

PRACTICE EXAM 6: POSTAL AUTOMOTIVE TECHNICIAN EXAM (944) SIMULATION (100 QUESTIONS)

This practice exam contains 100 questions designed to simulate technician-level automotive diagnosis and repair topics associated with USPS Automotive Knowledge Exams 943/944/945. The USPS information package identifies a 30-minute Automotive Technician section and a minimum passing score of 70 for the examination. For study purposes, answer all 100 questions and use the explanations to review missed concepts.

1. A wet compression test raises one cylinder's compression reading substantially compared with its dry test. Which fault is most strongly indicated?

- A. A leaking intake valve
- B. A burned exhaust valve
- C. A leaking head gasket
- D. Worn piston rings

2. A vacuum gauge needle drops sharply at regular intervals while an engine idles. Which condition is most likely?

- A. A leaking or sticking valve
- B. An overfilled crankcase
- C. A restricted fuel filter
- D. An overcharged battery

3. Two adjacent cylinders have very low compression while the remaining cylinders are normal. What is the most likely cause?

- A. Worn valve stem seals
- B. A clogged air filter

- C. A head-gasket leak between cylinders
- D. A weak engine mount

4. An engine emits a brief cloud of blue smoke after a long closed-throttle deceleration and then acceleration. Which fault best fits this symptom?

- A. A stuck-open thermostat
- B. Worn valve stem seals or guides
- C. A weak ignition coil
- D. A restricted catalytic converter

5. Engine oil appears milky and the coolant level is dropping with no visible external leak. Which condition should be suspected first?

- A. A clogged cabin air filter
- B. A loose alternator belt
- C. A worn outer CV joint
- D. An internal coolant leak into the crankcase

6. A gasoline engine pings only during heavy acceleration, and the noise decreases when higher-octane fuel is used. What is the noise most consistent with?

- A. Hydraulic lifter bleed-down
- B. Detonation under load
- C. Wheel-bearing roughness
- D. Starter pinion overrun

7. A timing chain is badly stretched on an otherwise sound engine. Which effect is most likely?

- A. Excessive charging voltage
- B. Increased brake pedal effort

- C. Retarded or unstable camshaft timing
- D. Lower tire rolling resistance

8. During a cylinder leak-down test, air is heard clearly at the throttle body. Where is the leakage occurring?

- A. At the intake valve or intake valve seat
- B. At the exhaust valve
- C. Past the piston rings
- D. Through the radiator cap

9. During a cylinder leak-down test, air is heard at the tailpipe. Which component is failing to seal?

- A. The intake valve
- B. The piston oil ring only
- C. The exhaust valve
- D. The thermostat bypass

10. A leak-down test produces strong airflow from the oil-fill opening with the tested cylinder at top dead center on compression. What is most likely leaking?

- A. The intake manifold gasket
- B. The piston rings or cylinder wall
- C. The exhaust flange gasket
- D. The heater control valve

11. Engine oil pressure is acceptable when cold but becomes very low at hot idle, then rises when engine speed increases. Which condition is most likely?

- A. Excessive internal bearing clearance
- B. A fully charged battery

- C. A restricted evaporative vent
- D. A loose wheel cover

12. One cylinder is low on a dry compression test and rises substantially after a small amount of oil is added. What should the technician investigate?

- A. Exhaust pipe restriction
- B. Fuel tank venting
- C. Brake booster vacuum
- D. Ring and cylinder sealing

13. All cylinders show uniformly low compression, and inspection reveals the cam timing marks are not aligned correctly. Which diagnosis best fits?

- A. A single clogged injector
- B. Incorrect valve timing
- C. One bad spark plug
- D. One leaking vacuum hose

14. An engine overheats quickly after a cold start, and the upper radiator hose remains relatively cool while the engine becomes hot. Which fault is most likely?

- A. A worn serpentine-belt idler only
- B. A rich fuel mixture
- C. A thermostat stuck closed
- D. A weak horn relay

15. Continuous bubbles appear in the radiator immediately after a cold engine is started, before the coolant has had time to boil. What should be suspected?

- A. Combustion gas entering the cooling system

- B. Normal thermostat operation
- C. A worn accessory pulley
- D. A weak starter relay

16. One spark plug repeatedly becomes oil-fouled, but that cylinder has normal compression. Which fault is most likely?

- A. A failed wheel-speed sensor
- B. An open fuel-pump relay
- C. A plugged A/C orifice tube
- D. Oil entering through a valve guide or stem seal

17. An engine has a pronounced vibration at idle, cylinder balance is even, and one engine mount is visibly collapsed. What is the most likely cause?

- A. A leaking fuel injector
- B. The failed engine mount
- C. A restricted radiator core
- D. A worn brake pad

18. A hydraulic lifter ticks after the engine is fully warm, and the lifter is known to receive adequate oil pressure. What is a likely cause?

- A. A stuck-open purge valve
- B. A worn tie-rod end
- C. A low tire-pressure sensor battery
- D. A sticking or internally leaking lifter

19. Crankcase pressure is high and oil leaks appear at several seals. The PCV flow path is blocked. What is the most appropriate first repair?

- A. Increase ignition timing
- B. Replace the brake booster
- C. Restore proper crankcase ventilation
- D. Adjust rear wheel toe

20. Measured crankshaft endplay is excessive and a fore-and-aft knock is present when load direction changes. Which component is most likely worn?

- A. The crankshaft thrust bearing surface
- B. The intake air filter
- C. The radiator fan relay
- D. The front brake hose

21. The headlights remain bright, but the engine will not crank and a solid click is heard from the starter area each time START is selected. What is most likely?

- A. A completely discharged battery
- B. An open headlamp fuse
- C. A failed coolant thermostat
- D. A starter motor or solenoid high-current fault

22. A 12-volt source is connected across a 4-ohm resistor. Ignoring wiring resistance, how much current flows?

- A. 3 amperes
- B. 2 amperes
- C. 4 amperes
- D. 48 amperes

23. A vehicle cranks slowly. The battery passes a load test, but a voltage-drop test shows excessive drop across the positive starter cable. What should be repaired first?

- A. The oxygen sensor heater
- B. The rear shock absorber
- C. The high-resistance positive cable or connection
- D. The cabin temperature sensor

24. Charging output is low and the alternator drive belt squeals when electrical load is increased. What is the most likely cause?

- A. A shorted brake lamp socket
- B. A slipping alternator drive belt
- C. A stuck EGR valve
- D. A worn wheel bearing

25. Two 6-ohm resistors are connected in parallel. What is the equivalent resistance of the pair?

- A. 6 ohms
- B. 3 ohms
- C. 12 ohms
- D. 36 ohms

26. A parasitic battery draw disappears when one fuse is removed. What has the test established?

- A. The alternator belt is slipping
- B. The starter pinion is worn
- C. The engine thermostat is stuck
- D. The draw is on that fused circuit

27. An alternator produces excessive AC ripple even though average charging voltage is near normal. Which fault is most likely?

- A. A worn lower ball joint

- B. A restricted heater core
- C. A failed alternator rectifier diode
- D. A leaking injector O-ring

28. Several sensors that share a 5-volt reference suddenly read incorrectly, and the common reference measures near zero. What is a likely cause?

- A. A short on the shared 5-volt reference
- B. A worn clutch disc
- C. A loose exhaust hanger
- D. A restricted brake hose

29. A three-wire Hall-effect speed sensor has correct power and signal wiring, but its ground circuit is open. What is the expected result?

- A. Charging voltage will double
- B. Fuel pressure will rise
- C. No reliable sensor output signal
- D. Brake fluid will aerate

30. A replacement fuse blows immediately every time the affected circuit is switched on. Which fault should be suspected first?

- A. An open circuit after the load
- B. A fully charged battery
- C. A clean chassis ground
- D. A short to ground downstream of the fuse

31. In a simple series circuit, one connection opens completely. What happens to current through the entire circuit?

- A. Current falls to zero everywhere in the series path
- B. Current doubles in every load
- C. Only voltage becomes zero at the battery
- D. Current bypasses the open automatically

32. During a no-crank diagnosis, battery voltage is present at the starter solenoid S terminal while the key is held in START, but the solenoid does not click. What is most likely?

- A. An open ignition-switch feed before the S terminal
- B. A faulty starter solenoid or starter assembly
- C. A failed tail lamp bulb
- D. A clogged engine air filter

33. A 12-volt electrical load draws 5 amperes. How much electrical power is it using?

- A. 17 watts
- B. 2.4 watts
- C. 120 watts
- D. 60 watts

34. A relay coil energizes normally, but there is no voltage leaving the switched contact even though battery voltage is present at the contact input. What is most likely?

- A. Open or burned relay contacts
- B. A shorted engine mount
- C. A stuck thermostat
- D. A worn CV boot

35. Charging voltage changes abruptly when the wiring harness near the alternator is moved by hand. What should be suspected?

- A. Normal catalytic converter operation
- B. A loose or damaged charging-system connection
- C. A properly adjusted parking brake
- D. A balanced tire assembly

36. A 12.4-volt source supplies a load that receives only 10.9 volts while operating. How much voltage is being lost in the feed and return path combined?

- A. 0.5 volt
- B. 10.9 volts
- C. 1.5 volts
- D. 23.3 volts

37. A throttle-position sensor has a correct 5-volt reference and ground, but its signal remains near zero through the entire throttle sweep. What is most likely?

- A. A slipping transmission clutch
- B. A failed sensor or signal circuit held low
- C. A blocked heater core
- D. A worn sway-bar link

38. With a loaded electric motor operating, a test light connected between the motor ground terminal and battery negative glows brightly. What does this indicate?

- A. Normal zero-voltage ground operation
- B. An overfilled transmission
- C. Excessive resistance in the motor ground path
- D. A restricted fuel filter

39. A brake pedal feels spongy after hydraulic lines were opened for repair. What is the most likely cause?

- A. Excessive caster angle
- B. A weak fuel pump
- C. A clogged PCV valve
- D. Air trapped in the hydraulic system

40. The brake pedal slowly sinks while steady pressure is held, and no external fluid leaks are found. What is most likely?

- A. Internal bypass in the master cylinder
- B. A loose wheel weight
- C. A restricted air filter
- D. A worn stabilizer link

41. After a short drive without heavy braking, the left-front wheel is much hotter than the right-front and the vehicle tends to pull left. Which fault is most likely?

- A. A dragging left-front brake
- B. A weak right-rear shock
- C. An open purge valve
- D. A loose alternator connector

42. ABS activates at very low speed on dry pavement even though no wheel is actually slipping. What is a common cause?

- A. A rich fuel mixture
- B. A seized engine mount
- C. A weak or erratic wheel-speed signal
- D. A restricted cabin filter

43. The brake pedal is unusually hard and stopping distance is increased, but hydraulic fluid level is normal. Which system should be checked first?

- A. The evaporative emission system
- B. The engine oil filter
- C. The rear differential vent
- D. The power-brake assist system

44. A vehicle with rear drum brakes has excessive pedal travel, but the pedal becomes higher after several quick pumps. What is a likely cause?

- A. The alternator is overcharging
- B. Rear brake shoes are out of adjustment
- C. The engine thermostat is open
- D. The fuel injectors are restricted

45. Petroleum-based fluid is accidentally added to a conventional brake hydraulic system. What is the primary concern?

- A. Damage and swelling of rubber hydraulic seals
- B. Reduced engine compression
- C. Excessive wheel caster
- D. Lower charging current

46. A steering-wheel vibration occurs mainly during braking from highway speed. Which condition should be investigated first?

- A. A stuck-open EGR valve
- B. A weak battery cell
- C. A worn rear wiper blade
- D. Front brake rotor thickness variation or runout-related distortion

47. A vacuum-assisted brake booster produces a hissing sound and engine idle changes whenever the brake pedal is pressed. What is most likely?

- A. A broken wheel stud
- B. A vacuum leak in the brake-booster circuit
- C. A clogged fuel filter
- D. A failed A/C clutch relay

48. On a floating disc-brake caliper, one pad is worn much more than the other on the same wheel. Which fault is most likely?

- A. Incorrect engine firing order
- B. A blocked evaporative vent
- C. Restricted caliper sliding or piston movement
- D. A stretched timing chain

49. An ABS warning appears immediately after a wheel hub assembly is replaced. The sensor wiring is intact. What should be checked next?

- A. The engine oil viscosity only
- B. The hub encoder or tone-ring orientation and sensor relationship
- C. The transmission shift cable
- D. The cabin blower resistor

50. A rigid steel brake line requires repair at a flare fitting. Which repair method is appropriate?

- A. Install a household plumbing compression fitting
- B. Seal the joint with thread tape only
- C. Use the specified automotive flare and approved brake-line components
- D. Clamp a rubber vacuum hose over the line

51. A vehicle pulls right only during braking. Inspection shows the left-front brake produces much less braking force than the right. What best explains the pull?

- A. The weaker left brake steers the vehicle left
- B. A rear shock forces the vehicle right
- C. Alternator torque steers the front wheels
- D. The vehicle is pulled toward the stronger right-front brake

52. Brake fluid is found on the friction surface of one drum-brake shoe. What is the correct repair approach?

- A. Repair the leak and replace contaminated friction material
- B. Dry the shoe and return it to service
- C. Increase tire pressure on that side
- D. Adjust ignition timing to compensate

53. A tire develops repeated scalloped or cupped wear around its circumference. Which condition is commonly associated with this pattern?

- A. Weak damping from a worn shock or strut
- B. A stuck purge solenoid
- C. A rich air-fuel mixture
- D. A weak starter relay

54. A tire tread feels smooth when rubbed one direction and sharp or feathered in the opposite direction. Which alignment angle is most likely incorrect?

- A. Caster
- B. Steering-axis inclination
- C. Toe
- D. Included angle only

55. One front tire wears heavily on only one shoulder while toe is within specification. Which alignment condition should be checked closely?

- A. Battery state of charge
- B. Camber
- C. Fuel pressure
- D. Evaporative purge flow

56. The steering wheel does not return toward center after a turn, and no power-assist fault is present. Which condition is most relevant?

- A. High fuel-pump pressure
- B. Low alternator ripple
- C. A clogged heater core
- D. Insufficient caster or binding steering components

57. A vehicle wanders on a straight road and has weak on-center directional stability. Which alignment angle most directly influences this characteristic?

- A. Caster
- B. Wheel lug torque alone
- C. Injector pulse width
- D. Thermostat opening temperature

58. A knocking sound occurs over small bumps, and inspection finds free play in a stabilizer-bar end link. What is the likely source of the noise?

- A. The oxygen sensor
- B. The radiator cap
- C. The starter solenoid
- D. The worn stabilizer-bar link

59. While checking front suspension play, movement is seen between the steering knuckle and a ball-joint stud. What component is worn?

- A. The alternator pulley
- B. The ball joint
- C. The fuel rail
- D. The brake booster check valve

60. Power steering fluid is foamy and the pump whines after recent service. What is the most likely cause?

- A. A clogged engine air filter
- B. A weak spark plug
- C. Air trapped or entering the hydraulic steering system
- D. An overheated brake rotor

61. Electric power steering becomes unusually heavy at the same time a charging-system warning appears. What should be checked first?

- A. System voltage and charging-system operation
- B. Rear axle lubricant color
- C. Fuel cap sealing only
- D. Exhaust hanger tension

62. A vehicle pulls after alignment angles are verified correct. The pull changes direction when the two front tires are swapped side to side. What is most likely?

- A. A failed engine thermostat
- B. A weak ignition coil
- C. A leaking heater valve
- D. A tire-induced radial pull

63. Total front toe is within specification, but the steering wheel is off-center while driving straight. What should be corrected?

- A. Engine compression balance
- B. Fuel injector resistance
- C. Incorrect individual toe split with correct total toe
- D. Alternator diode polarity

64. Both front corners of a vehicle sit lower than specification, with no obvious body damage. Which component should be evaluated first?

- A. The upstream oxygen sensor
- B. The front springs
- C. The starter relay
- D. The evaporative canister

65. An automatic transmission has delayed engagement after startup, and the fluid level is below the specified range. What should be addressed first?

- A. Replace the wheel bearings
- B. Adjust engine valve lash
- C. Bleed the brake system
- D. Correct fluid level and inspect for leakage

66. An automatic transmission produces a high-pitched whine in PARK that rises directly with engine speed. Which component is a likely source?

- A. An outer CV joint
- B. A rear brake shoe
- C. The transmission front pump
- D. A steering tie-rod end

67. Engine speed briefly flares upward during an automatic-transmission upshift before the next gear applies. What is most likely occurring?

- A. The radiator fan is locked on
- B. A clutch or band is slipping during the shift
- C. The brake booster is over-assisting
- D. A wheel-speed sensor is overcharging

68. A gearset has a 3:1 reduction ratio. If the input turns at 1,800 rpm, what is the output speed, ignoring slip?

- A. 600 rpm
- B. 300 rpm
- C. 1,800 rpm
- D. 5,400 rpm

69. Automatic-transmission fluid is very dark and has a strong burned odor. What does this most strongly suggest?

- A. Normal fluid aging only
- B. A rich engine mixture
- C. A weak horn circuit
- D. Excessive heat and friction-material distress

70. A vibration increases with road speed but is unchanged by shifting the transmission to a different engine rpm at the same vehicle speed. What should be inspected?

- A. Driveshaft, U-joints, and other road-speed rotating parts
- B. Ignition timing only
- C. Idle air control only
- D. Starter solenoid only

71. A front-wheel-drive vehicle clicks repeatedly from one front corner during tight turns under power. Which component is most likely worn?

- A. The transmission cooler
- B. The outer CV joint
- C. The brake master cylinder
- D. The engine thermostat

72. A rear-wheel-drive vehicle clunks when changing from acceleration to deceleration. Which condition is a likely cause?

- A. A clean air filter
- B. A fully charged battery
- C. Excessive driveline or differential backlash
- D. A new serpentine belt

73. A manual transmission shifts easily with the engine off but is difficult to shift into any gear while the engine runs. What should be suspected?

- A. The clutch is not fully releasing
- B. The alternator is overcharging
- C. The radiator cap is weak
- D. The rear tires are overinflated

74. A manual-transmission vehicle accelerates poorly under heavy load while engine rpm rises faster than vehicle speed. What is most likely?

- A. The steering gear is binding
- B. The fuel cap is loose
- C. The clutch is slipping
- D. The brake fluid is new

75. An automatic transmission has no movement in any range, fluid level is correct, and line-pressure testing shows essentially no pressure. Which fault is most likely?

- A. A worn wiper blade
- B. A failed or non-driven transmission pump
- C. A clogged cabin filter
- D. A weak sway-bar bushing

76. A transmission overheats during towing, and testing shows very little flow through the transmission cooler circuit. What is the most likely issue?

- A. A weak ignition coil
- B. An ABS sensor air gap
- C. A loose door hinge
- D. A restricted cooler or cooler line

77. Both banks show large positive fuel trims at idle, but trims move much closer to normal at 2,500 rpm. Which fault is most likely?

- A. Excessively high fuel pressure
- B. A stuck-closed thermostat only
- C. An intake vacuum leak
- D. A slipping clutch

78. Both banks have strongly negative fuel trims, and measured fuel pressure is higher than specified for the operating condition. What is most likely causing the rich correction?

- A. A major intake vacuum leak
- B. Excessive fuel pressure
- C. A low tire pressure condition
- D. A worn stabilizer link

79. A single cylinder misfires. Injector command is present, but an injector balance test shows almost no pressure drop when that injector is energized. What is most likely?

- A. The battery is overcharged
- B. The steering rack is loose
- C. The thermostat is open
- D. The injector is restricted or not flowing

80. Injector pulse width is 3.0 milliseconds. The control strategy increases it by 20 percent. What is the new pulse width?

- A. 3.6 milliseconds
- B. 3.2 milliseconds
- C. 2.4 milliseconds
- D. 6.0 milliseconds

81. An EGR valve is stuck open at idle. Which symptom is most likely?

- A. Rough idle or stalling from excessive exhaust dilution
- B. Increased starter cranking speed
- C. Higher brake hydraulic pressure
- D. Tighter wheel-bearing preload

82. A vehicle is hard to restart immediately after refueling, and testing shows the EVAP purge valve leaks when commanded closed. What is a likely explanation?

- A. The rear axle ratio changed
- B. The brake booster is over-assisting
- C. The alternator belt is too tight
- D. Excess fuel vapor is being drawn into the intake

83. The upstream oxygen sensor switches normally, but the downstream sensor closely mirrors the same switching pattern after warm-up. What does this suggest?

- A. The fuel tank is overfilled only
- B. The catalytic converter has poor oxygen-storage efficiency
- C. The starter relay is sticking
- D. The front struts are weak

84. A mass-airflow sensor underreports the actual air entering the engine. What fuel-trim direction is most likely during closed-loop operation?

- A. Strongly negative fuel trim
- B. No trim response is possible
- C. Positive fuel trim
- D. Fuel trim becomes wheel speed

85. A four-gas test shows high hydrocarbon emissions while the engine is actively misfiring. Why are hydrocarbons elevated?

- A. Unburned fuel is leaving misfiring cylinders
- B. Brake fluid is entering the exhaust
- C. Wheel alignment changes combustion
- D. The alternator increases exhaust oxygen storage

86. Fuel pressure drops rapidly after key-off, and an injector leak is suspected. Which test is most useful for confirming the source?

- A. Adjust front toe
- B. Isolate or balance-test the injectors for leakage
- C. Load-test the starter cable
- D. Bleed the power-steering system

87. An engine overheats mainly in slow traffic but runs at normal temperature at highway speed. Which fault should be checked first?

- A. Outer CV-joint lubrication
- B. Fuel-cap seal color
- C. Cooling-fan operation
- D. Starter pinion clearance

88. With the A/C operating, low-side pressure is unusually low while high-side pressure is unusually high. Which condition is most likely?

- A. A completely discharged battery
- B. A worn tie-rod end
- C. A leaking exhaust hanger
- D. A restriction in the refrigerant circuit

89. Both A/C low-side and high-side pressures are lower than expected, and cooling performance is weak. What is a likely cause?

- A. A restricted condenser airflow only
- B. A stuck blend door on hot only
- C. A seized wheel bearing
- D. Low refrigerant charge

90. An A/C compressor cycles on and off very rapidly, and system pressures indicate the charge is low. What is the likely reason for the rapid cycling?

- A. Low pressure is repeatedly opening the compressor-control circuit
- B. The engine mount is collapsed
- C. The ABS module is overactive
- D. The steering toe is incorrect

91. Both heater hoses are hot, but the passenger compartment receives only cold air when heat is commanded. What should be suspected?

- A. A clogged fuel injector
- B. A blend-door or air-mix control fault
- C. A worn U-joint
- D. A weak alternator diode

92. A/C cooling is acceptable while driving but deteriorates at idle, and high-side pressure becomes excessive. The condenser fan does not operate. What is the likely cause?

- A. A weak spark plug
- B. A loose parking-brake cable
- C. Insufficient condenser airflow at idle
- D. A clogged PCV hose

93. A cylinder-head fastener requires a specified torque and tightening sequence. What is the best practice?

- A. Tighten each fastener by feel only
- B. Use maximum impact-wrench power
- C. Tighten random bolts until none move
- D. Use a calibrated torque wrench and follow the specified sequence

94. Before servicing near an airbag module or its wiring, what should the technician do?

- A. Strike the module to discharge it
- B. Probe deployment wires with a test light
- C. Disable the supplemental restraint system using the manufacturer's procedure
- D. Apply battery voltage to verify the inflator

95. A vehicle must be raised for underbody service. What is the safest general practice?

- A. Support it only with the hydraulic jack

- B. Lift at approved points and support the vehicle with properly rated equipment
- C. Place stands under thin floor sheet metal
- D. Work underneath while the vehicle is being raised

96. Brake dust must be cleaned from a brake assembly. Which method is preferred over blowing the dust with compressed air?

- A. Use an approved wet or HEPA-filtered brake-cleaning method
- B. Blow it directly toward an open doorway
- C. Sweep it dry with a household broom
- D. Use compressed air while holding your breath

97. A vehicle arrives with a warning lamp on and several stored diagnostic trouble codes. What should be done before clearing the codes?

- A. Disconnect every sensor first
- B. Replace the control module immediately
- C. Record the codes and relevant freeze-frame or scan data
- D. Clear everything before reading any data

98. After replacing a component that was believed to cause an intermittent drivability complaint, what is the best final step?

- A. Verify the repair under the original complaint conditions
- B. Return the vehicle without testing
- C. Clear codes and assume the repair worked
- D. Replace a second component as insurance

99. A seized fastener is located beside a fuel or vapor line. Which approach is safest?

- A. Heat the fastener immediately with an open flame

- B. Use non-flame methods and protect nearby components before escalating the repair
- C. Cut the fuel line to gain access
- D. Spray flammable cleaner while heating the fastener

100. When disconnecting a conventional vehicle battery for service, which sequence is generally preferred to reduce accidental shorting risk?

- A. Disconnect the positive cable first and reconnect it last
- B. Short both terminals together before removal
- C. Leave both cables connected while removing the battery
- D. Disconnect the negative cable first and reconnect it last

Practice Exam 6: Answer Key and Explanations

1. D — Oil added during a wet compression test temporarily improves the seal between the piston rings and cylinder wall. A large increase therefore points toward ring or cylinder sealing loss. Valve leakage and head-gasket leakage normally do not improve significantly merely because a small amount of oil was added to the cylinder.

2. A — A regular, repeating vacuum drop at idle usually corresponds to one cylinder losing sealing as its valve event occurs. A sticking, burned, or leaking valve can create that pattern. Fuel restriction generally appears under load, crankcase oil level does not create a rhythmic manifold-vacuum drop, and battery charge has no direct effect on manifold vacuum.

3. C — When two neighboring cylinders are both low, a leakage path between those cylinders is a strong possibility. A failed head gasket can connect the combustion chambers and reduce compression in both. Valve stem seals affect oil control rather than compression, an air filter affects all cylinders, and an engine mount cannot reduce cylinder pressure.

4. B — Closed-throttle deceleration creates high intake-manifold vacuum. Worn valve guides or stem seals can allow oil to be drawn into the cylinders during that period, producing blue smoke when the throttle reopens. A thermostat affects temperature, an ignition coil affects spark, and an exhaust restriction typically reduces power rather than causing oil smoke.

5. D — Milky engine oil indicates water or coolant has mixed with the lubricant. With unexplained coolant loss, an internal path such as a head gasket, cracked head, or other coolant-to-oil passage is the priority concern. The other choices cannot place coolant into the crankcase and do not explain the contaminated oil appearance.

6. B — Detonation is abnormal combustion that can sound like pinging or rattling during high cylinder pressure and heavy load. Greater knock resistance can reduce the symptom, supporting that diagnosis. Lifter noise follows valvetrain operation, wheel bearings follow road speed, and starter overrun occurs during or immediately after cranking rather than under acceleration.

7. C — A stretched timing chain changes the relationship between the crankshaft and camshaft. Valve timing can become retarded or unstable, reducing performance and sometimes causing rough operation or timing-related faults. Charging voltage, brake effort, and tire rolling resistance are controlled by unrelated systems and would not be direct consequences of chain stretch.

8. A — Compressed air heard at the throttle body is escaping backward through the intake port, indicating an intake valve that is not sealing. Air at the tailpipe suggests an exhaust-valve leak, air at the crankcase indicates ring leakage, and bubbles in the cooling system suggest a head-gasket or casting leak. The test location makes that conclusion especially useful.

9. C — Air heard at the tailpipe during leak-down testing has passed through the exhaust port, so the exhaust valve or its seat is not sealing. Intake leakage is heard at the throttle body, ring leakage is heard at the crankcase, and a thermostat bypass is part of the cooling circuit rather than the combustion chamber.

10. B — Leak-down air entering the crankcase must pass the piston and ring package or a damaged cylinder wall. That makes ring or cylinder sealing the likely problem. Intake and exhaust manifold gaskets are outside the sealed combustion chamber, while a heater control valve belongs to the cooling system and cannot create crankcase airflow.

11. A — Hot oil is thinner, so excessive bearing clearance allows more leakage and can lower pressure most noticeably at idle. Increasing engine speed raises pump output and may temporarily restore pressure. Battery state, evaporative venting, and wheel hardware do not control engine lubrication pressure and cannot explain the temperature-dependent pressure pattern.

12. D — The added oil temporarily seals gaps between the rings and cylinder wall, so a meaningful compression increase points to worn rings or cylinder wear. Valve and head-gasket faults generally remain low during a wet test. Exhaust, fuel-tank, and brake-booster conditions may affect operation but do not produce this specific compression response.

13. B — Uniformly low compression across all cylinders suggests a condition affecting the entire engine rather than one cylinder. Incorrect cam timing changes when all valves open and close and can reduce cranking compression throughout the engine. A single injector, spark plug, or local vacuum leak would normally create a more localized symptom.

14. C — A thermostat stuck closed can block normal coolant flow from the engine to the radiator. The engine temperature then rises while the radiator hose stays comparatively cool because hot coolant is not circulating through it. The other choices do not directly prevent coolant from reaching the radiator and do not match the temperature pattern.

15. A — Bubbles present immediately on a cold start are unlikely to be caused by boiling. Combustion pressure leaking through a head gasket, cracked head, or related defect can force gas into the cooling system as soon as cylinders fire. Thermostat action, accessory pulleys, and starter relays do not inject combustion gas into coolant.

16. D — Normal compression makes a major ring-sealing problem less likely, while repeated oil fouling still shows oil is entering that cylinder. Worn valve guides or stem seals can admit oil without significantly reducing compression. The other choices are unrelated to combustion-chamber oil entry and cannot explain an isolated oil-fouled plug. The test location makes that conclusion especially useful.

17. B — Even cylinder contribution indicates the engine itself is producing relatively balanced torque. A collapsed mount can transmit normal engine vibration directly into the body instead of isolating it. Injector problems usually affect cylinder balance, a restricted radiator affects cooling, and brake-pad wear cannot create an engine-speed vibration while the vehicle is stationary.

18. D — If oil pressure to the lifter is adequate, persistent ticking points toward the lifter itself failing to maintain its hydraulic lash adjustment. Internal leakage, contamination, or sticking can prevent proper plunger operation. Purge valves, steering joints, and tire sensors are unrelated systems and cannot create a localized valvetrain tick. The test location makes that conclusion especially useful.

19. C — A blocked positive crankcase ventilation path allows blow-by gases to accumulate and raise crankcase pressure. Restoring ventilation addresses the direct cause and can reduce pressure forcing oil past seals. Ignition timing, brake assist, and wheel alignment do not control crankcase ventilation and should not be used to treat this symptom.

20. A — Crankshaft endplay is controlled by thrust surfaces built into a main bearing or dedicated thrust bearing arrangement. Excessive axial movement therefore points to wear at those surfaces. An air filter, fan relay, and brake hose cannot limit crankshaft movement and would not create an axial knock when engine load reverses.

21. D — Bright headlights show the battery can at least support a substantial lighting load, while the click shows the starter control circuit is reaching the solenoid. Failure to crank then points toward the starter, solenoid contacts, cable path, or engine mechanical load. A dead battery would usually dim lights, and the other choices are unrelated.

22. A — Ohm's law states that current equals voltage divided by resistance. Dividing the given 12 volts by 4 ohms produces 3 amperes, so that value must be placed on the keyed option. Multiplying voltage by resistance or using the wrong divisor produces the distractors rather than the correct circuit current. The measured circuit behavior directly supports that conclusion.

23. C — Excessive voltage drop on the positive starter path means resistance is consuming voltage before it reaches the starter. Corroded terminals, damaged cable strands, or poor connections should be corrected first. Replacing unrelated sensors or suspension parts cannot restore starter-circuit voltage and would ignore the direct electrical test result. The measured circuit behavior directly supports that conclusion.

24. B — A belt that slips under increased alternator load cannot transfer enough engine torque to drive the alternator at the required speed. The squeal appearing as electrical demand rises strongly supports belt slip or inadequate tension. Brake lamps, EGR operation, and wheel bearings do not explain the load-related alternator drive noise and low output.

25. B — Equal resistors in parallel produce an equivalent resistance equal to one resistor divided by the number of equal branches. Six ohms divided by two branches equals 3 ohms. Adding the resistances would describe a series circuit, while the larger distractors contradict the basic rule that parallel resistance is below either branch value.

26. D — If removing a fuse eliminates the measured draw, current for the unwanted load was passing through that fused branch. The next step is to identify components and wiring on that circuit. Belt, starter-drive, and thermostat faults are not isolated by a fuse-removal parasitic-draw test and do not explain the electrical change.

27. C — The alternator generates alternating current internally and uses rectifier diodes to produce usable direct current. A failed diode can allow excessive AC ripple while the average DC voltage still appears acceptable. Suspension, heater, and injector faults cannot create an AC component in charging-system output and are unrelated to rectification. The measured circuit behavior directly supports that conclusion.

28. A — Multiple sensors failing simultaneously on a shared reference suggests a common-circuit problem rather than several independent sensor failures. A shorted sensor or wire can pull the 5-volt reference toward ground and corrupt all connected inputs. The other choices do not share the reference circuit and cannot collapse the sensor supply voltage.

29. C — A Hall-effect sensor requires a complete power, ground, and signal circuit. With the ground open, the internal electronics cannot operate normally, so the module will not receive a dependable switching signal. Charging voltage, fuel pressure, and brake-fluid condition are unrelated to the sensor's ground path and would not be direct consequences.

30. D — An immediate repeat fuse failure indicates current is far above the circuit's normal level. A short to ground downstream of the fuse creates a low-resistance path that can draw that excessive current. An open circuit reduces current, while a charged battery and clean ground are normal conditions rather than likely causes of overcurrent.

31. A — A series circuit has only one current path. When that path is opened anywhere, the circuit is incomplete and current stops through every series component. Current cannot automatically bypass an open unless a separate parallel path exists. The battery can still have voltage even though no current is flowing through the broken circuit.

32. B — Voltage at the S terminal during START proves the control command has reached the starter. If the solenoid remains silent, the fault is within the solenoid, starter assembly, its main power or ground path, or a mechanically locked load. An upstream open would prevent S-terminal voltage, and the other choices are unrelated.

33. D — Electrical power equals voltage multiplied by current. Using the values in the stem, 12 volts times 5 amperes equals 60 watts. Adding the values or dividing them produces incorrect results, while 120 watts would require twice the stated current at the same voltage. The calculation uses only the provided circuit values.

34. A — The energized coil shows the relay control side is functioning. Battery voltage at the contact input with no switched output means the contact set is not conducting, usually because contacts are burned, open, or mechanically failed. Engine mounts, thermostats, and CV boots cannot interrupt voltage inside an otherwise commanded electrical relay.

35. B — A voltage change caused directly by moving the harness is a classic sign of an intermittent connection, damaged conductor, loose terminal, or poor ground in that area. The mechanical movement is reproducing the fault. Exhaust, parking-brake, and tire conditions cannot explain an electrical output change synchronized with harness movement. The measured circuit behavior directly supports that conclusion.

36. C — Voltage lost in the circuit equals source voltage minus the voltage actually reaching the load. Subtracting 10.9 volts from 12.4 volts gives 1.5 volts. The other values either use only one of the measurements or add them incorrectly. This is a direct voltage-drop calculation from the numbers supplied in the stem.

37. B — With reference and ground confirmed, the sensor has the supplies needed to operate. A signal that remains near zero through the full mechanical sweep points to a failed sensor element or a signal wire shorted low. Transmission, heater, and suspension faults do not control the throttle-position signal and cannot produce this electrical pattern.

38. C — A good ground path should have very little voltage difference from the battery negative terminal under load. A bright test light across that path means enough voltage is being dropped to illuminate the lamp, indicating unwanted resistance. Fluid level and fuel restriction are unrelated, and a healthy ground should not create that strong indication.

39. D — Air is compressible, unlike brake fluid, so trapped air allows extra pedal movement and creates a soft or spongy feel after hydraulic service. Proper bleeding removes the air and restores a firm hydraulic column. Caster, fuel pressure, and crankcase ventilation do not control brake-pedal compressibility and cannot explain the post-service symptom.

40. A — A master cylinder with worn or damaged internal seals can allow fluid to bypass the piston cups internally. The pedal then sinks under steady pressure even though no fluid leaves the system externally. Wheel weights, air filters, and stabilizer links do not affect hydraulic pressure retention and cannot cause this characteristic pedal behavior.

41. A — A dragging left-front brake creates continuous friction, heating that wheel and adding braking force on the left side. The unequal force can pull the vehicle left. Suspension damping, evaporative purge, and alternator wiring cannot create localized brake heat. The temperature comparison makes a sticking caliper, hose, or related brake mechanism the priority.

42. C — ABS depends on accurate wheel-speed information. A weak sensor signal, damaged tone ring, excessive air gap, or encoder problem can make one wheel appear to stop sooner than the others, triggering false low-speed intervention. Fuel mixture, engine mounts, and cabin filtration do not provide wheel-speed data to the ABS controller.

43. D — A hard pedal with poor stopping performance often means the driver is supplying braking force without normal booster assistance. Vacuum, hydro-boost, electric assist, or related control faults should be checked depending on vehicle design. Fluid level alone does not prove assist operation, and the other systems cannot increase brake-pedal effort in this manner.

44. B — Excess shoe-to-drum clearance requires additional fluid movement before the shoes contact the drum, increasing pedal travel. Rapid pumping can temporarily take up that clearance and produce a higher pedal. Charging, thermostat, and injector faults do not alter hydraulic take-up distance and cannot explain why repeated brake applications improve pedal height.

45. A — Brake hydraulic seals are designed for the specified brake fluid, not petroleum products. Petroleum contamination can swell and damage rubber components throughout the system, creating widespread hydraulic problems. Engine compression, wheel caster, and alternator current are unrelated. Corrective service generally requires removing contamination and addressing affected rubber components according to service information.

46. D — Brake-induced steering-wheel vibration points toward a rotating front brake component generating uneven braking torque. Rotor thickness variation, distortion, or runout-related wear can create that pulsation under braking. EGR, battery, and wiper faults do not create a vibration specifically tied to brake application and front-wheel braking torque. The observed braking behavior directly supports that conclusion.

47. B — The booster uses engine vacuum on many vehicles. A diaphragm, valve, hose, or check-valve leak can admit unmetered air when the pedal is applied, causing both a hiss and an idle change. Wheel studs, fuel filters, and A/C relays do not open a vacuum path when the brake pedal moves.

48. C — A floating caliper must slide freely so clamping force is shared across both pads. Seized guide pins, corrosion, or piston problems can keep one pad in greater contact and create uneven wear. Ignition order, evaporative venting, and timing-chain stretch do not affect caliper movement and cannot create one-wheel pad wear imbalance.

49. B — Many hub assemblies include or work with a wheel-speed encoder or tone ring. Incorrect orientation, wrong part selection, excessive air gap, or an incompatible encoder can prevent a valid signal after replacement. Engine oil, shift cables, and blower resistors are unrelated to wheel-speed sensing and would not explain an immediate post-hub ABS fault.

50. C — Brake lines operate at high hydraulic pressure and require fittings and flare types approved for the vehicle design. Improvised plumbing fittings, tape, or vacuum hose are unsafe and may fail under braking pressure. The correct repair preserves tube strength, sealing geometry, and compatibility with brake fluid while following the manufacturer's specified service procedure.

51. D — A side-to-side braking imbalance makes the vehicle yaw toward the side producing greater braking force. If the left-front brake is weak, the stronger right-front brake can pull the vehicle right. Suspension or charging-system components do not create that direct brake-force imbalance. The weak side still requires diagnosis for hydraulic or mechanical causes.

52. A — Brake fluid contamination changes friction behavior and cannot be reliably removed from porous lining material. The hydraulic leak must be corrected and contaminated friction material replaced according to service practice. Simply drying the shoe risks unpredictable braking. Tire pressure and ignition timing do not correct a fluid-soaked brake lining or its source.

53. A — Cupping or scalloping can occur when the tire repeatedly loses controlled contact with the road because the shock or strut no longer damps wheel movement effectively. Other suspension looseness may contribute, so inspection is required. Purge, fuel-mixture, and starter faults do not control vertical wheel oscillation or create this wear pattern.

54. C — Feathered tread develops when the tire scrubs sideways as it rolls, which is strongly associated with incorrect toe. Caster primarily affects directional stability and returnability, while steering-axis inclination and included angle are diagnostic geometry values rather than normal toe-wear adjustments. Tire wear should still be compared across the axle before final alignment correction.

55. B — Excessive positive or negative camber loads one side of the tread more heavily and can produce one-shoulder wear. Correct toe does not eliminate a camber-related wear pattern. Battery charge, fuel pressure, and purge flow are unrelated to tire contact geometry and cannot create a consistent inside- or outside-shoulder wear condition.

56. D — Positive caster helps the front wheels return toward straight ahead after a turn. Too little caster or mechanical binding in joints, strut mounts, or steering components can reduce returnability. Fuel pressure, alternator ripple, and heater-core flow do not generate the steering geometry forces involved in self-centering behavior. The chassis symptom directly supports that diagnosis.

57. A — Caster strongly affects straight-line stability and steering return. Insufficient positive caster can make the vehicle feel light, nervous, or prone to wandering even when toe is acceptable. Lug torque, injector pulse width, and thermostat behavior belong to other systems and do not provide the geometric trail that stabilizes the steering axis.

58. D — A loose stabilizer-bar link can move and strike or shift as the suspension responds to bumps, producing a distinct clunk or knock. The observed free play directly supports that diagnosis. Oxygen sensors, radiator caps, and starter solenoids do not move with suspension travel and would not create a bump-related chassis noise.

59. B — Visible relative movement at the ball-joint connection indicates clearance where the joint should control knuckle movement tightly. That is direct evidence of ball-joint wear. Alternator, fuel-rail, and brake-booster components do not locate the steering knuckle and cannot create looseness at the observed suspension pivot. Comparing both sides of the chassis helps distinguish alignment causes from worn or damaged components.

60. C — Foamy hydraulic fluid contains entrained air, and aeration can make a power-steering pump whine or groan. The system may need proper bleeding and inspection for a suction-side air leak or low fluid level. Air filters, spark plugs, and brake rotors cannot aerate power-steering fluid or cause pump noise after service.

61. A — Electric power steering can require substantial electrical power. Low system voltage or a charging fault may cause the steering controller to reduce or lose assist, especially when a charging warning appears simultaneously. Rear-axle lubricant, fuel-cap sealing, and exhaust hangers do not supply electrical energy to the steering-assist motor. The chassis symptom directly supports that diagnosis.

62. D — When the pull reverses after the front tires are exchanged, the symptom follows a tire rather than the chassis alignment. Radial force variation or tire construction can create a directional pull even with correct alignment. Thermostat, ignition, and heater-valve faults cannot change vehicle pull simply because tire positions were swapped.

63. C — The steering wheel can be off-center when total toe is acceptable but the individual toe settings are not centered around the steering gear's straight-ahead position. Adjusting the left and right tie rods appropriately can center the wheel without changing total toe. Engine, fuel, and alternator conditions do not set steering-wheel position.

64. B — Springs support vehicle weight and establish static ride height. Sagged or weakened front springs can lower both front corners and alter alignment geometry. Dampers mainly control motion rather than support normal ride height on conventional designs. Oxygen sensors, starter relays, and evaporative canisters cannot determine chassis ride height. The chassis symptom directly supports that diagnosis.

65. D — Low transmission fluid can allow the pump to draw air, delay hydraulic pressure buildup, and cause delayed engagement. Correcting the level and finding any leak is the logical first step before condemning internal parts. Wheel bearings, valve lash, and brake hydraulics do not supply transmission clutch pressure and cannot explain the low-fluid symptom.

66. C — The front pump is driven whenever the engine turns on many automatic transmissions, so a pump whine can be present in PARK and rise with engine speed. CV joints and tires follow vehicle movement, while brake shoes and tie rods do not rotate with engine speed when the vehicle is stationary.

67. B — An RPM flare during a shift means the engine momentarily loses the expected load before the next ratio is fully applied. That points to delayed or slipping clutch or band application, often from hydraulic or friction issues. Cooling fans, brake assist, and wheel-speed sensors cannot produce a ratio-change flare inside the transmission.

68. A — A 3:1 reduction means the input turns three times for every one output revolution. Dividing the 1,800-rpm input speed by 3 gives 600 rpm at the output. Multiplying would describe the opposite speed relationship, while leaving speed unchanged would ignore the stated reduction ratio entirely. The operating pattern directly supports that drivetrain diagnosis.

69. D — A burned odor and darkened fluid commonly accompany excessive transmission heat and friction-material deterioration. The finding does not identify one failed component by itself, but it warns that internal slipping, overheating, or lubrication problems may be present. Engine mixture and horn circuits cannot discolor transmission fluid through normal operation. The operating pattern directly supports that drivetrain diagnosis.

70. A — A vibration tied to vehicle speed rather than engine speed points toward components rotating with the driveline or wheels. Driveshaft imbalance, U-joint wear, or related rotating parts are logical suspects. Ignition and idle controls follow engine operation, and the starter is inactive while driving, so those faults do not fit the speed relationship.

71. B — Outer constant-velocity joints operate at large articulation angles during turns and can click rhythmically when their internal tracks or bearings wear. The symptom is especially common under power on tight turns. A cooler, master cylinder, and thermostat do not rotate at wheel speed or change operating angle with steering input.

72. C — Load reversal takes up clearance in U-joints, splines, differential gears, and mounts. Excessive backlash or looseness can create a clunk when torque direction changes from drive to coast. Air filters, battery state, and serpentine-belt condition do not create clearance in the rear driveline or respond directly to torque reversal. The operating pattern directly supports that drivetrain diagnosis.

73. A — If the gearbox shifts normally with the engine stopped, the internal shift mechanism may be serviceable. Difficulty only while the engine runs suggests the input shaft is still being driven because the clutch is dragging or not fully releasing. Charging, cooling-system pressure, and tire inflation do not keep the transmission input shaft turning.

74. C — When engine rpm increases without a proportional increase in road speed, torque is not being transferred effectively through the clutch. Worn friction material, weak clamping force, or contamination can cause that slip, especially under load. Steering, fuel-cap, and brake-fluid conditions do not disconnect engine speed from vehicle acceleration in this way.

75. B — Automatic transmission clutches and servos require hydraulic line pressure. If no range produces movement and measured pressure is essentially absent despite correct fluid level, the pump may have failed or lost its drive. Wiper, cabin-filter, and suspension-bushing faults cannot eliminate transmission hydraulic pressure or prevent engagement in every range. The operating pattern directly supports that drivetrain diagnosis.

76. D — The cooler circuit removes heat from automatic-transmission fluid. Restricted flow reduces heat rejection and can cause temperature to rise during heavy-load operation such as towing. Ignition coils, ABS sensors, and door hardware do not control transmission-fluid circulation. The restriction should be located and corrected before heat-damaged components are condemned. The operating pattern directly supports that drivetrain diagnosis.

77. C — A vacuum leak adds unmetered air that represents a large percentage of total airflow at idle, so the control module adds substantial fuel and positive trims rise. At higher airflow the leak is

proportionally smaller, so trims improve. High fuel pressure tends to drive trims negative, while thermostat and clutch faults do not create this pattern.

78. B — Negative fuel trim means the control module is subtracting fuel because feedback indicates the mixture is rich. Excessive fuel pressure can deliver more fuel through the injectors for a given command and create that correction. A vacuum leak normally drives trims positive, while tire and suspension conditions do not alter commanded fuel mixture.

79. D — A balance test looks for the pressure decrease caused by fuel leaving the rail through an energized injector. If command is present but almost no drop occurs, that injector is not flowing normally and may be restricted or mechanically stuck. Battery, steering, and thermostat faults do not prevent one commanded injector from releasing fuel.

80. A — A 20 percent increase means multiplying the original 3.0 milliseconds by 1.20. The result is 3.6 milliseconds. Adding 0.2 directly to the pulse width gives the wrong units and result, while 2.4 is a decrease and 6.0 incorrectly doubles the original command. A symptom-based test plan prevents mixture problems from being blamed on unrelated emissions components.

81. A — EGR flow is generally undesirable at idle because excessive inert exhaust gas can dilute the incoming mixture enough to destabilize combustion. A valve stuck open may therefore cause rough idle, misfire, or stalling. Starter speed, brake pressure, and wheel-bearing preload are controlled by other systems and are not direct effects of EGR flow.

82. D — A purge valve that leaks while commanded closed can allow a large vapor load from the canister into the intake, especially after refueling. The temporary rich condition can make restarting difficult. Axle ratio, brake assist, and alternator-belt tension do not control evaporative vapor flow into the engine and cannot explain the refueling connection.

83. B — A healthy catalyst tends to smooth oxygen fluctuations so the downstream sensor is usually steadier than the upstream sensor during closed-loop operation. When the downstream pattern closely follows the upstream pattern, catalyst oxygen-storage efficiency may be reduced. Fuel level, starter relays, and struts do not determine the relationship between these two exhaust sensors.

84. C — If measured airflow is lower than actual airflow, the control module initially commands too little fuel. Oxygen feedback then detects a lean tendency and the module adds fuel, producing positive trim. Negative trim would indicate fuel being removed. Wheel speed is unrelated, and closed-loop feedback can compensate within limits rather than producing no response.

85. A — Hydrocarbons represent unburned or partially burned fuel. A cylinder that misfires does not complete normal combustion, so more fuel-related hydrocarbons pass into the exhaust. Brake fluid and wheel alignment are unrelated to combustion, and alternator output does not create catalyst oxygen storage in a way that explains a misfire-linked HC increase.

86. B — Rapid residual-pressure loss can come from injectors, the pump check valve, regulator path, or external leakage depending on design. Isolating the rail sections or performing an injector leak or

balance procedure can determine whether an injector is passing fuel when it should be closed. Alignment, starter, and steering tests cannot identify fuel-pressure decay.

87. C — At highway speed, natural ram airflow through the radiator can provide substantial cooling even if the electric or mechanical fan system is weak. In slow traffic, fan airflow becomes critical, so a fan-control or fan-performance fault fits the pattern. CV joints, fuel caps, and starter drives do not control radiator airflow.

88. D — A restriction can starve the evaporator side while refrigerant backs up on the high side, creating a low-low-side and high-high-side pressure pattern. The exact location depends on system design and temperature measurements. Battery, steering, and exhaust-hanger faults do not divide refrigerant pressure this way and cannot create the characteristic A/C gauge relationship.

89. D — A low refrigerant charge reduces the mass of refrigerant available throughout the system and commonly lowers both suction and discharge pressures while reducing cooling capacity. Restricted condenser airflow more often raises high-side pressure. A blend-door fault changes delivered air temperature without necessarily lowering both refrigerant pressures, and a wheel bearing is unrelated.

90. A — Low refrigerant charge can drive suction pressure down until a pressure switch or control strategy disengages the compressor for protection. Pressure then rises enough for re-engagement, producing rapid cycling. Engine mounts, ABS operation, and toe settings do not control compressor cycling based on refrigerant pressure and cannot explain the low-charge evidence.

91. B — Hot inlet and outlet heater hoses indicate hot coolant is reaching and passing through the heater core. If cabin air remains cold, the problem is more likely in air distribution or blend-door control than coolant supply. Fuel injectors, U-joints, and alternator diodes cannot redirect HVAC airflow around a warm heater core.

92. C — The condenser must reject heat to outside air. At road speed, vehicle motion can provide airflow, but at idle the fan is often essential. If the fan is inoperative, head pressure can rise and cooling performance can fall. Spark plugs, parking-brake cables, and PCV hoses do not move air through the condenser.

93. D — Critical fasteners depend on controlled clamping force and, in many cases, a prescribed tightening sequence that distributes load correctly. A calibrated torque wrench and current service procedure provide repeatable results. Tightening by feel, using uncontrolled impact force, or ignoring sequence can distort components, damage threads, or produce uneven gasket loading.

94. C — Airbag systems contain stored energy and pyrotechnic devices that can deploy with great force. The correct approach is to follow the manufacturer's disabling and waiting procedure before working in the area. Striking modules, probing deployment circuits improperly, or applying battery voltage can cause accidental deployment, injury, and expensive component damage.

95. B — Vehicle lifting requires approved lift points and equipment rated for the vehicle's weight. A hydraulic jack alone is not a secure support for underbody work, and thin sheet metal can collapse.

Properly positioned stands or a certified lift provide stable support before anyone goes underneath, reducing the risk of crushing injury or vehicle damage.

96. A — Brake dust should be controlled rather than dispersed into the breathing zone. Approved wet cleaning or HEPA-filtered equipment captures dust and reduces airborne exposure. Blowing or dry sweeping can spread fine particles through the shop. Personal protection and the facility's brake-service procedure should also be followed during cleaning and disposal.

97. C — Stored codes and freeze-frame information preserve evidence about the conditions present when a fault was detected. Recording that information before clearing helps build an efficient test plan and allows later comparison. Immediate module replacement or random disconnection ignores diagnosis, while clearing first can erase useful clues and make an intermittent fault harder to reproduce.

98. A — A repair is not complete merely because a part was replaced. The technician should reproduce, as safely as possible, the operating conditions that previously caused the complaint and confirm the symptom and related data are normal. Assuming success or replacing extra parts can hide an incomplete diagnosis and increases the chance of a comeback.

99. B — Open flame near fuel or vapor plumbing creates an obvious fire and explosion hazard. Penetrating methods, correct tools, controlled mechanical techniques, and component shielding or removal should be considered before any heat-based method allowed by service procedure. Cutting fuel lines or combining flammable chemicals with heat increases risk rather than controlling it.

100. D — Disconnecting the negative cable first removes the normal chassis return path. If a tool then contacts the body while loosening the positive terminal, it is less likely to create a direct battery short. Reconnecting negative last provides the same protection in reverse. Eye protection and the vehicle-specific service procedure remain important during battery work.