

PRACTICE EXAM 7: ASE G1 SIMULATION — 55 QUESTIONS

1. A customer brings in a vehicle for an oil change and mentions a recall notice received in the mail. The technician looks up the VIN and confirms an open safety recall. Which of the following is the correct action?

- A. Inform the customer of the confirmed recall, note it on the work order, and recommend they contact the dealership for the free recall repair
- B. Perform the recall repair during the oil change visit and bill the customer directly
- C. Ignore the recall since it is not related to the customer's current service request
- D. Reset the recall notification through the scan tool so the customer is no longer alerted

2. A vehicle with a direct injection (GDI) engine has carbon buildup on the intake valves at 75,000 miles. The customer asks why this occurs on their vehicle but did not occur on their previous port fuelinjected vehicle. Which of the following is the correct explanation?

- A. GDI engines run at higher combustion temperatures that bake carbon onto all internal surfaces
- B. GDI engines use lowerquality fuel that leaves more deposits throughout the fuel system
- C. In a GDI engine, fuel is injected directly into the combustion chamber and does not wash over the intake valves, so fuel detergents cannot clean valve deposits the way they do in a portinjected engine
- D. Carbon buildup is caused by a defective PCV valve unique to GDI engines and is not a normal characteristic

3. A technician is preparing to perform maintenance on a hybrid electric vehicle (HEV). The highvoltage battery system operates at over 300 volts. Which of the following precautions is MOST critical before working near any highvoltage components?

- A. Wearing standard leather work gloves to insulate against electrical contact
- B. Disconnecting the 12volt auxiliary battery only, which deenergizes the entire highvoltage system

- C. Verifying that the engine coolant temperature is below 100°F to prevent thermal runaway
- D. Following the manufacturer's specific highvoltage disconnect procedure, wearing Class 0 lineman's gloves rated for high voltage, and verifying zero voltage with a CAT III rated meter before touching any orange-cabled component
4. A customer states the vehicle's "Service Engine Soon" light came on while driving on the highway. The vehicle is running normally with no drivability complaints. The technician scans the vehicle and finds DTC P0455 (EVAP System — Large Leak Detected). Which of the following is the MOST likely cause of this code?
- A. A ruptured fuel tank that is leaking liquid fuel
- B. A fuel cap that was left off, is loose, or has a damaged seal
- C. A cracked charcoal canister that has split in half
- D. A massive exhaust system leak near the catalytic converter
5. A technician is writing up a repair order. The customer states: "My car makes a weird noise when I turn." Which of the following is the BEST way to document this concern on the work order?
- A. Document the customer's exact words and ask clarifying questions to narrow the concern — such as which direction, what speed, what type of noise — and record the additional details
- B. Write "noise when turning — needs diagnosis" without further detail
- C. Interpret the complaint and write "CV axle replacement needed" based on the technician's initial assumption
- D. Write "customer hears noise" and begin disassembly immediately to find the source
6. During a road test after a repair, the technician notices that the vehicle's ABS activates on dry pavement at very low speed (under 10 mph) during a normal stop. Which of the following is the MOST likely cause?

- A. The brake pads were installed without antirattle clips, causing vibration the ABS interprets as wheel lock
- B. The ABS module is overreacting due to a software calibration error
- C. A damaged or contaminated wheel speed sensor tone ring producing an erratic signal that the ABS module interprets as wheel lockup
- D. New brake rotors that have not been properly bedded in, causing pulsation

7. A vehicle's automatic transmission fluid is cherry red, has no burnt odor, and is at the correct level on the dipstick. The customer complains that the transmission slips under hard acceleration in 3rd gear only. All other gears perform normally. Which of the following is the MOST likely cause?

- A. Contaminated transmission fluid that has lost its friction properties
- B. A faulty transmission range sensor not correctly identifying the gear position
- C. Low transmission fluid level causing inadequate pressure in all circuits
- D. A worn clutch pack or band specific to the 3rd gear apply circuit

8. A technician is performing a cooling system pressure test. When pressure is applied, the gauge slowly drops over 5 minutes. There are no visible external leaks. The technician then performs a combustion gas leak test on the coolant in the radiator neck. The test fluid changes color. What does this confirm?

- A. The radiator cap is leaking internally and needs to be replaced
- B. Combustion gases are entering the cooling system, indicating a blown head gasket, cracked head, or cracked block
- C. The coolant has become acidic and is chemically reacting with the test fluid
- D. The cooling system pressure loss is caused by air pockets trapped during a previous coolant service

9. A vehicle equipped with electric power steering (EPS) has a Technical Service Bulletin (TSB) for a steering assist software update. The customer has not reported any complaints. Which of the following is the correct action?

- A. Inform the customer of the available TSB and recommend the software update be performed, as TSBs address known issues that may affect the vehicle even if symptoms have not yet appeared
- B. Perform the update without informing the customer since TSBs are mandatory

- C. Ignore the TSB since the customer has no complaint and TSBs only apply to vehicles with symptoms
- D. Wait until the steering system fails completely before applying any updates

10. A technician measures the voltage at a headlight connector with the headlights on. The reading is 11.2 volts. Battery voltage with the engine running is 14.1 volts. What does the difference indicate?

- A. The headlight bulb has excessive filament resistance and should be replaced
- B. This is a normal voltage drop for a headlight circuit under load
- C. There is excessive resistance (2.9 volts dropped) in the headlight circuit wiring, connectors, switch, or ground that must be located and repaired
- D. The alternator is not producing sufficient voltage and needs to be tested

11. A vehicle has a grinding noise from one front wheel that increases with vehicle speed and changes pitch when the steering wheel is turned slightly left or right. Brake components have been inspected and are in good condition. Which of the following is the MOST likely cause?

- A. A warped brake rotor contacting the caliper bracket
- B. A loose wheel cover vibrating against the wheel rim
- C. A worn CV joint on the affected side
- D. A failing wheel bearing on the side where the noise changes when the steering is turned

12. A vehicle's rear drums have been removed for brake shoe replacement. The technician notices the wheel cylinder pistons have a slight weep of fluid around the dust boots. Which of the following is the correct action?

- A. Wipe the fluid off and reassemble — a slight weep is normal and will selfseal
- B. Replace or rebuild the wheel cylinder because any fluid leakage past the seals indicates seal failure
- C. Apply a thin film of brake fluid to the outside of the piston boots and reassemble
- D. Tighten the wheel cylinder bleeder screw to increase internal seal pressure

13. A vehicle's owner's manual specifies that the lug nuts be torqued to 100 ftlbs using a star (crisscross) pattern. A technician installs the wheel using an impact wrench and does not use a torque wrench. Which of the following problems could result?

- A. Warped brake rotors from uneven clamping force, broken wheel studs from overtorque, and wheel loosening from inconsistent torque
- B. No problems — impact wrenches provide consistent torque that matches manufacturer specifications
- C. The only risk is cosmetic damage to the wheel finish from the impact socket
- D. Undertorquing is impossible with an impact wrench because it always exceeds minimum specifications

14. A vehicle has both the ABS and traction control warning lights on. The scan tool shows DTC C0035 (Left Front Wheel Speed Sensor Circuit). The technician inspects the sensor and finds metal debris (brake dust and metal filings) packed around the sensor tip and tone ring. Which of the following is the correct repair?

- A. Replace the wheel speed sensor since contamination has permanently damaged the sensing element
- B. Replace the tone ring because the metal debris has magnetized the ring and corrupted the signal pattern
- C. Clean the sensor tip and tone ring thoroughly, clear the code, and road test to verify the signal has been restored before replacing any parts
- D. Replace the ABS module because repeated contamination codes indicate a module calibration failure

15. A customer's vehicle has a whining noise that is audible inside the cabin and increases with engine RPM. The noise is loudest when the headlights, blower motor, and rear defroster are all turned on. Which of the following is the MOST likely cause?

- A. A worn serpentine belt idler pulley bearing
- B. A failing blower motor bearing that resonates through the HVAC ductwork
- C. A loose exhaust heat shield vibrating at engine harmonic frequencies
- D. Alternator whine being introduced into the audio or electrical system due to a failing diode, poor ground, or insufficient filtering

16. A vehicle with a conventional automatic transmission has the gear selector indicator on the dashboard showing "D" (Drive) but the scan tool shows the transmission range sensor reading "Neutral." Which of the following symptoms would this mismatch MOST likely produce?

- A. The transmission shifting normally but with the check engine light illuminated
- B. The engine revving freely without the transmission engaging any forward gear, because the PCM believes the transmission is in Neutral
- C. The transmission locking in 3rd gear as a limp mode default
- D. No symptoms because the dashboard indicator and scan tool use separate circuits

17. A technician is installing a new set of brake pads. The new pads have a chamfer (beveled edge) on the leading and trailing edges of the friction material. What is the purpose of this chamfer?

- A. The chamfer reduces initial pad/rotor contact area to minimize brake squeal and noise during application
- B. The chamfer increases friction material surface area for improved braking performance
- C. The chamfer indicates the pads should be installed with the beveled edge facing the caliper piston
- D. The chamfer is a manufacturing defect that indicates the pads are substandard quality

18. A vehicle with an electronically controlled cooling fan has the fan running at full speed constantly — even with the engine cold and the A/C off. A scan tool shows the engine coolant temperature reading 40°F with the engine at operating temperature. Which of the following BEST explains the fan behavior?

- A. The fan motor relay has welded contacts and is stuck in the on position
- B. The fan motor has an internal short causing it to run regardless of the relay state
- C. The PCM has detected a coolant overtemperature condition and is commanding maximum fan speed
- D. The PCM interprets the 40°F reading as an ECT sensor circuit fault and commands the fan to full speed as a failsafe protection strategy

19. A technician discovers that a vehicle's engine air filter housing has been modified with a hole cut in the side to accommodate an aftermarket cold air intake tube. The modification has left the filter poorly sealed. Which of the following is the MOST likely consequence of this modification?

- A. Increased engine horsepower due to improved airflow volume
- B. Reduced fuel consumption from the leaner airfuel mixture
- C. Unfiltered air entering the engine, causing accelerated wear to the piston rings, cylinder walls, and other internal components
- D. Improved MAF sensor accuracy due to smoother airflow characteristics

20. A customer reports that the vehicle's key is difficult to turn in the ignition lock cylinder. The steering wheel lock does not seem to be engaged. Which of the following is the MOST likely cause?

- A. A faulty ignition switch electrical contact behind the lock cylinder
- B. A worn ignition lock cylinder with damaged wafers (tumblers) that are binding against the key
- C. A dead battery preventing the ignition lock solenoid from releasing
- D. A faulty antitheft module that is mechanically locking the cylinder

21. Technician A says that a loose or corroded battery cable connection can cause intermittent nostart complaints and erratic electrical system behavior. Technician B says that a loose battery cable connection will always be obvious because the engine will never start. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both Technician A and Technician B
- D. Neither Technician A nor Technician B

22. A technician is roadtesting a vehicle after replacing the front struts. At highway speed, the steering wheel oscillates (shakes side to side) rapidly when the vehicle hits a bump. The oscillation dampens after a few seconds. What is the MOST likely cause?

- A. The replacement struts are the wrong part number and have incorrect valving
- B. The front wheel alignment is severely out of specification
- C. The front tires are out of balance following the strut replacement
- D. The steering damper (if equipped) is worn, or the new struts have not adequately restored dampening of steering oscillation; a steering stabilizer may be needed on vehicles with recirculating ball steering

23. A vehicle with a distributorless ignition system (DIS) has a misfire that jumps between cylinders randomly. No single cylinder consistently misfires. The scan tool shows a P0300 (Random/Multiple Cylinder Misfire). Spark plugs and coil packs have been tested and are good. Fuel pressure is within specification. Which of the following is the MOST likely cause?

- A. A worn distributor cap and rotor (on a DISequipped vehicle)
- B. A single coil pack failure that is not being detected by the individual cylinder misfire monitors
- C. A vacuum leak, intake manifold gasket failure, or EGR valve stuck partially open causing a systemwide lean condition affecting all cylinders
- D. A faulty crankshaft position sensor that only fails at specific engine speeds

24. A vehicle's HVAC system blows air from the defrost vents only, regardless of the mode selection on the control panel. The blower motor works on all speeds. Which of the following is the MOST likely cause?

- A. A clogged evaporator core blocking airflow to the lower vents
- B. A failed mode door actuator or a vacuum supply leak (on vacuumoperated systems) causing the mode doors to default to the defrost position
- C. A blocked cabin air filter redirecting all air to the defrost outlets
- D. A faulty blower motor resistor that limits airflow direction based on speed setting

25. A technician is diagnosing a vehicle that runs rough and has a P0172 (System Too Rich — Bank 1) DTC. Shortterm fuel trim is 22% and longterm fuel trim is 15%. Which of the following would cause these readings?

- A. A leaking fuel injector, faulty fuel pressure regulator (stuck closed producing excessive pressure), or a saturated EVAP canister purging excessive fuel vapor into the intake
- B. A large vacuum leak downstream of the MAF sensor
- C. A contaminated MAF sensor reading lower than actual airflow
- D. A clogged fuel filter restricting fuel delivery volume

26. A vehicle's engine cranks and starts but immediately stalls when the key is released from the Start position to the Run position. It starts again if the key is held in the Start position. Which of the following is the MOST likely cause?

- A. A faulty starter motor solenoid that fails to disengage properly
- B. A weak fuel pump that can only maintain pressure while the key is in Start
- C. A flooded engine that requires constant cranking to clear excess fuel
- D. A faulty ignition switch that provides power in the Start position but has an open circuit in the Run position

27. A technician finds that a vehicle's serpentine belt has chunks of rubber missing from the rib side and the belt is partially shredded. Which of the following should the technician inspect BEFORE installing a new belt?

- A. The coolant level, since a failed water pump seal often damages the belt
- B. All pulleys and the tensioner for seized bearings, misalignment, or rough rotation — the condition that destroyed the old belt will destroy the new one if not corrected
- C. The engine oil level, since a rear main seal leak can contaminate the belt drive
- D. The spark plugs for signs of fouling from the belt material entering the intake

28. A customer states that the vehicle's cruise control works normally except that it will not resume the set speed after the brake pedal is pressed. It must be reset each time. The cruise control SET and CANCEL functions work correctly. Which of the following is the MOST likely cause?

- A. A faulty cruise control module that has lost its speed memory function
- B. An incorrect speedometer calibration that confuses the cruise control module
- C. A faulty brake pedal switch adjustment or resume switch in the cruise control stalk
- D. A worn throttle cable that cannot return to the previously set position

29. A vehicle has an intermittent electrical issue: sometimes the wipers, turn signals, and horn all stop working at the same time, then resume working after driving over a bump. Which component failure could affect ALL three of these systems simultaneously?

- A. The body control module (BCM) losing its programming intermittently
- B. The ignition switch failing to deliver power to the accessory circuit
- C. A faulty multifunction switch in the steering column
- D. A damaged clockspring (spiral cable) in the steering column that loses contact intermittently

30. A vehicle's battery is 2 years old. The customer states the battery goes dead if the vehicle sits for 4–5 days without being driven. A parasitic draw test shows a normal 35 milliamp draw. Which of the following is the MOST likely explanation?

- A. The battery has a weak cell that can sustain normal loads when driving but selfdischarges internally over several days of sitting
- B. The parasitic draw test is wrong because 35 milliamps would drain any battery in 4 days
- C. The alternator has a leaking diode that only draws current when the engine is off
- D. The vehicle's TPMS system is draining the battery by continuously communicating with the tire sensors

31. A technician is performing a brake rotor inspection using a dial indicator. The dial indicator is positioned against the rotor's friction surface while the rotor is spun by hand on the hub. The maximum indicator reading is 0.006 inches. The specification is 0.002 inches maximum lateral runout. What is the FIRST step before condemning the rotor?

- A. Machine the rotor on a bench lathe to correct the runout
- B. Remove the rotor, clean the hub mounting surface of rust and debris, reinstall the rotor in a different index position, and remeasure — hub surface contamination is the most common cause of excessive runout
- C. Replace the rotor immediately since the runout cannot be corrected
- D. Install new brake pads to see if the pulsation disappears with fresh friction material

32. A vehicle owner asks whether it is safe to continue driving on a tire that has been repaired with a plugonly repair (no internal patch). The plug was installed from the outside without dismounting the tire. Which of the following is the correct response?

- A. A plugonly repair is a permanent repair that meets all industry safety standards
- B. The tire is safe as long as the plug holds air pressure for more than 24 hours
- C. Plugonly repairs are acceptable for rear tires but not for front tires
- D. A plugonly repair does not seal the inner liner and is considered a temporary repair; the tire should be properly repaired with a combination plugpatch from the inside or replaced

33. A vehicle's A/C system has been serviced, and the technician needs to add PAG oil to compensate for oil lost during a component replacement. Which of the following is TRUE about A/C compressor oil?

- A. Any type of PAG oil can be used regardless of the compressor manufacturer's specification
- B. PAG oil and mineral oil can be mixed safely in any A/C system without consequence
- C. The specific viscosity of PAG oil (PAG 46, PAG 100, PAG 150) must match the manufacturer's specification for the compressor, and the wrong viscosity can cause compressor failure
- D. A/C compressor oil does not require replacement because it circulates indefinitely without degradation

34. A vehicle has DTC P0341 (Camshaft Position Sensor "A" Circuit Range/Performance — Bank 1). The engine starts and runs but has reduced power. Which of the following could set this code?

- A. A stretched timing chain that has altered the camshaftto crankshaft relationship beyond the PCM's expected tolerance, or a faulty CMP sensor providing an erratic signal
- B. A contaminated fuel injector that is not delivering the correct spray pattern
- C. An exhaust manifold leak near the upstream O2 sensor
- D. A worn serpentine belt that is slipping on the crankshaft pulley

35. A technician is performing a state safety inspection and notices that the vehicle's left rear tail light lens is cracked, and moisture has entered the housing. The bulb still illuminates. What is the correct action?

- A. Pass the inspection since the bulb is functional
- B. Fail the inspection; the cracked lens allows moisture intrusion that will cause bulb failure and is a safety deficiency that must be corrected
- C. Apply clear silicone sealant over the crack and pass the inspection
- D. Replace the bulb with a higherwattage unit to compensate for reduced light output through the cracked lens

36. Technician A says that on a vehicle with a CAN (Controller Area Network) bus communication system, a single shorted module can take down the entire communication network. Technician B says that CAN bus faults are always limited to the malfunctioning module and never affect other modules on the same network. Who is correct?

- A. Technician B only
- B. Both Technician A and Technician B
- C. Neither Technician A nor Technician B
- D. Technician A only

37. A vehicle's parking brake holds on a flat surface but does not hold on a moderate incline. The rear brake shoes have adequate material and the drums are within specification. Which of the following is the MOST likely cause?

- A. A leaking rear wheel cylinder reducing shoetodrum contact area
- B. Glazed rear brake shoes that provide insufficient friction at steeper angles
- C. A parking brake cable that is stretched, misadjusted, or has insufficient travel to fully apply the shoes against the drum
- D. Worn rear axle bearings allowing the drum to shift offcenter from the shoes

38. A vehicle equipped with an oil life monitoring system shows 15% oil life remaining. The customer asks whether the oil change can wait until the next visit in 2,000 miles. There are no unusual driving conditions. Which of the following is the correct recommendation?

- A. The oil change should be performed now; 15% remaining oil life indicates the oil's additive package and lubricating properties are nearly depleted, and delaying risks engine wear
- B. The oil change can safely wait for another 5,000 miles since the monitor is conservative
- C. The oil life monitor is unreliable and the customer should follow a strict 3,000mile interval instead
- D. Add one quart of fresh oil to extend the remaining oil life to 50%

39. A vehicle's front end makes a popping or snapping sound when the brakes are applied while the vehicle is moving slowly. The noise comes once per stop, not repetitively. Steering and suspension components have been inspected and found tight. Which of the following is the MOST likely cause?

- A. A worn front wheel bearing that shifts under the deceleration load
- B. A loose caliper mounting bracket or caliper hardware that shifts when the brakes are applied and the caliper loads against the rotor
- C. A warped brake rotor causing a single audible pulse per revolution
- D. A loose front wheel with undertorqued lug nuts

40. A customer brings in a vehicle for an electrical concern. The technician notices that a previous shop installed a 30amp fuse in a circuit that specifies a 15amp fuse. Which of the following is the correct action?

- A. Leave the 30amp fuse in place if the circuit is functioning normally
- B. Replace the 30amp fuse with a 20amp fuse as a safe compromise
- C. Add a second 15amp fuse in parallel with the 30amp fuse to provide correct protection
- D. Replace the fuse with the correct 15amp fuse and inspect the circuit for the reason the original fuse may have blown, since the oversized fuse was likely installed to mask a short circuit

41. A vehicle with a 4cylinder engine develops a steady, rhythmic tapping noise from the top of the engine at all RPM. The noise is consistent and does not change with engine temperature. Oil level and pressure are normal. Which of the following is the MOST likely cause?

- A. A worn main bearing producing a deep knock from the lower engine
- B. Piston slap from an oversized cylinder bore
- C. An exhaust leak at the exhaust manifold to cylinder head connection, or excessive valve lash from a worn camshaft lobe, collapsed lifter, or misadjusted valve clearance
- D. A worn timing chain tensioner that allows the chain to slap against the guide

42. A vehicle has been sitting for 8 months without being driven. The customer brings it in because the brakes feel rough and the vehicle shudders when stopping. Which of the following is the MOST likely cause?

- A. Surface rust and corrosion have formed on the brake rotors during extended storage, creating an uneven friction surface
- B. The brake fluid has fully evaporated from the master cylinder during the storage period
- C. The brake pads have bonded permanently to the rotors and cannot be separated
- D. The brake master cylinder has failed internally from lack of use

43. A technician notices that the engine oil on a vehicle is jet black after only 1,500 miles since the last oil change with conventional oil. There is no unusual engine noise or performance issue. Which of the following is the correct interpretation?

- A. The engine has a serious internal problem causing excessive carbon contamination of the oil
- B. Dark oil color indicates the detergent additives in the oil are working properly — suspending soot and combustion byproducts is what engine oil is designed to do
- C. The wrong oil filter was installed, allowing unfiltered oil to bypass into the system
- D. The oil was not actually changed at the last service and the mileage was recorded incorrectly

44. A technician is diagnosing a vehicle with a P0420 (Catalyst System Efficiency Below Threshold — Bank 1). The upstream O2 sensor shows normal richlean switching. The downstream O2 sensor shows active switching that mirrors the upstream sensor. What does the downstream sensor behavior confirm?

- A. The catalytic converter is operating at peak efficiency
- B. The downstream sensor has failed and is echoing the upstream sensor signal
- C. The exhaust system has a leak between the two sensors causing false readings
- D. The catalytic converter has lost its ability to store and release oxygen effectively, confirming reduced catalyst efficiency

45. A customer reports that the vehicle's heated seats only work intermittently — sometimes they heat normally, other times they do not produce heat at all. The control switch illuminates each time. Which of the following is the MOST likely cause?

- A. A faulty heated seat module with a corrupted memory chip
- B. A failing alternator that cannot supply adequate current for the seat heaters
- C. A broken wire or loose connector in the seat wiring harness, typically at the junction where the harness flexes under the seat as the seat is adjusted forward and back
- D. A defective cabin air temperature sensor causing the seat heater module to miscalculate the heating requirement

46. A vehicle's engine idles smoothly in Park and Neutral but develops a noticeable vibration when placed in Drive or Reverse with the foot on the brake. The vibration is felt through the steering wheel and seat. Which of the following is the MOST likely cause?

- A. A broken or collapsed engine or transmission mount that allows excessive drivetrain movement when the transmission loads the engine
- B. A misfiring cylinder that only occurs under the load of gear engagement
- C. A torque converter that is out of balance
- D. A worn crankshaft harmonic balancer that vibrates at idle under load

47. A vehicle's scan tool data shows that the intake air temperature (IAT) sensor reads 185°F while the ambient temperature outside is 75°F and the engine has only been running for 2 minutes. Which of the following is the MOST likely cause?

- A. This is normal because the IAT sensor is located in the intake manifold where it is heated by engine radiation
- B. The IAT sensor is located near a heat source, has a wiring fault, or has failed internally and is reading incorrectly high
- C. The engine's turbocharger is producing excessive heat that is raising the intake air temperature to this level
- D. The thermostat has stuck open, causing underhood temperatures to rise abnormally

48. Technician A says that a transmission fluid exchange (flush) machine should never be used on a vehicle with a known transmission problem because it can dislodge debris and worsen the condition. Technician B says that a transmission fluid exchange is always safe regardless of the transmission's condition. Who is correct?

- A. Technician B only
- B. Both Technician A and Technician B
- C. Neither Technician A nor Technician B
- D. Technician A only

49. A vehicle's front brake rotor has a hard spot (also called a cementite spot) visible as a dark, shiny, raised area on the friction surface. The customer reports a pulsation when braking. What is the correct action?

- A. Replace the rotor — hard spots are areas of metallurgical change that cannot be removed by machining and will quickly regenerate even if the rotor is resurfaced
- B. Machine the rotor to remove the hard spot and restore a smooth friction surface
- C. Apply a chemical treatment to dissolve the hard spot and restore the original rotor surface
- D. Install semimetallc brake pads that are harder than the cementite spot and will wear it down during normal braking

50. A vehicle owner brings in a vehicle and requests that the technician install customersupplied used parts (a used alternator from a salvage yard). The parts have no warranty. Which of the following is the correct professional response?

- A. Refuse to install any parts not sourced from the shop's approved supplier network
- B. Install the parts without any documentation since the customer assumes all risk
- C. Inform the customer that the shop can install customersupplied parts, but the labor warranty may be limited and the parts carry no warranty from the shop — document this clearly on the work order with the customer's acknowledgment
- D. Install the parts and provide the shop's standard warranty since the labor is the same regardless of parts source

51. A technician is diagnosing a vehicle with a rough idle that smooths out above 1,500 RPM. Disconnecting the PCV valve hose from the intake manifold causes the idle to improve significantly. Which of the following is the MOST likely cause?

- A. The PCV system is clogged, causing excessive crankcase pressure
- B. The PCV valve is stuck open, creating an excessive vacuum leak that is too large for the PCM to compensate for at idle, but is manageable at higher RPM where airflow is greater
- C. The PCV hose has collapsed internally, blocking all crankcase ventilation
- D. The PCV valve is stuck closed, preventing any crankcase vapors from being evacuated

52. A vehicle equipped with daytime running lights (DRLs) has headlights that are noticeably dim during daytime operation but illuminate at full brightness when the headlight switch is manually turned on. Which of the following is the correct explanation?

- A. The headlight bulbs are failing and require replacement
- B. The headlight circuit has excessive resistance that only affects the DRL mode
- C. The alternator output is insufficient during daytime operation
- D. This is normal — DRLs intentionally operate the headlights at reduced voltage or use a resistor to produce lowerintensity illumination, distinguishing them from the full headlight mode

53. A technician is replacing the thermostat on a vehicle that uses a gasket between the thermostat housing and the engine block. The old gasket leaves residue on the aluminum engine surface. Which of the following is the correct gasket surface preparation?

- A. Use a nonmetallic scraper or approved gasket removal chemical to clean the surface without gouging the soft aluminum, then verify the surface is flat and free of debris before installing the new gasket
- B. Use a steel wire wheel on a drill to quickly remove all gasket material
- C. Use coarse sandpaper (60grit) to sand the surface smooth
- D. Apply a thick layer of RTV sealant over the remaining old gasket material to fill any gaps

54. A vehicle has uneven braking — it stops effectively but the driver feels the vehicle nose-dive excessively during moderate braking. Brake components are in good condition. Which of the following is the MOST likely cause?

- A. Overtorqued caliper bracket bolts causing uneven pad contact
- B. Contaminated brake fluid with moisture reducing the boiling point
- C. Worn or weak front struts (shock absorbers) that cannot control the weight transfer during braking, allowing excessive front suspension dive
- D. Incorrect brake pad material that is too aggressive for the rotor surface

55. A vehicle's TPMS sensor has been replaced on one wheel. After installation, the TPMS warning light remains on. Which of the following is the MOST likely reason?

- A. The replacement sensor is defective and must be replaced again
- B. The new sensor must be programmed or relearned to the vehicle's TPMS module before it will be recognized
- C. The TPMS system requires a 50-mile drive cycle before accepting a new sensor
- D. The tire must be dismounted and the sensor reinstalled with the valve stem at the 12 o'clock position

Practice Exam 7: Answer Key and Full Explanations

1. A — Safety recalls are issued by the vehicle manufacturer under NHTSA authority and are repaired at no cost to the vehicle owner at authorized dealerships. An independent shop cannot perform a manufacturer recall — only a franchised dealer can. The technician's responsibility is to inform the customer of the confirmed open recall, document it on the work order, and recommend the customer contact their dealer to schedule the free repair.

2. C — In a port fuel-injected engine, fuel is sprayed onto the back of the intake valves, and the detergent additives in the fuel continuously wash away carbon deposits. In a GDI engine, fuel bypasses the intake valves entirely and is injected directly into the combustion chamber. Without the cleaning action of fuel flowing over the valves, PCV vapors and oil mist bake onto the valve surfaces over time, creating carbon buildup that can restrict airflow and cause misfires.

3. D — Hybrid and electric vehicle high-voltage systems operate at 100–800+ volts DC, which is immediately lethal on contact. The manufacturer's specific shutdown and isolation procedure must be followed precisely: the HV service disconnect must be pulled, Class 0 (or higher) insulating gloves must be worn, and a CAT III-rated voltmeter must confirm zero voltage at the high-voltage terminals before any work begins. Standard leather gloves and disconnecting only the 12V battery are completely inadequate — the HV battery retains its charge independently.

4. B — DTC P0455 specifically indicates a large leak in the EVAP system, and by far the most common cause is a fuel cap that was not tightened, was left off entirely, or has a cracked or deteriorated seal. The EVAP system is sealed, and a missing or loose cap creates a large opening that the system immediately detects during its self-test. Replacing or properly tightening the cap and clearing the code resolves the issue in the majority of cases.

5. A — Accurate work order documentation begins with recording the customer's exact words, then asking targeted follow-up questions to narrow the concern. "What type of noise — clicking, grinding, squealing? Left turns, right turns, or both? At what speed? Is it constant or intermittent?" This information guides the technician's diagnostic approach and creates a record that protects both the customer and the shop. Writing assumptions or vague descriptions leads to misdiagnosis and customer dissatisfaction.

6. C — ABS activation at very low speed on dry pavement indicates the ABS module is receiving a false wheel-speed signal that it interprets as an impending wheel lockup. A damaged, cracked, or contaminated tone ring (reluctor ring) produces an irregular signal pattern — missing teeth, bent teeth, or debris between teeth create signal gaps that mimic rapid deceleration. The module responds correctly to the bad data by activating ABS, even though no actual wheel lockup is occurring.

7. D — Cherry-red, clean fluid at the correct level eliminates fluid condition and level as factors. A slip isolated to a single gear while all other gears perform normally points to a failure in the specific clutch pack or band that applies during that gear. Each gear engagement uses a unique combination of apply devices — when one clutch pack develops worn friction material, burned steels, or leaking seals, only that specific gear is affected while the others continue to function normally.

8. B — A combustion gas leak test (block test) uses a chemical reagent fluid that changes color in the presence of hydrocarbons (combustion gases). When the test fluid, held over the radiator neck with the engine running, changes from its original color (typically blue) to a different color (typically yellow or green), it confirms that combustion gases are entering the cooling system. The only path for combustion gases to reach the coolant is through a compromised head gasket, cracked cylinder head, or cracked engine block.

9. A — Technical Service Bulletins address known issues identified by the manufacturer that may not yet have caused symptoms but represent design improvements, software updates, or revised service procedures. Informing the customer and recommending the update is the professional standard because TSBs often prevent future failures that would be more costly to repair. TSBs are not mandatory recalls, so the customer can decline, but they should be made aware of the available improvement.

10. C — A headlight receiving only 11.2 volts when the system produces 14.1 volts means 2.9 volts are being consumed by resistance somewhere in the circuit between the battery and the bulb. The maximum acceptable voltage drop for an entire headlight circuit is approximately 0.5–0.7 volts. A 2.9-volt drop reduces the bulb's light output by roughly 30–40% and indicates significant resistance in the switch, relay contacts, wiring connectors, or ground connection that must be located with point-to-point voltage drop testing.

11. D — A speed-dependent grinding noise from a front wheel that changes pitch when the steering is turned is the textbook symptom of a failing wheel bearing. Turning the steering shifts the vehicle's weight and changes the load angle on the bearings — a worn bearing's noise will get louder when the load increases on the affected side and quieter when the load shifts away. This load-change noise characteristic distinguishes wheel bearing noise from brake noise, tire noise, and CV joint noise.

12. B — Any visible brake fluid leakage past a wheel cylinder piston seal — even a slight weep — indicates the internal cup seals have failed. Brake hydraulic components are safety-critical, and a weeping seal today becomes a full leak under the higher pressures of panic braking. The wheel cylinder must be replaced or rebuilt with a new seal kit before reassembly. "It will self-seal" is never an acceptable approach to a brake hydraulic leak.

13. A — An impact wrench delivers inconsistent torque that varies with air pressure, socket condition, and trigger time. Over-torquing wheel lugs distorts the brake rotor by pulling it unevenly against the hub, creating lateral runout that causes pedal pulsation. Under-torquing allows the wheel to loosen progressively during driving, which can result in wheel separation — a catastrophic failure. The only way to achieve consistent, correct clamping force is to final-torque every lug nut with a calibrated torque wrench in the specified star pattern.

14. C — Before condemning any component, the technician should attempt the least invasive and least expensive corrective action first. Metal debris on the sensor tip and tone ring disrupts the magnetic field pattern that generates the wheel speed signal. Cleaning both surfaces removes the contamination and often restores normal signal quality. If the code returns after cleaning and road testing, then sensor or tone ring replacement is warranted — but many times, a thorough cleaning is the complete repair.

15. D — A whining noise that correlates with engine RPM AND increases with electrical load points to the alternator as the source, not as a belt or bearing noise, but as an electrical noise being introduced into the vehicle's wiring. When one or more rectifier diodes fail, they allow AC ripple to leak into the DC system. This AC component produces an audible whine through the radio speakers or can be heard through other electrical circuits. The noise intensifies with electrical load because the alternator works harder and produces more ripple.

16. B — The transmission range sensor (TRS) tells the PCM which gear position the driver has selected. If the TRS reports "Neutral" while the driver has selected "Drive," the PCM believes the transmission is in Neutral and does not command any forward gear engagement. The result is the engine revving freely with no forward motion — the transmission is not mechanically broken, but the PCM is not commanding it to engage because it has received incorrect position data.

17. A — The chamfer on brake pad friction material reduces the initial contact area between the pad edge and the rotor surface. Without a chamfer, the sharp leading edge of the pad digs into the rotor like a reed on a musical instrument, generating a high-frequency vibration that produces brake squeal. The chamfer creates a gradual pad-to-rotor engagement that dampens this vibration. Most quality replacement pads include factory-applied chamfers; if not, the technician should create them with a file.

18. D — A -40°F reading from the ECT sensor with a warm engine is the classic open-circuit reading of an NTC thermistor (maximum resistance = coldest possible value). The PCM recognizes this as an implausible sensor reading and activates a failsafe strategy: it commands the cooling fan to full speed as a protective measure against potential overheating, since it cannot determine the actual engine temperature. This is designed behavior — the PCM is protecting the engine by assuming the worst-case scenario.

19. C — The engine air filter's purpose is to remove airborne particles — dust, sand, pollen, and debris — before they enter the engine. When the filter housing is compromised by a poorly sealed modification, unfiltered air bypasses the filter element and carries abrasive particles directly into the intake tract. These particles act as an internal abrasive compound, accelerating wear on the MAF sensor element, throttle plate, piston rings, cylinder walls, and valve stems. The damage is cumulative and irreversible.

20. B — The ignition lock cylinder contains spring-loaded wafers (tumblers) that must align with the key's cut pattern to allow rotation. Over time and use, these wafers wear, break, or develop burrs that cause them to bind against the key instead of aligning smoothly. The result is a key that is progressively harder to turn, even though the steering wheel lock is not engaged. Replacing the lock cylinder and rekeying (or using a new key) restores normal operation.

21. A — Technician A is correct. A loose or corroded battery cable connection creates intermittent high-resistance contact. Under low current draw (accessories, lights), the connection may pass enough current to function. Under high current draw (cranking), the resistance causes a voltage drop that prevents the starter from operating. This intermittent nature makes the problem maddening to diagnose because the vehicle may start 9 out of 10 times. Technician B is wrong — intermittent connections do NOT always produce a consistent no-start.

22. D — Steering oscillation (shimmy) triggered by a bump at highway speed — that dampens after a few seconds — is called "death wobble" or steering shimmy on vehicles with recirculating ball steering, and is caused by insufficient steering dampening. When new struts are installed, they restore suspension control but do not address worn steering dampeners or accumulated play in steering linkage that allows the oscillation to initiate. A dedicated steering dampener (stabilizer) absorbs these impulses and prevents the oscillation from building.

23. C — With spark plugs, coil packs, and fuel pressure confirmed good, the P0300 random misfire code points to a condition affecting all cylinders equally rather than any single ignition or fuel component. A vacuum leak, failed intake manifold gasket, or partially stuck EGR valve introduces unmetered air that leans out the entire intake charge across all cylinders. The lean condition causes random misfires because no single cylinder is consistently affected — the misfires shift based on slight variations in air distribution among the cylinders.

24. B — HVAC systems use mode doors to direct airflow to different vent outlets (face, floor, defrost). On vacuum-operated systems, loss of vacuum supply (from a cracked hose, disconnected line, or leaking check valve) causes all mode doors to default to the defrost position — this is a designed failsafe to

ensure windshield visibility is maintained. On electrically actuated systems, a failed mode door actuator motor produces the same single-vent-position symptom because the door cannot physically move.

25. A — Negative fuel trim values mean the PCM is subtracting fuel from its base calculation to compensate for an overly rich mixture. A STFT of -22% and LTFT of -15% represent a massive rich correction. Causes of genuine rich conditions include leaking fuel injectors (delivering fuel when commanded off), a fuel pressure regulator stuck closed (raising rail pressure above specification), or a saturated EVAP canister purging excessive fuel vapors into the intake. Vacuum leaks and dirty MAF sensors cause lean conditions (positive fuel trims), not rich.

26. D — The ignition switch has two powered positions relevant to engine operation: Start (which engages the starter and powers fuel/ignition) and Run (which maintains fuel/ignition after the key is released). If the Run position contacts inside the switch have failed or burned, power is available during cranking but drops out when the key returns to Run, killing the ignition system, fuel system, or both. The engine dies instantly each time the key is released.

27. B — A catastrophically failed belt is a symptom, not a root cause. Something caused the belt to shred — a seized idler pulley bearing, a frozen tensioner, a misaligned accessory, or a pulley with a broken flange. Installing a new belt over the same failed component will destroy it within minutes or hours. Every pulley must be spun by hand to check for roughness, wobble, or seizure, and the tensioner must be verified for proper spring tension and smooth pivot before the new belt is installed.

28. C — The cruise control RESUME function relies on a dedicated switch contact in the cruise control stalk or steering wheel button, and on the brake pedal switch to properly reset after the brakes are released. If the brake pedal switch is misadjusted so that it does not fully release (or releases late), the system reads a continuous brake-applied signal and will not allow resume — the driver must SET a new speed each time. Alternatively, a faulty resume switch contact that does not close when pressed produces the same symptom.

29. D — The clockspring (spiral cable) is a coiled ribbon cable inside the steering column that maintains electrical connections between the rotating steering wheel components and the fixed vehicle wiring. The wipers, turn signals, and horn are all controlled through stalks and buttons that route their signals through the clockspring. When the clockspring develops an intermittent internal break — often from fatigue at a flex point — all three systems lose their connection simultaneously, and road vibrations can temporarily restore or break the contact.

30. A — A parasitic draw of 35 milliamps is within the normal acceptable range (25–85 mA for modern vehicles). At 35 mA, a healthy battery should sustain charge for 3–4 weeks, not just 4–5 days. If the draw is normal but the battery drains in less than a week, the battery itself has a weak or failing cell that self-discharges internally. The cell may function adequately when the alternator maintains charge during driving but cannot hold voltage during extended rest periods.

31. B — Excessive lateral runout measured on a rotor mounted on the hub is frequently caused by rust, corrosion, or debris trapped between the rotor hat and the hub flange — not by a defective rotor. Even 0.002 inches of contamination between the two surfaces induces measurable runout. Removing the rotor, cleaning both the hub face and rotor mounting surface with a wire brush or abrasive pad, and reinstalling the rotor in a different rotational position on the hub often eliminates the runout entirely without any machining.

32. D — The Rubber Manufacturers Association (now USTMA) and the Tire Industry Association both state that a plug-only repair inserted from the outside without dismounting the tire is a temporary emergency repair only. It does not seal the inner liner, cannot be inspected for internal damage, and can work loose over time. The industry-standard permanent repair is a combination plug-patch (mushroom patch) applied from inside the tire after a full internal inspection. Customers should be informed that the tire needs proper repair or replacement.

33. C — PAG (polyalkylene glycol) compressor oil comes in multiple viscosity grades — PAG 46, PAG 100, and PAG 150 — and each compressor manufacturer specifies the exact viscosity required for proper lubrication and oil return. Using the wrong viscosity can cause insufficient lubrication at operating speed (too thin) or oil logging in the evaporator and reduced cooling (too thick). Additionally, PAG and mineral oil are chemically incompatible and must never be mixed, as the resulting mixture loses its lubricating properties.

34. A — DTC P0341 indicates the CMP sensor signal does not correlate with the expected camshaft position relative to the crankshaft. A timing chain that has stretched beyond the PCM's tolerance shifts the camshaft timing relative to the crankshaft, creating a signal offset that the PCM detects as out-of-range. A faulty CMP sensor producing an erratic or delayed signal generates the same code. Both conditions affect the PCM's ability to accurately sequence fuel injection and ignition timing, reducing engine power.

35. B — A cracked tail light lens is a safety deficiency that allows moisture to enter the housing, corrode the bulb socket and contacts, and eventually cause bulb failure — often at the worst possible time (nighttime, rain). Most state safety inspection programs require exterior lighting lenses to be intact and

free of cracks or breaks that could impair light output or allow moisture intrusion. The bulb working today does not change the fact that the compromised lens will cause failure in the near future.

36. D — Technician A is correct. CAN bus is a shared communication network where all modules transmit and receive data on the same pair of wires. If a single module develops a shorted output driver that pulls the bus voltage to ground or to supply continuously, it jams the entire communication bus — preventing ALL modules on that network from communicating. This is why a single CAN bus fault can cause multiple seemingly unrelated warning lights, no-communication scan tool errors, and widespread system failures.

37. C — The parking brake system applies the rear brake shoes through mechanical cables, not hydraulic pressure. If the cables are stretched, improperly adjusted, or have insufficient travel due to cable housing corrosion or a misadjusted equalizer, the shoes cannot be pressed firmly enough against the drums to generate the friction needed to hold the vehicle on an incline. Readjusting the cable at the equalizer or replacing stretched cables restores the mechanical advantage needed for full application.

38. A — Oil life monitoring systems use algorithms based on engine RPM, temperature, load, and operating time to calculate the remaining useful life of the oil's additive package. At 15% remaining, the oil is near the end of its protective capacity — the detergents, anti-wear additives, and viscosity modifiers that protect the engine are nearly exhausted. Pushing another 2,000 miles risks running below 0%, which means the oil can no longer adequately protect bearing surfaces, control soot, or resist thermal breakdown.

39. B — A single pop or snap during braking — not repetitive — suggests a component is shifting once under the deceleration load rather than a rotating part contacting something each revolution. A loose caliper bracket bolt, worn caliper bracket bushing, or missing anti-rattle hardware allows the caliper assembly to shift slightly when brake torque loads the caliper against the rotor. The caliper snaps into its loaded position, producing one audible pop, and then holds steady for the remainder of the stop.

40. D — A fuse is a deliberate weak point designed to sacrifice itself to protect the wiring from overheating and causing a fire. A 30-amp fuse in a 15-amp circuit allows twice the design current to flow through wiring rated for only 15 amps. If a short circuit occurs, the wiring will overheat and potentially ignite before the oversized fuse blows. The correct fuse must be installed immediately, and the circuit must be inspected to find why the original 15-amp fuse was replaced — usually to mask a short circuit that kept blowing the correct fuse.

41. C — A steady, rhythmic tapping from the top of the engine that tracks with RPM and does not change with temperature or oil pressure is characteristic of a valve train noise. An exhaust leak at the manifold gasket produces a tapping that mimics valve noise because exhaust pulses escape in the same rhythm as the firing order. Excessive valve lash — from a worn cam lobe, collapsed lifter, or

misadjusted clearance — produces the same rhythmic tap as the rocker arm strikes the valve stem across the excess gap.

42. A — Brake rotors are bare cast iron that rapidly develops a layer of surface rust when exposed to moisture during extended storage. This rust creates an uneven, rough friction surface that produces a shudder or roughness during braking until the pads wear through the oxidation layer and restore smooth rotor contact. In most cases, moderate driving with several gentle brake applications wears the rust away within a few miles. If the rust is severe or has caused pitting, the rotors may need machining or replacement.

43. B — Modern engine oils are formulated with detergent and dispersant additives specifically designed to hold soot, carbon particles, and combustion byproducts in suspension — preventing them from depositing on engine surfaces. Oil that turns dark quickly is doing its job: it is cleaning the engine and carrying contaminants in suspension until the oil filter captures them or the oil is changed. Clear oil after thousands of miles would actually be more concerning, as it could indicate the detergent additives have failed.

44. D — The downstream O₂ sensor's primary function is to monitor catalytic converter efficiency. In a healthy system, the converter stores and releases oxygen, which smooths out the rich-lean fluctuations from the engine — the downstream sensor should show a relatively flat, stable reading. When the downstream sensor's switching pattern mirrors the upstream sensor, it means the converter is no longer buffering oxygen — the exhaust gas composition passes through unchanged. This confirms the converter has lost catalytic activity.

45. C — Intermittent heated seat operation with a functioning control switch points to an inconsistent electrical connection in the seat wiring. Seat wiring harnesses flex repeatedly at the point where they transition from the vehicle floor to the underside of the seat frame as the seat is adjusted. This constant flexing fatigues the wire conductors, eventually causing them to break internally while the insulation remains intact. The broken conductor makes and loses contact with seat movement, producing the intermittent symptom.

46. A — An engine and transmission that idle smoothly in Park/Neutral but vibrate noticeably when placed in Drive or Reverse are experiencing drivetrain loading — the torque converter applies a load to the engine that slightly reduces RPM and increases the forces transmitted through the drivetrain mounts. If an engine mount or transmission mount has collapsed, torn, or separated, it can no longer absorb these forces, and the drivetrain movement is transmitted directly into the vehicle structure as a vibration felt through the steering wheel and seat.

47. B — An IAT reading of 185°F after only 2 minutes of operation on a 75°F day is implausible under any normal operating condition. The intake air temperature should be near ambient at startup and rise gradually as underhood temperatures increase — but not to 185°F that quickly. The sensor is likely located too close to an exhaust manifold heat source, has a wiring fault (short to voltage or high resistance), or has failed internally. Comparing the scan tool IAT reading to an actual measured temperature at the sensor confirms the discrepancy.

48. D — Technician A is correct. A transmission fluid exchange machine pushes new fluid through the entire system under pressure, which can dislodge accumulated debris, clutch material, and sediment from internal passages, filters, and valve body bores. In a transmission that is already operating with marginal clutch material or has accumulated significant debris, mobilizing this material can clog valve body passages, damage seals, and cause shifts to worsen or the transmission to fail completely. Fluid exchange should only be performed on transmissions that are operating normally as a maintenance procedure.

49. A — Hard spots (cementite) form when localized areas of the cast iron rotor are superheated and then cooled rapidly, creating a metallurgical change to an extremely hard iron carbide structure. These spots are harder than the surrounding rotor material and resist machining — if a lathe does cut through them, they typically regenerate within a few thousand miles because the altered metallurgy remains below the surface. The only effective solution is rotor replacement.

50. C — Installing customer-supplied parts is a common situation that requires clear communication and documentation. The shop should inform the customer that the parts carry no warranty from the shop (since the shop did not source them and cannot verify their quality), and the labor warranty may be limited if a customer-supplied part causes a repeat failure. This agreement must be documented on the work order with the customer's signature acknowledging the terms. This protects both the customer and the shop.

51. B — Disconnecting the PCV hose removes the vacuum leak created by the PCV system, and the idle improves — confirming the PCV system is the source of the rough idle. A PCV valve stuck in the fully open position creates an excessively large vacuum leak that draws too much air into the intake at idle. The PCM's idle speed control cannot compensate for this volume of unmetered air at low RPM. Above 1,500 RPM, the total airflow volume is large enough that the PCV leak becomes a smaller percentage of total airflow and no longer affects engine operation.

52. D — Daytime running lights are designed to make the vehicle more visible to other drivers during daylight hours, not to illuminate the road. DRL systems intentionally operate the headlights at reduced intensity — typically through a resistor that drops voltage to the bulbs, by operating high beams at

reduced voltage, or by using dedicated lower-power DRL bulbs. This reduced intensity is by design and is completely normal; full headlight brightness is only needed for nighttime road illumination.

53. A — Aluminum is a soft metal that is easily gouged, scratched, or scored by aggressive removal methods. A steel wire wheel, coarse sandpaper, or a metal scraper will dig into the aluminum surface, creating low spots that prevent the new gasket from sealing evenly. The correct approach is a plastic or composite scraper combined with a chemical gasket remover that dissolves the old gasket material without attacking the aluminum. The final surface should be smooth, flat, and free of gouges before the new gasket is installed.

54. C — Excessive nose-dive during braking is a suspension control problem, not a brake problem. The front struts (or shock absorbers) control the rate at which the suspension compresses during weight transfer under braking. When the struts are worn and can no longer resist compression forces, the front of the vehicle dives excessively, shifting too much weight forward. This increases stopping distance by unloading the rear tires and can cause premature front brake wear. New struts restore proper dive control.

55. B — TPMS sensors transmit a unique radio frequency ID code that the TPMS module uses to identify which sensor belongs to which wheel position. A new sensor has a different ID code than the original, and the TPMS module does not automatically recognize it. The sensor must be programmed (learned) to the vehicle's TPMS module using a TPMS activation tool and/or a scan tool-initiated learn procedure. Until the relearn is completed, the module cannot identify the new sensor and the warning light remains illuminated.