

# **PRACTICE EXAM 10: POSTAL AUTOMOTIVE TECHNICIAN EXAM (944) SIMULATION (100 QUESTIONS)**

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*This standalone 100-question practice exam is an expanded study simulation for USPS Automotive Technician Exam 944. USPS currently groups Exams 943/944/945 as Automotive Knowledge assessments and states that Automotive Technician applicants must pass Tests 943 and 944. The current USPS assessment information package presents an Automotive Technician section with a 30-minute time limit and states a minimum passing examination score of 70. USPS does not publish a current public 100-question weighted blueprint for Exam 944, so this expanded practice set uses a broad diagnostic distribution across engine performance, electrical systems, engine mechanical and cooling, drivetrain, brakes/steering/suspension, HVAC, tools, safety, and diagnostic practice. Choose the single best answer for each question.*

**1.** A warm gasoline engine idles too high after the throttle body has been cleaned. The electronic throttle plate is fully closed by command, but scan data shows more bypass air than expected. Which fault should be checked first?

- A. A restricted exhaust outlet
- B. A slipping transmission clutch
- C. An uncontrolled idle-air bypass or vacuum path
- D. A weak rear shock absorber

**2.** A MAP sensor signal indicates near-atmospheric pressure at idle even though a vacuum gauge shows strong manifold vacuum. What is the best interpretation?

- A. The MAP sensor or its signal circuit is inaccurate
- B. The catalytic converter is storing oxygen normally
- C. The torque converter clutch is applied correctly
- D. The wheel alignment has excessive caster

3. A gasoline engine runs rich only after closed-loop operation begins. Fuel pressure is correct, but the upstream oxygen sensor remains falsely lean even when extra fuel is introduced. What should be suspected?

- A. A worn wheel bearing
- B. An open heater control valve
- C. A stretched parking-brake cable
- D. A biased or failed upstream oxygen sensor circuit

4. An injector balance test shows that one cylinder produces almost no fuel-pressure drop when that injector is pulsed. What does this result most strongly indicate?

- A. The thermostat is stuck open
- B. That injector is restricted or not flowing normally
- C. The rear axle ratio is incorrect
- D. The starter drive is overrunning

5. An EVAP system repeatedly fails a pressure-decay leak test. The purge and vent valves seal when commanded, but smoke exits around the fuel-filler cap. What is the likely cause?

- A. A worn camshaft lobe
- B. A loose tie-rod end
- C. A low transmission fluid level
- D. A leaking or improperly sealing fuel cap

6. A vehicle has a low, unstable idle after battery power was disconnected. The throttle body is heavily carboned at the blade and bore. What is the best first service direction?

- A. Clean throttle body and perform the required relearn
- B. Replace the rear differential
- C. Increase the cooling-system pressure
- D. Adjust front wheel camber

**7.** A gasoline engine has good compression and fuel delivery, but ignition timing remains excessively retarded under all operating conditions. Which symptom is most likely?

- A. A harder brake pedal only
- B. Sluggish performance with increased exhaust heat
- C. A lower static tire pressure
- D. A faster blower-motor speed

**8.** Fuel pressure is correct while a vehicle runs but drops to zero almost immediately after shutdown. The engine then requires extended cranking after a hot soak. What should be investigated?

- A. An excessively positive caster angle
- B. A restricted heater core
- C. Fuel leaking through an injector, regulator, or check valve
- D. A seized parking-brake cable

**9.** A vehicle runs poorly with the MAF sensor connected but improves noticeably when the sensor is unplugged and the PCM substitutes a default value. What should the technician suspect?

- A. A biased MAF signal that is misleading fuel calculation
- B. A broken coil spring
- C. An overadjusted parking brake
- D. A clogged cabin air filter

**10.** An engine develops spark knock only during heavy load. Scan data shows the knock sensor responding, but commanded spark timing never retards. Which area deserves attention?

- A. The wheel-speed sensor tone ring
- B. The heater blower resistor
- C. The PCM knock-control strategy, inputs, or related circuit
- D. The differential cover gasket

**11.** A vacuum gauge needle flickers rapidly at idle and steadies somewhat as engine speed is raised. Which mechanical condition is most consistent with that pattern?

- A. A fully charged battery
- B. An intermittently sealing or burned valve
- C. A balanced driveshaft
- D. A properly adjusted wheel toe

**12.** A PCV system is completely blocked on an otherwise healthy engine. Which symptom is most likely to develop?

- A. Higher alternator output
- B. Lower brake hydraulic pressure
- C. Reduced differential backlash
- D. Crankcase pressure with oil seepage or seal leakage

**13.** An engine is difficult to start after refueling, but the purge valve seals correctly when de-energized. The EVAP vent valve remains closed at all times. What problem can result?

- A. Tank pressure or vacuum from a blocked vent
- B. Excessive front wheel toe
- C. A slipping accessory belt only
- D. Low brake-pad friction from glazing

**14.** A fuel pump draws unusually high current and becomes noisy while fuel pressure falls under load. Which condition should be checked?

- A. A worn steering rack mount
- B. A restricted fuel path or a failing fuel pump
- C. An open A/C clutch coil
- D. A loose exhaust heat shield

**15.** With the engine fully warm, scan data shows coolant temperature fixed at an extremely cold value and the sensor circuit has very high resistance. What fault best fits?

- A. A shorted starter armature
- B. A seized wheel bearing
- C. An open coolant-temperature sensor circuit
- D. A plugged transmission cooler

**16.** A gasoline engine misfires mainly during damp weather. Inspection reveals faint arcing from an ignition boot to ground in a darkened shop. What is the cause?

- A. The fuel tank is overfilled
- B. The thermostat is opening early
- C. The wheel bearing preload is low
- D. Secondary ignition insulation is leaking voltage

**17.** A catalyst-efficiency code is stored. After warm-up, the downstream oxygen-sensor waveform closely follows the rapid switching of the upstream sensor. What does this suggest?

- A. The catalyst is not storing oxygen effectively
- B. The battery is fully sulfated
- C. The power-steering fluid is aerated
- D. The rear brake shoes are overadjusted

**18.** A diesel engine produces black smoke and lacks power under load. Boost is low, and the air filter is heavily restricted. What mechanism best explains the smoke?

- A. Excessive wheel camber
- B. Insufficient intake air for the injected fuel
- C. Low brake-fluid level
- D. A slipping A/C clutch

**19.** A gasoline engine runs normally at idle but hesitates badly when the throttle is opened quickly. Fuel pressure remains steady, while accelerator and throttle-angle data respond immediately. Which test is most useful next?

- A. Measure rear axle backlash first
- B. Bleed the brake hydraulic system
- C. Replace the cabin air filter
- D. Evaluate ignition performance and mixture response during the hesitation

**20.** A cylinder contribution test disables each injector briefly at idle. One cylinder causes almost no rpm drop when disabled. What does that result mean?

- A. The alternator is overcharging
- B. The wheel alignment is correct
- C. That cylinder was already contributing little engine torque
- D. The heater core has excessive flow

**21.** The starter solenoid clicks firmly and battery voltage remains normal, but the starter motor does not turn. Heavy-cable voltage drop is within limits. What should be suspected?

- A. A stuck-open thermostat
- B. A worn CV boot
- C. An internal starter motor or solenoid-contact fault
- D. A restricted evaporator drain

**22.** A charging system produces almost no output. The alternator battery cable and ground test good, but the field-control command is missing. Where should diagnosis continue?

- A. At the rear brake adjuster
- B. In the alternator field-control circuit and its controller inputs
- C. Inside the heater core
- D. At the differential pinion seal

**23.** Headlamps are dim at idle and become much brighter when engine speed rises. The charging voltage is low only at idle, and the drive belt is loose. What is the likely cause?

- A. The loose belt is allowing alternator drive slippage
- B. A clogged fuel injector
- C. A worn lower ball joint
- D. A restricted heater hose

**24.** In a simple series circuit with several loads, which electrical quantity is the same through each load?

- A. Voltage drop across every load
- B. Resistance of every component
- C. Power consumed by every load
- D. Current flowing through the series path

**25.** In a correctly wired parallel lighting circuit, what is normally true of the voltage applied to each branch?

- A. Each branch receives half the source voltage
- B. Voltage exists only in the highest-resistance branch
- C. Each branch receives approximately source voltage
- D. Branch voltage depends only on lamp color

**26.** A fuse opens immediately whenever a wire harness is moved against a metal bracket. What fault is most likely?

- A. Excessive positive caster
- B. Intermittent short-to-ground from damaged insulation
- C. Low engine compression
- D. A blocked heater core

**27.** A switch receives battery voltage but the load never operates. The switch output remains at zero volts when commanded on, and the load ground is good. What is most likely?

- A. A worn piston ring
- B. A slipping clutch disc
- C. A restricted condenser airflow path
- D. An open or failed switch contact

**28.** A technician measures the same battery voltage on both test points of a fuse while the circuit is operating normally. What does that indicate?

- A. The fuse is conducting with little voltage drop
- B. The fuse is definitely open
- C. The circuit has no ground
- D. The load is shorted internally

**29.** A blower motor has battery voltage at its power terminal but runs slowly. A voltage-drop test from the motor ground to battery negative is excessive. What should be repaired?

- A. The thermostat housing
- B. The differential side gears
- C. The high-resistance ground path
- D. The brake booster check valve

**30.** What is the primary purpose of the coil side of an automotive relay?

- A. Directly carry all starter-motor current
- B. Create a magnetic field that operates the relay contacts
- C. Regulate engine coolant temperature
- D. Measure brake hydraulic pressure

**31.** Several networked modules lose communication at the same time, yet each has correct power and ground. What should be checked before replacing multiple modules?

- A. The engine oil viscosity
- B. The wheel alignment angles
- C. The cabin filter condition
- D. The shared communication bus wiring and connectors

**32.** Why is an inductive current clamp useful during starter or charging diagnosis?

- A. It sets ignition timing mechanically
- B. It measures circuit current without opening the heavy conductor
- C. It measures tire tread depth
- D. It pressurizes the cooling system

**33.** A diode inside an alternator rectifier is shorted. Which charging-system symptom is especially likely?

- A. Excessive AC ripple in the vehicle electrical system
- B. Increased tire toe-in
- C. Lower engine compression
- D. Higher refrigerant superheat only

**34.** A battery has been repeatedly left partially discharged for long periods. Which internal condition commonly reduces its ability to accept and deliver charge?

- A. Excessive caster split
- B. Restricted catalytic converter flow
- C. Sulfation of the battery plates
- D. Overfilled differential lubricant

**35.** What is the main purpose of a fusible link or high-current main fuse near the battery feed?

- A. Protect major wiring from severe overcurrent damage
- B. Set transmission shift timing
- C. Control coolant circulation
- D. Adjust steering gear preload

**36.** During a cylinder leak-down test, air is heard clearly at the exhaust outlet. Where is the leakage most likely occurring?

- A. Through the fuel-pump check valve
- B. Across the brake master cylinder
- C. Inside the A/C compressor clutch
- D. Past an exhaust valve that is not sealing

**37.** Compression is uniformly low on all cylinders after a timing-chain rattle developed. No individual cylinder stands out. What should be checked first?

- A. Rear wheel bearing preload
- B. Blower motor resistance
- C. Brake pedal free play
- D. Camshaft timing for a jumped or stretched drive

**38.** A vacuum gauge shows a steady reading that is lower than normal at idle. Ignition and fuel control are correct, and the timing belt was recently replaced. What should be checked?

- A. Valve timing that may be retarded or misindexed
- B. The fuel cap sealing surface
- C. The rear shock absorber
- D. The A/C evaporator drain

**39.** Engine oil pressure is very high immediately after a cold start but falls into the normal range as the engine warms. What is the most reasonable explanation?

- A. The brake fluid contains air
- B. The differential backlash is excessive
- C. Cold oil is more viscous and creates greater flow resistance
- D. The condenser fan is reversed

**40.** A valve-train ticking noise appears after the oil level drops below the safe range. Why can low oil level create this symptom?

- A. The wheel cylinders become overpressurized
- B. Hydraulic lifters or lash adjusters may lose adequate oil supply
- C. The alternator field current doubles
- D. The A/C blend door changes position

**41.** On an interference engine, why is a broken timing belt especially serious?

- A. Brake fluid immediately boils
- B. The alternator always overcharges
- C. Pistons can contact open valves and cause internal damage
- D. The rear axle locks automatically

**42.** The lower radiator hose collapses when engine speed is raised, and coolant flow becomes restricted. What should be checked?

- A. The rear axle vent
- B. The hose reinforcement and any suction-side restriction
- C. The stop-lamp switch
- D. The cabin temperature sensor

**43.** What does a correctly functioning cooling-system pressure cap help accomplish?

- A. Increase battery cold-cranking capacity
- B. Set automatic transmission line pressure
- C. Adjust front wheel toe
- D. Raise coolant boiling temperature by maintaining specified pressure

**44.** Engine oil has a milky appearance and the coolant level is falling with no external leak. Which fault should be investigated?

- A. An internal path allowing coolant to contaminate engine oil
- B. A loose tie-rod adjusting sleeve
- C. A clogged cabin air filter
- D. A worn starter pinion

**45.** A vehicle overheats mainly at low road speed while towing. The radiator is clear and the electric fan operates, but a mechanical fan clutch spins freely when hot. What is likely?

- A. The fan clutch is not coupling strongly enough when hot
- B. The fuel pressure is too high
- C. The wheel toe is excessive
- D. The brake booster is leaking fluid

**46.** Coolant is leaking from the water pump weep hole. What does this usually indicate?

- A. The thermostat is calibrated correctly
- B. The internal pump shaft seal is failing
- C. The starter relay is open
- D. The axle bearing is overpacked

**47.** A thermostat is installed backward in a housing designed for a specific flow direction. What problem can result?

- A. An increase in tire pressure
- B. A lower alternator ripple voltage
- C. Incorrect coolant control and possible overheating
- D. A tighter differential backlash

**48.** The crankshaft pulley wobbles visibly and the retaining fastener is loose. Why should the problem be corrected promptly?

- A. It will increase brake-fluid boiling point
- B. It will improve A/C condenser airflow
- C. It will correct a wheel-alignment pull
- D. Movement can damage the pulley, keyway, damper, or crankshaft nose

**49.** A crankshaft has excessive end movement when pushed fore and aft. Which bearing surface is most directly involved?

- A. The wheel bearing outer race
- B. The clutch release bearing only
- C. The crankshaft thrust bearing or thrust surface
- D. The blower motor sleeve bearing

**50.** Blue exhaust smoke is heaviest during hard acceleration, and a wet compression test raises low cylinder readings substantially. What is most likely?

- A. Worn piston rings or cylinder sealing surfaces
- B. A blocked heater core
- C. A loose steering rack
- D. A weak A/C clutch coil

**51.** An older automatic transmission shifts very harshly at light throttle. The vacuum modulator hose is disconnected. Why can this create harsh shifts?

- A. The brake booster applies extra assist
- B. The transmission interprets the missing vacuum as high engine load
- C. The thermostat closes the bypass
- D. The alternator reduces field current

**52.** An automatic transmission has all forward ranges but no reverse. Fluid level and shift linkage are correct. What type of fault is most likely?

- A. A failed radiator cap
- B. An open headlamp ground
- C. A worn front sway-bar link
- D. An internal reverse apply component or hydraulic circuit fault

**53.** Automatic transmission fluid becomes foamy and shift quality deteriorates after the unit was overfilled. What is the mechanism?

- A. The battery electrolyte becomes diluted
- B. The brake rotor becomes magnetized
- C. The thermostat opens too early
- D. Rotating parts can churn excess fluid and aerate it

**54.** Why should a transmission cooler and lines be cleaned or serviced after a major internal transmission failure?

- A. It changes wheel caster
- B. Cooler debris can contaminate the repaired transmission
- C. It raises engine compression
- D. It resets the ABS module

**55.** A manual transmission grinds only when shifting into second gear. The clutch releases fully and other gears shift smoothly. What is most likely?

- A. A weak radiator cap
- B. A shorted cooling-fan relay
- C. A worn or damaged second-gear synchronizer assembly
- D. A loose outer tie-rod end

**56.** A clutch pedal pulsates rhythmically as it is released, and inspection shows uneven flywheel surface condition. What should be suspected?

- A. Flywheel or clutch friction-surface runout or distortion
- B. A blocked evaporator drain
- C. A fully charged battery
- D. An open fuel-cap vent

**57.** A limited-slip differential chatters during tight turns immediately after lubricant service. No broken parts are visible. What should be checked first?

- A. The engine thermostat rating
- B. The headlamp relay contacts
- C. The brake booster vacuum hose
- D. Whether the specified lubricant and friction modifier were used

**58.** A front-wheel-drive vehicle vibrates mainly during acceleration but becomes smooth when coasting. The inner CV joint has noticeable wear. What is the likely source?

- A. The blower motor resistor
- B. The worn inner CV joint under torque load
- C. The fuel tank vent valve
- D. The rear brake adjuster

**59.** A universal joint makes a repeating squeak at very low speed, and rust-colored dust appears around a bearing cap. What does this indicate?

- A. A dry or failing universal-joint bearing
- B. A rich air-fuel mixture
- C. A stuck-open heater valve
- D. A low brake pedal from air

**60.** Why must a multi-piece driveshaft be assembled with correct phasing where specified?

- A. It changes ignition dwell
- B. It increases brake fluid pressure
- C. Incorrect phasing can create cyclic speed variation and vibration
- D. It lowers refrigerant charge

**61.** A replacement transmission fails soon after installation, and metallic debris is found in the cooler return line. What was likely overlooked?

- A. The windshield washer level
- B. The rear wheel toe setting
- C. The A/C blower switch
- D. Contamination remaining in the cooler and lines

**62.** A transfer case produces a rattling or slapping noise under load, and inspection shows excessive chain slack. What is the likely fault?

- A. A failing thermostat
- B. A stretched or worn transfer-case drive chain
- C. A loose battery terminal
- D. A glazed brake rotor

**63.** A differential was set with almost no gear backlash and now runs hot and whines. Why is the setup harmful?

- A. It lowers brake booster vacuum
- B. It increases injector pulse width
- C. Insufficient backlash can cause tight gear mesh and excess heat
- D. It opens the A/C expansion valve

**64.** A wheel bearing has excessive looseness on a vehicle that uses a wheel-mounted speed sensor. What additional symptom can the looseness cause?

- A. An erratic wheel-speed signal from changing sensor clearance
- B. Higher engine oil pressure
- C. A richer fuel mixture
- D. Lower heater outlet temperature

**65.** A vehicle shudders only as the torque converter clutch applies during steady cruise. The transmission otherwise shifts normally. What should be investigated?

- A. The radiator pressure cap
- B. The front strut bearing only
- C. The fuel-pump relay
- D. Torque-converter clutch friction, apply control, and fluid condition

**66.** During a steady pedal application, the brake pedal slowly sinks toward the floor without an external fluid leak. What is the most likely hydraulic cause?

- A. A restricted exhaust system
- B. A worn outer CV joint
- C. Internal bypass leakage in the master cylinder
- D. A shorted A/C clutch coil

**67.** One rear drum brake locks much earlier than the others. The shoe on that wheel is soaked with axle lubricant. What is the best explanation?

- A. Contaminated friction material is producing abnormal braking behavior
- B. The alternator belt is loose
- C. The throttle body is carboned
- D. The condenser fan is weak

**68.** Why is moisture contamination in conventional brake fluid undesirable?

- A. It increases tire tread depth
- B. It lowers the fluid's effective boiling resistance under heat
- C. It improves wheel bearing lubrication
- D. It raises battery reserve capacity

**69.** A front disc brake remains applied after the pedal is released. Opening the bleeder screw immediately frees the wheel. What should be suspected?

- A. The wheel bearing has too much grease
- B. Hydraulic pressure is being trapped upstream, often by a restricted hose
- C. The engine thermostat is stuck open
- D. The alternator diode is shorted

**70.** The parking brake lever reaches the end of its travel but the vehicle still rolls on a grade. What should be checked?

- A. The fuel injector pulse width
- B. The radiator cap seal
- C. Parking-brake cable adjustment and the parking-brake friction components
- D. The A/C low-pressure switch

**71.** An ABS warning lamp is on. Testing finds one wheel-speed sensor circuit electrically open. What is the correct interpretation?

- A. The engine will automatically overheat
- B. The transmission must slip in every gear
- C. The heater core must be restricted
- D. The open sensor circuit can disable normal ABS operation

**72.** Why must a brake rotor be compared with the manufacturer's minimum thickness specification before reuse?

- A. An undersize rotor has reduced heat capacity and strength
- B. Rotor thickness controls engine timing
- C. Rotor thickness changes battery voltage
- D. Rotor thickness meters refrigerant flow

**73.** A vehicle has poor steering-wheel return after turns. Tire pressure is correct and no steering components bind. Which alignment angle most directly promotes return-to-center?

- A. Excessive negative toe only
- B. Zero brake rotor runout
- C. Maximum wheel bearing preload
- D. Positive caster within the specified range

**74.** A vehicle wanders and requires constant steering correction. Inspection finds looseness in both outer tie-rod ends. What is the best conclusion?

- A. Steering linkage play is allowing uncontrolled toe changes
- B. The thermostat is too cold
- C. The starter relay is welded
- D. The A/C evaporator is frozen

**75.** A hydraulic power-steering pump growls and assist is erratic after a hose replacement. The reservoir contains foamy fluid. What should be done first?

- A. Increase tire camber
- B. Replace the catalytic converter
- C. Find air entry and bleed the steering system
- D. Reduce battery electrolyte level

**76.** A rack-and-pinion steering boot is filled with power-steering fluid. What does this most strongly indicate?

- A. The brake master cylinder is bypassing
- B. An internal steering-rack seal is leaking
- C. The fuel pump check valve is open
- D. The blower resistor is shorted

**77.** Both front tires show feathering across the tread, but camber wear is minimal. Which alignment setting should be checked closely?

- A. Refrigerant charge
- B. Ignition dwell
- C. Toe setting
- D. Engine oil pressure

**78.** A front tire is worn heavily along the inner shoulder while toe is within specification. Which alignment condition is most likely?

- A. A rich fuel mixture
- B. A slipping torque converter clutch
- C. A plugged heater core
- D. Excessive negative camber on that wheel

**79.** After one corner of a vehicle is pushed down and released, the body continues to oscillate several times. What component is most likely weak?

- A. The oxygen sensor heater
- B. The shock absorber or strut damping unit
- C. The fuel-pressure regulator
- D. The starter solenoid

**80.** A front suspension clunks over bumps, and the lower ball joint has measurable vertical play beyond specification. What is the correct repair direction?

- A. Service the worn ball joint according to procedure
- B. Raise the refrigerant charge
- C. Retard ignition timing
- D. Increase transmission line pressure

**81.** An A/C system has very low low-side pressure and unusually high high-side pressure. A temperature drop is found across a restricted metering device. What is most likely?

- A. A restriction at the expansion valve or fixed orifice
- B. A worn rear wheel bearing
- C. An open brake-light switch
- D. A rich idle mixture

**82.** With the A/C requested on, low-side and high-side pressures remain nearly equal and the compressor clutch never engages. What should be checked first?

- A. The differential backlash
- B. The brake shoe adjustment
- C. The compressor clutch control and enabling inputs
- D. The engine piston rings

**83.** The evaporator repeatedly ices over during extended operation. Airflow through the case is weak and the cabin filter is packed with debris. What is the likely cause?

- A. The ring gear backlash is excessive
- B. The brake booster check valve is stuck
- C. The alternator is overcharging
- D. Insufficient evaporator airflow is allowing the core to become too cold

**84.** Both heater hoses are hot, but the vents continue to blow cold air with the temperature control set to HOT. What should be inspected?

- A. The fuel-pump relay
- B. The blend door, actuator, or control linkage
- C. The rear axle pinion bearing
- D. The ABS wheel-speed sensor

**85.** An A/C compressor cycles on and off rapidly, and both system pressures are lower than expected. What condition is most likely?

- A. Low refrigerant charge
- B. Excessive wheel caster
- C. A restricted exhaust outlet
- D. A dragging parking brake

**86.** A/C cooling is acceptable at highway speed but becomes poor at idle. High-side pressure rises sharply at idle, and the condenser fan does not run. What is the likely cause?

- A. A weak starter motor
- B. A worn clutch disc
- C. Insufficient condenser airflow from the inoperative fan
- D. A clogged engine oil filter

**87.** What is the primary purpose of the receiver-drier or accumulator desiccant in an A/C system?

- A. Increase brake hydraulic pressure
- B. Absorb moisture from the refrigerant circuit
- C. Lubricate wheel bearings
- D. Set transmission gear ratio

**88.** What is the basic function of an A/C expansion valve or fixed orifice?

- A. Increase alternator field current
- B. Control engine oil pressure
- C. Adjust steering toe
- D. Meter refrigerant and create the evaporator pressure drop

**89.** Oily residue is concentrated around an A/C hose crimp, and electronic leak detection responds at the same point. What does the oil suggest?

- A. The brake fluid is boiling
- B. Refrigerant oil is escaping with refrigerant at a leak
- C. The differential is overfilled
- D. The battery is sulfated

**90.** A vacuum-operated HVAC mode system defaults to the defrost outlets whenever engine vacuum is lost. Why is this symptom useful?

- A. It proves the thermostat is stuck closed
- B. It proves the rear axle is binding
- C. It proves the brake pads are glazed
- D. It points to a vacuum supply, reservoir, hose, or control leak

**91.** A vehicle has an intermittent complaint and several diagnostic trouble codes. Why should freeze-frame and related scan data be saved before clearing memory?

- A. It preserves conditions present when the fault was detected
- B. It increases battery capacity
- C. It adjusts wheel alignment
- D. It removes moisture from refrigerant

**92.** Why is a high-impedance digital multimeter generally preferred when measuring voltage in sensitive electronic circuits?

- A. It supplies starter current
- B. It pressurizes the cooling system
- C. It draws little current and minimally disturbs the circuit
- D. It measures brake rotor thickness

**93.** Why must a conventional test light be used cautiously on modern module or sensor circuits?

- A. It changes tire toe
- B. Its current draw can overload sensitive electronic circuits
- C. It increases refrigerant charge
- D. It lowers engine compression

**94.** A service procedure identifies certain cylinder-head fasteners as torque-to-yield and specifies replacement. What should the technician do during reassembly?

- A. Install new specified fasteners and follow the tightening sequence
- B. Reuse the bolts without inspection
- C. Lubricate them with brake fluid
- D. Tighten them only by feel

**95.** Which measuring tool is best suited for checking brake-rotor lateral runout while the rotor is turned?

- A. A fuel-pressure gauge
- B. A scan-tool noid light
- C. A dial indicator mounted on a stable base
- D. A refrigerant charging scale

**96.** What additional information does a cylinder leak-down test provide beyond a basic compression test?

- A. It measures wheel alignment
- B. It checks alternator ripple
- C. It sets A/C clutch air gap
- D. It helps locate where cylinder pressure is escaping

**97.** Before raising one end of a vehicle with a floor jack, why should wheels remaining on the ground be chocked when appropriate?

- A. Chocks help prevent unintended vehicle movement during lifting
- B. They increase engine oil pressure
- C. They reduce refrigerant superheat
- D. They adjust steering caster

**98.** Battery electrolyte contacts a technician's skin during service. What is the best immediate response?

- A. Cover it with grease and continue working
- B. Apply gasoline to dissolve the acid
- C. Wait for the acid to evaporate
- D. Flush the affected area promptly with plenty of clean water

**99.** A diagnostic procedure in service information lists several tests in a specific order. Why should the technician generally follow that sequence?

- A. It guarantees every component will be replaced
- B. It eliminates the need for measurements
- C. The sequence is designed to isolate causes efficiently while protecting components
- D. It makes safety precautions optional

**100.** After repairing a steering or brake fault, what should be done before returning the fleet vehicle to normal service?

- A. Clear warning lamps without testing
- B. Perform a safety inspection and controlled verification of the repair
- C. Assume the repair is correct if parts were replaced
- D. Return the vehicle without checking fasteners

## **Practice Exam 10: Answer Key and Explanations**

**1. C** — Unexpected bypass air can raise idle speed even when the commanded throttle angle is correct. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis. Confirm the diagnosis before replacing parts.

**2. A** — The MAP reading should reflect the manifold vacuum measured mechanically, so the disagreement points to the sensor circuit. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**3. D** — A falsely lean feedback signal can make the PCM command unnecessary fuel once closed-loop correction begins. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis. Confirm the diagnosis before replacing parts.

**4. B** — A much smaller pressure drop means the tested injector is delivering less fuel than the others. The distractors describe different systems or failure patterns. Use the symptom pattern to select a

confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis. Confirm the diagnosis before replacing parts.

**5. D** — Visible smoke at the filler cap identifies an EVAP sealing leak at that location rather than elsewhere. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**6. A** — Carbon can reduce controlled idle airflow, and some electronic throttles require a relearn after cleaning or power loss. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**7. B** — Excessively retarded spark reduces useful cylinder pressure and can send more heat into the exhaust system. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis. Confirm the diagnosis before replacing parts.

**8. C** — Rapid residual-pressure loss can allow vapor formation or empty the fuel rail, creating a hot-restart delay. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis. Confirm the diagnosis before replacing parts.

**9. A** — Improvement on a substitute strategy suggests the original airflow input is inaccurate rather than the fallback value being the cause. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**10. C** — A valid knock signal without the expected timing response points to the control path rather than unrelated vehicle systems. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**11. B** — Rapid vacuum fluctuation at idle commonly follows irregular cylinder sealing, especially when a valve does not seat consistently. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**12. D** — Blocked crankcase ventilation allows blow-by gases to build pressure and force oil past gaskets or seals. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis. Confirm the diagnosis before replacing parts.

**13. A** — A vent valve that never opens prevents normal tank breathing and can create abnormal vapor-system pressure conditions. The distractors describe different systems or failure patterns. Use the

symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**14. B** — High pump current with low delivered pressure suggests the pump is heavily loaded, restricted, or mechanically deteriorating. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**15. C** — An open thermistor circuit is commonly interpreted as an unrealistically cold temperature because circuit resistance becomes very high. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**16. D** — Visible arcing shows secondary voltage escaping through damaged insulation instead of crossing the spark-plug gap. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis. Confirm the diagnosis before replacing parts.

**17. A** — A healthy catalyst normally dampens downstream oxygen changes, so closely matching waveforms can indicate reduced catalyst oxygen-storage capacity. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**18. B** — Restricted intake air can create an over-fueled combustion condition under load, producing soot, smoke, and reduced power. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**19. D** — With throttle and fuel pressure responding, the next useful evidence comes from spark quality and actual mixture behavior during acceleration. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**20. C** — A healthy cylinder causes a noticeable rpm loss when disabled; little change identifies a cylinder already producing weak contribution. The distractors describe different systems or failure patterns. Use the symptom pattern to select a confirming test, compare the result with service information, and replace parts only after measured evidence supports the diagnosis.

**21. C** — Normal battery supply and cable performance narrow the no-crank condition to the starter assembly or its high-current contacts. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**22. B** — Without field control, an otherwise connected alternator cannot develop normal charging output, so the control path must be tested. The distractors do not match the stated circuit behavior.

Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**23. A** — A slipping alternator belt can reduce charging speed and output at idle while improving as pulley speed increases. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**24. D** — A series circuit has only one current path, so the same current must pass through each component in sequence. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**25. C** — Parallel branches are connected across the same source points, so each branch sees essentially the full supply voltage. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**26. B** — Harness movement that immediately opens a fuse strongly suggests damaged insulation contacting ground and creating excessive current. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**27. D** — Power entering the switch but not leaving it under command identifies an open switching path when the downstream circuit is intact. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**28. A** — A good fuse has nearly the same potential on both sides because it contributes almost no resistance to the loaded circuit. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**29. C** — Excessive ground-side voltage drop means resistance is consuming available voltage before current can return to the battery. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**30. B** — Current through the relay coil creates magnetism that moves the contact mechanism and controls a separate circuit. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**31. D** — Simultaneous communication loss across powered modules points toward the common data network rather than independent module failures. The distractors do not match the stated circuit

behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**32. B** — An inductive clamp senses the magnetic field around a conductor, allowing current measurement without disconnecting a high-current cable. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**33. A** — A failed rectifier diode can allow alternating-current components to remain in the alternator output instead of producing smooth direct current. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**34. C** — Long periods of undercharge encourage hardened sulfate deposits on lead-acid battery plates, reducing effective active surface area. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**35. A** — Main circuit protection opens during severe overcurrent so large battery conductors are less likely to overheat and damage the harness. The distractors do not match the stated circuit behavior. Follow the circuit logically, verify power and ground under load, and use voltage-drop or signal testing before replacing parts that may only be reacting to an upstream fault.

**36. D** — Leak-down air heard at the exhaust path shows cylinder pressure escaping through an exhaust valve or seat. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure, temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**37. D** — Valve timing that shifts for the whole engine can lower effective compression across every cylinder at once. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure, temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**38. A** — A steady low vacuum reading after timing service can result when cam timing is installed late or off by a tooth. The alternatives do not create the same mechanical pattern. Interpret compression, leakage, pressure, temperature, noise, and visual evidence together, then compare the result with service information before authorizing disassembly or replacement.

**39. C** — Cold lubricant flows less easily, so system pressure can be higher until temperature lowers viscosity and resistance. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure, temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**40. B** — Insufficient oil supply can allow hydraulic valve-train components to lose their normal pressure support and become noisy. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure, temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**41. C** — Interference designs share physical space at different times, so lost cam timing can allow piston-to-valve contact. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure, temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**42. B** — The water-pump inlet operates on the suction side, so a weak hose or restriction can let the hose collapse under flow demand. The alternatives do not create the same mechanical pattern. Interpret compression, leakage, pressure, temperature, noise, and visual evidence together, then compare the result with service information before authorizing disassembly or replacement.

**43. D** — Cooling-system pressure raises the boiling point of the coolant mixture, increasing its margin against localized boiling under load. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure, temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**44. A** — Milky oil with coolant loss indicates water-based coolant is entering the lubrication system through an internal leak. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure, temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**45. A** — A weak thermal fan clutch reduces low-speed radiator airflow precisely when road-speed airflow is insufficient to cool the engine. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure, temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**46. B** — The weep hole provides a visible drain path when coolant passes the pump's internal seal, warning of seal failure. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure, temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**47. C** — A thermostat installed contrary to its designed orientation may sense or control coolant flow incorrectly and disrupt warm-up or cooling. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure,

temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**48. D** — A loose crank pulley allows repeated impact and movement at the crankshaft interface, which can enlarge or damage locating surfaces. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure, temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**49. C** — Crankshaft fore-and-aft movement is controlled by thrust surfaces, so excessive endplay points directly to that support area. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure, temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**50. A** — Oil burning under load plus compression that improves with added oil points toward ring and cylinder-wall sealing loss. The alternatives do not produce the same mechanical pattern described in the stem. Mechanical diagnosis is strongest when compression, leakage, pressure, temperature, noise, and visual evidence are interpreted together, then compared with service information before disassembly or replacement is authorized.

**51. B** — On vacuum-modulated units, low or missing modulator vacuum can command a high-load pressure condition and produce firm shifts. The other choices would usually create a different noise, engagement, shift, or load-related pattern. Drivetrain diagnosis should separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted component checks before major transmission or axle work begins.

**52. D** — Loss of only reverse with forward operation preserved points toward hardware or hydraulic elements unique to the reverse range. The other choices would usually create a different noise, engagement, shift, or load-related pattern. Drivetrain diagnosis should separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted component checks before major transmission or axle work begins.

**53. D** — Excess fluid can contact rotating assemblies, entrain air, and reduce the hydraulic system's ability to transmit stable pressure. The other choices would usually create a different noise, engagement, shift, or load-related pattern. Drivetrain diagnosis should separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted component checks before major transmission or axle work begins.

**54. B** — Failure debris can remain in the cooler circuit and circulate back into a replacement or rebuilt transmission after startup. The other choices would usually create a different noise, engagement, shift, or load-related pattern. Drivetrain diagnosis should separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted component checks before major transmission or axle work begins.

**55. C** — A single-gear clash with proper clutch release points toward the synchronizer components dedicated to that selected gear. The other choices would usually create a different noise, engagement, shift, or load-related pattern. Drivetrain diagnosis should separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted component checks before major transmission or axle work begins.

**56. A** — Uneven rotating friction surfaces can vary clutch contact force each revolution and transmit a repeating pulsation through the release system. The alternatives usually create different noise, engagement, shift, or load patterns. Separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted checks before major transmission or axle work.

**57. D** — Limited-slip clutch packs depend on the correct lubricant friction characteristics, and incorrect fluid can create stick-slip chatter during differentiation. The other choices would usually create a different noise, engagement, shift, or load-related pattern. Drivetrain diagnosis should separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted component checks before major transmission or axle work begins.

**58. B** — Inner CV joint wear commonly creates a shudder or vibration under torque because joint geometry changes as load is applied. The alternatives usually create different noise, engagement, shift, or load patterns. Separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted checks before major transmission or axle work.

**59. A** — Rust dust and cyclic squeaking at a joint cap are classic signs of lost lubrication and deteriorating needle bearings. The other choices would usually create a different noise, engagement, shift, or load-related pattern. Drivetrain diagnosis should separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted component checks before major transmission or axle work begins.

**60. C** — Universal joints create angular speed changes, and correct yoke phasing allows those variations to cancel rather than reinforce each other. The alternatives usually create different noise, engagement, shift, or load patterns. Separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted checks before major transmission or axle work.

**61. D** — Metal left in the cooler circuit can rapidly re-enter a fresh transmission and damage valves, pumps, bearings, and friction components. The alternatives usually create different noise, engagement, shift, or load patterns. Separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted checks before major transmission or axle work.

**62. B** — Excessive chain slack lets the transfer-case chain move, strike, or jump under torque rather than transferring power smoothly. The other choices would usually create a different noise, engagement, shift, or load-related pattern. Drivetrain diagnosis should separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted component checks before major transmission or axle work begins.

**63. C** — Ring-and-pinion gears need specified running clearance; too little backlash increases contact load, noise, temperature, and risk of gear damage. The other choices would usually create a different noise, engagement, shift, or load-related pattern. Drivetrain diagnosis should separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted component checks before major transmission or axle work begins.

**64. A** — Bearing movement can vary the sensor-to-target relationship and distort wheel-speed information even when the sensor itself is electrically sound. The other choices would usually create a different noise, engagement, shift, or load-related pattern. Drivetrain diagnosis should separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted component checks before major transmission or axle work begins.

**65. D** — A shudder that begins specifically with converter clutch apply focuses diagnosis on the clutch, apply circuit, and fluid friction characteristics. The alternatives usually create different noise, engagement, shift, or load patterns. Separate hydraulic, electrical, and mechanical causes with fluid inspection, scan data, road-test observations, and targeted checks before major transmission or axle work.

**66. C** — A pedal that sinks under constant force without external loss indicates fluid is bypassing internal master-cylinder sealing surfaces. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**67. A** — Oil contamination changes the friction characteristics of the brake lining and can cause grabbing, pulling, or unpredictable braking. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**68. B** — Brake fluid absorbs moisture over time, and the added water can boil during heavy braking, producing vapor and reduced hydraulic firmness. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**69. B** — If opening the bleeder releases the brake, mechanical binding is less likely than trapped hydraulic pressure in the apply circuit. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**70. C** — Excess lever travel with poor holding force points toward lost adjustment, stretched cables, or worn parking-brake friction surfaces. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**71. D** — ABS requires reliable wheel-speed information, so an open sensor circuit can set a fault and cause the controller to suspend anti-lock function. The distractors do not fit the pedal, tire, steering, or

wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**72. A** — Rotor thickness affects heat absorption and mechanical strength, so a rotor below its service limit may overheat or distort more readily. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**73. D** — Positive caster creates a self-centering effect as the steering axis trails the tire contact patch during forward travel. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**74. A** — Loose tie-rod ends let the front wheels change direction independently of precise steering input, creating wander and unstable alignment. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**75. C** — Foamy steering fluid means air is entrained in the hydraulic circuit, which causes noise, cavitation, and inconsistent assist. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**76. B** — Fluid inside the rack boot should not be present and usually indicates leakage past an internal rack seal. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**77. C** — Feathered tread blocks commonly develop when the tires scrub sideways from incorrect toe rather than from a pure camber condition. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**78. D** — Excessive negative camber loads the inner shoulder of the tire and can create localized wear even when toe is correct. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**79. B** — Repeated body oscillation after a single input shows insufficient damping, which is the primary job of shocks or struts. The distractors do not fit the pedal, tire, steering, or wheel-specific evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**80. A** — Excess ball-joint play can create noise, alignment change, and loss of wheel control, so the worn joint requires proper service. The distractors do not fit the pedal, tire, steering, or wheel-specific

evidence. Confirm the affected corner or circuit with inspection and measurement, then verify the repair under controlled conditions because these systems directly affect safety.

**81. A** — A metering restriction starves the evaporator while refrigerant backs up on the high side, creating the characteristic pressure split. The alternatives usually produce different pressure, temperature, airflow, or control symptoms. Compare both refrigerant pressures with component temperature, airflow, electrical commands, and actuator operation before opening the system or replacing parts.

**82. C** — Nearly equal static pressures with no compressor operation mean the system is not being pumped, so engagement and control must be diagnosed. The alternatives usually produce different pressure, temperature, airflow, or control symptoms. Compare both refrigerant pressures with component temperature, airflow, electrical commands, and actuator operation before opening the system or replacing parts.

**83. D** — Restricted cabin airflow reduces heat transfer into the evaporator, which can drive surface temperature low enough for moisture to freeze. The alternatives usually produce different pressure, temperature, airflow, or control symptoms. Compare both refrigerant pressures with component temperature, airflow, electrical commands, and actuator operation before opening the system or replacing parts.

**84. B** — Hot coolant at both heater hoses shows the core is receiving heat, so air-mixing control becomes the logical next area. The alternatives usually produce different pressure, temperature, airflow, or control symptoms. Compare both refrigerant pressures with component temperature, airflow, electrical commands, and actuator operation before opening the system or replacing parts.

**85. A** — Low refrigerant mass can lower suction pressure enough to trigger rapid low-pressure cycling while also reducing high-side pressure. The alternatives usually produce different pressure, temperature, airflow, or control symptoms. Compare both refrigerant pressures with component temperature, airflow, electrical commands, and actuator operation before opening the system or replacing parts. Confirm the diagnosis before replacing parts.

**86. C** — At idle the condenser depends heavily on fan airflow, so fan failure raises head pressure and reduces refrigerant heat rejection. The alternatives usually produce different pressure, temperature, airflow, or control symptoms. Compare both refrigerant pressures with component temperature, airflow, electrical commands, and actuator operation before opening the system or replacing parts.

**87. B** — Moisture inside an A/C system can form corrosive compounds or freeze at restrictions, so desiccant helps keep the refrigerant circuit dry. The alternatives usually produce different pressure, temperature, airflow, or control symptoms. Compare both refrigerant pressures with component temperature, airflow, electrical commands, and actuator operation before opening the system or replacing parts.

**88. D** — The metering device separates high and low sides by restricting refrigerant flow into the evaporator, enabling pressure and temperature reduction. The alternatives usually produce different

pressure, temperature, airflow, or control symptoms. Compare both refrigerant pressures with component temperature, airflow, electrical commands, and actuator operation before opening the system or replacing parts.

**89. B** — Refrigerant carries lubricant through the system, so oil accumulation at a joint can support other evidence of a refrigerant leak. The alternatives usually produce different pressure, temperature, airflow, or control symptoms. Compare both refrigerant pressures with component temperature, airflow, electrical commands, and actuator operation before opening the system or replacing parts.

**90. D** — Many vacuum HVAC systems use spring-loaded default positions, so loss of vacuum can drive the doors to a fail-safe defrost mode. The alternatives usually produce different pressure, temperature, airflow, or control symptoms. Compare both refrigerant pressures with component temperature, airflow, electrical commands, and actuator operation before opening the system or replacing parts.

**91. A** — Freeze-frame information can preserve load, speed, temperature, and other conditions that help reproduce an intermittent fault after the code is cleared. The alternatives skip an important safety or diagnostic control. Good fleet service protects the technician, preserves evidence, follows approved procedures, and verifies completed work before the vehicle returns to service.

**92. C** — High input impedance lets a meter observe circuit voltage without significantly loading the signal or altering the condition being measured. The alternatives skip an important safety or diagnostic control. Good fleet service protects the technician, preserves evidence, follows approved procedures, and verifies completed work before the vehicle returns to service.

**93. B** — Some electronic circuits are designed for very small currents, so a test light can load the circuit more than a digital meter. The alternatives skip an important safety or diagnostic control. Good fleet service protects the technician, preserves evidence, follows approved procedures, and verifies completed work before the vehicle returns to service.

**94. A** — Torque-to-yield fasteners are intentionally stretched during installation, so reuse may not reproduce the intended clamping load when replacement is specified. The alternatives skip an important safety or diagnostic control. Good fleet service protects the technician, preserves evidence, follows approved procedures, and verifies completed work before the vehicle returns to service.

**95. C** — A dial indicator measures small side-to-side movement as the rotor turns, making it appropriate for evaluating lateral runout against specification. The alternatives skip an important safety or diagnostic control. Good fleet service protects the technician, preserves evidence, follows approved procedures, and verifies completed work before the vehicle returns to service.

**96. D** — Leak-down testing pressurizes a cylinder and lets the technician listen or observe where air escapes, identifying the leakage path. The alternatives skip an important safety or diagnostic control. Good fleet service protects the technician, preserves evidence, follows approved procedures, and verifies completed work before the vehicle returns to service. Confirm the diagnosis before replacing parts.

**97. A** — Lifting changes the vehicle's contact and load points, so properly placed chocks help prevent rolling while the vehicle is being raised or supported. The alternatives skip an important safety or

diagnostic control. Good fleet service protects the technician, preserves evidence, follows approved procedures, and verifies completed work before the vehicle returns to service.

**98. D** — Battery electrolyte is corrosive, so rapid flushing with water limits contact time and reduces chemical injury while further first-aid procedures are followed. The alternatives skip an important safety or diagnostic control. Good fleet service protects the technician, preserves evidence, follows approved procedures, and verifies completed work before the vehicle returns to service.

**99. C** — Ordered diagnostic procedures often use one result to determine the next test, reducing unnecessary disassembly and preventing conclusions based on incomplete evidence. The alternatives skip an important safety or diagnostic control. Good fleet service protects the technician, preserves evidence, follows approved procedures, and verifies completed work before the vehicle returns to service.

**100. B** — Safety-critical repairs require confirmation that fasteners, fluid conditions, warning indicators, and system operation are correct before the vehicle is released. The alternatives skip an important safety or diagnostic control. Good fleet service protects the technician, preserves evidence, follows approved procedures, and verifies completed work before the vehicle returns to service.