ignition-control test. Interpret the result with the setup and actual escape paths so a pressure loss is not assigned to an unrelated system.
- 106. A** — Multiply the stated eight-second cycle by four to obtain 32 seconds. The question explicitly excludes pauses and changes in cycle duration. This total does not establish mechanical or electrical acceptance without the applicable criterion for the accessory's actual movement.

107. B — Use resistance equals voltage divided by current. Dividing 1.2 by 0.3 gives 4 ohms under the stated condition. Multiplication calculates power instead, while the reciprocal division would not give the resistance defined by this voltage and current relationship.

108. D — Multiply the 45 psi reading by the supplied 6.9 kPa per psi conversion to obtain 310.5 kPa. This changes units without changing the pressure reference. Comparing with a service requirement still requires matching that reference and the defined operating condition.

109. C — Subtract the supplied 24.0 mm minimum from the measured 24.7 mm to obtain 0.7 mm. The result is a dimensional difference, not automatic authorization to remove that amount. Machining and return-to-service criteria may include additional requirements defined by the actual procedure.

110. C — The command does not produce pump operation because the feed is disconnected, providing a specific fault relevant to the rising temperature. Restore and verify the thermal system under the approved method. A warning alone does not establish damaged cells or an inaccurate temperature sensor.

111. A — The branch repair must restore its required communication and resolve the conditions that produced the complaint. A cleared report does not demonstrate durable operation. Verify affected functions rather than accepting from one unrelated responding module or the harness's exterior appearance.

112. B — Subtract the lowest reading from the highest: 190 minus 155 equals 35 kPa. That exceeds the supplied 20 kPa criterion, so the imbalance warrants follow-up diagnosis. The arithmetic identifies the comparison result but cannot by itself distinguish valve, ring, or timing causes.

113. D — The active released-pedal input and adjustment discrepancy connect the unwanted lamp command to the switch arrangement. Correct it and verify both pedal states. A functioning illuminated bulb does not show an open supply or missing ground, and replacement cannot correct the erroneous command.

114. A — The hot condition is part of the complaint and must be represented by the diagnostic test. A satisfactory cold shift does not establish hot performance. Reproduce the relevant conditions safely before interpreting measurements or selecting a repair for a temperature-dependent problem.

115. C — The required depth depends on the defined reference surface and recess contact. Choose suitable measuring equipment and establish that geometry. An outside dimension or another casting feature measures a different relationship and cannot directly supply the specified recess depth.

116. B — The retained parking-brake application explains a mechanical drag path despite released service pressure. Restore and verify the linkage's full release. Movement of the cabin operator does not establish that the wheel-end mechanism follows it through the required travel.

117. D — The method's defined engine and temperature states determine whether the level reading represents the required condition. Establish them before interpretation. A clean measuring tool supports the process, but cannot make a reading from the wrong operating state equivalent to the specified check.

118. B — An unloaded resistance or continuity test may not stress the connection like the actual operating current. A loaded voltage-drop check can expose the resulting loss. Interpret the prescribed tests together rather than treating any conductive path as proof of adequate current-carrying performance.

119. A — Restoring the missing supply produces the required communication from the same module. That result links the earlier absence to its power condition. Verify affected functions, but do not treat a communication code as proof of permanent module damage after the demonstrated cause is corrected.

120. D — The open feed prevents the fan's commanded operation despite a functional motor. Repair and verify that electrical path before assigning the symptom to engine components. Hot coolant alone does not identify a thermostat or head fault when a specific cooling-function interruption is demonstrated.

121. C — The specified adaptation relates the replaced controls to the actual transmission and must be performed under its defined conditions. An unrelated procedure or cleared messages cannot establish that relationship. Selector illumination does not verify the required engagement and control functions after replacement.

122. A — The stated convention allows the two wheel readings to be added. Adding 0.12 and 0.08 gives plus 0.20 degree total toe. Averaging would produce a different quantity, while subtracting would compare the sides rather than calculate the requested total.

123. B — Under the given resistive model, current equals voltage divided by resistance. Ten divided by five gives 2 A. The calculation uses the test's stated voltage rather than assuming every accessory operates at a nominal 12 V or that other series losses are absent by default.

124. C — The local result verifies lock operation under that command, while the absent receiver supply locates a separate remote-path fault. Restore and test it. The comparison does not support mechanical door repair or replacement of a motor that already responds correctly to the local system.

125. D — The positional requirement contributes to the final assembled condition and must accompany the tightening method. Matching parts does not make every support state equivalent. Establish the actual vehicle's specified position rather than substituting a convenient hanging or unrelated reference height.