PRACTICE EXAM 8: ASE A2 SIMULATION (50 QUESTIONS)

1. A vehicle equipped with a five-speed automatic transmission has the following complaint: smooth, normal shifts in all forward gears during city driving, but during highway cruising at 70 mph in 5th gear with TCC locked, the driver feels a rhythmic pulsation every 3-4 seconds. Decelerating to 55 mph in 4th gear eliminates the pulsation entirely. Which of the following is the MOST LIKELY cause?

A. A worn 5th gear clutch pack that slips rhythmically at the sustained torque load of highway cruising

B. An unbalanced driveshaft that resonates specifically at the rotational speed produced at 70 mph in 5th

C. A faulty output speed sensor that produces a cyclic signal error at the specific frequency generated at 70 mph

D. A torque converter clutch with a localized worn spot that produces a pulsation once per converter revolution at TCC lockup

2. A technician performs a stall test on a vehicle with an automatic transmission. The engine reaches the specified stall RPM, and the vehicle does not creep or move. During the test, the technician notices a strong burnt smell coming from the transmission area. The fluid level is correct and the fluid appears dark brown. What does the burnt smell during the stall test indicate?

A. Normal heating of the transmission fluid that occurs during every stall test due to converter heat generation

B. The transmission has pre-existing internal damage, and the stall test is generating extreme heat in already degraded fluid

C. The torque converter stator is seized, causing fluid to overheat during the stall condition specifically

D. The front pump seal is leaking fluid onto the exhaust, and the burning smell is from the fluid contacting hot exhaust surfaces

3. Technician A says that a transmission with a one-way clutch failure in the 1st gear circuit will always produce a no-move condition in 1st gear. Technician B says that a one-way clutch failure in the 1st gear circuit may still allow the vehicle to move in 1st gear, but it will have no engine braking in manual low. Who is correct?

A. Technician A only

B. Neither Technician A nor Technician B

C. Technician B only

D. Both Technician A and Technician B

4. A vehicle with a rear-wheel-drive automatic transmission has a vibration that increases with vehicle speed and is present in Drive, Neutral, and when coasting with the engine off. The vibration disappears when the vehicle is stationary. Rotating the tires to different positions does not change the vibration. The driveshaft was recently replaced. Which of the following is the MOST LIKELY cause?

A. The replacement driveshaft is out of balance or was installed with incorrect phasing of the U-joint yokes

B. A worn torque converter bearing that produces vibration proportional to road speed in all conditions

C. An internally unbalanced planetary gear set that vibrates whenever the output shaft is rotating at speed

D. A worn wheel bearing on the rear axle that was not affected by the tire rotation because it is axle-mounted

5. A customer complains that the automatic transmission "clunks" when the vehicle transitions from coasting to acceleration — for example, when the driver lifts off the throttle momentarily and then reapplies it during highway driving. The clunk occurs regardless of which gear the transmission is in. There are no DTCs stored. All of the following could cause this symptom EXCEPT:

A. Excessive backlash in the differential ring and pinion gear set from worn gear teeth surfaces

B. A worn universal joint on the driveshaft with play that takes up during the torque direction change

C. A loose or worn engine/transmission mount that allows drivetrain movement during torque reversal

D. A slipping forward clutch that momentarily releases and re-engages during the throttle transition

6. During a road test, a technician observes that the transmission produces a brief, sharp shudder that lasts approximately one second during the 1-2 upshift at light throttle only. The shudder does not occur during moderate or heavy throttle 1-2 shifts. All other shifts at all throttle levels are completely smooth. What is the MOST LIKELY cause?

A. A worn 2nd gear band that cannot grip smoothly during the light-throttle apply event when pressure is lowest

B. A contaminated one-way clutch that hesitates during the release transition that occurs during the 1-2 shift

C. A shift overlap or timing issue specific to the 1-2 transition at low apply pressures, causing a brief clutch-to-clutch conflict

D. A worn engine mount that transmits engine vibration through the drivetrain specifically at the RPM of a light-throttle 1-2 shift

7. A technician connects a pressure gauge to the main line test port and measures 72 psi in Drive at idle (specification: 55-75 psi). The technician then uses the scan tool to command the EPC solenoid to increase line pressure. The gauge reading rises to 165 psi. What does this test confirm?

A. The pump, pressure regulator valve, and EPC solenoid circuit are all functioning correctly and responding to commands

B. The pressure regulator valve is stuck and only moves when the EPC solenoid applies maximum force to it

C. The EPC solenoid is commanding too much pressure, and the pressure regulator valve needs to be inspected

D. The oil pump is producing excessive unregulated pressure that only becomes apparent when the EPC solenoid opens fully

8. A customer states that the transmission makes a "clanging" or "rattling" noise immediately after shutting off the engine. The noise lasts approximately 2-3 seconds and then stops. No noise is present during engine operation. What is the MOST LIKELY source of this noise?

A. Internal transmission components settling as hydraulic pressure drops to zero after engine shutdown

B. The flexplate vibrating as the engine decelerates through a resonant frequency during the shutdown coast-down

C. Loose valve body bolts that allow the valve body to rattle against the case when fluid pressure stops holding it

D. The parking pawl engaging the parking gear as residual output shaft rotation brings a tooth into alignment

9. A vehicle equipped with a six-speed automatic transmission has normal shift quality in fully automatic mode. However, when the driver uses the manual shift paddles to hold 3rd gear at 65 mph (forcing the engine to run at 4,200 RPM), a noticeable vibration develops that is not present in automatic mode at the same speed. What is the MOST LIKELY cause?

A. A worn 3rd gear clutch pack that can hold the ratio but vibrates due to marginal friction material grip at high RPM

B. A faulty paddle shifter module that introduces electrical noise into the transmission control system at high RPM

C. A resonance in the exhaust system that is excited at the specific RPM produced by holding 3rd gear at 65 mph

D. An engine or drivetrain vibration at 4,200 RPM that is normally avoided by the automatic shift schedule

10. A vehicle with an automatic transmission exhibits a harsh 2-3 upshift only when the transmission fluid is at full operating temperature. The same shift is smooth during the first 15 minutes of driving. There are no DTCs stored. Which of the following is the MOST LIKELY explanation?

A. A shift solenoid that sticks in the wrong position only at operating temperature due to heat-induced expansion

B. An accumulator spring that weakens progressively with heat, providing less cushioning at higher fluid temperatures

C. An accumulator piston seal that shrinks at operating temperature, allowing pressure to bypass and reducing cushioning

D. A pressure control solenoid that increases its output resistance when hot, causing the module to command lower pressure

11. Technician A says that an automatic transmission equipped with a variable-displacement vane pump adjusts its output to reduce parasitic engine load at high RPM. Technician B says that a fixed-displacement gear pump produces the same flow rate regardless of engine speed. 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

12. A scan tool shows DTC P0751 — Shift Solenoid A Performance/Stuck Off in a five-speed automatic transmission. The transmission will not shift out of 1st gear. The technician disconnects the case connector and measures Solenoid A resistance at 14 ohms (specification: 11-16 ohms). What should the technician conclude from this resistance test?

A. The solenoid coil is functioning correctly and should be replaced based on the performance code alone

B. The solenoid resistance confirms it is electrically open and must be replaced immediately

C. The solenoid coil resistance is within specification, but the "stuck off" designation means the solenoid plunger or the downstream valve may be mechanically stuck

D. The solenoid resistance is at the high end of specification and borderline, indicating imminent coil failure

13. A vehicle has DTC P0734 — Gear 4 Incorrect Ratio stored as a confirmed code. The scan tool freeze frame shows the code was set at 52 mph, 1,800 RPM, 20% throttle, with a fluid temperature of 192°F. The technician road tests the vehicle at the exact same conditions and cannot reproduce the fault — the 4th gear ratio is correct. What is the MOST appropriate next step?

A. Replace the 4th gear clutch pack as a preventive measure since the code confirms internal mechanical wear

B. Clear the code, road test under varied throttle and speed conditions including the freeze frame parameters, and monitor for recurrence

C. Replace the input and output speed sensors since ratio codes always originate from incorrect speed data

D. Perform a transmission overhaul since a confirmed gear ratio code is definitive proof of clutch pack failure

14. A technician reviews scan tool data on a vehicle with a customer complaint of poor fuel economy. The data shows the following at 55 mph steady cruise: Engine RPM = 2,100, Input Shaft Speed = 2,100, Output Shaft Speed = 1,350. The transmission is in its highest gear (6th), and the TCC is commanded ON. What does the equal engine RPM and input shaft speed tell the technician about fuel economy?

A. The equal readings prove the engine has an internal fault that is causing higher-than-normal fuel consumption

B. The TCC is not engaging because the input speed should be lower than engine RPM in 6th gear overdrive

C. The engine RPM is too high for highway cruising, and the transmission should be in a higher gear for efficiency

D. The TCC is fully engaged with zero slip, which is the most fuel-efficient converter operating state

15. A vehicle's transmission sets DTC P0744 — Torque Converter Clutch Circuit Intermittent. The TCC functions normally during most driving but intermittently disengages and re-engages during steady-state highway cruising, producing a surge. The solenoid tests within specification during static testing. What diagnostic approach would MOST LIKELY reveal the root cause?

A. Record scan tool data while driving at highway speed over rough roads to capture the intermittent TCC signal dropout

B. Replace the TCC solenoid with a new unit since the intermittent code confirms the solenoid is failing internally

C. Perform a stall test to evaluate whether the TCC releases properly under maximum engine torque conditions

D. Flush the transmission fluid to remove contaminants that may be interfering with the TCC solenoid plunger

16. A technician is diagnosing a vehicle where the transmission shifts normally in all gears but the gear indicator on the instrument cluster does not display any gear — the display is blank at all times. The scan tool can communicate with the TCM normally and shows the correct commanded gear. What is the MOST LIKELY cause?

A. A communication fault between the TCM and the instrument cluster on the CAN bus or a failed cluster display circuit

B. A failed transmission range sensor that cannot report the current gear position to the instrument cluster

C. A faulty TCM that can process shift commands internally but cannot broadcast gear data on the network

D. A disconnected instrument cluster connector that prevents the cluster from receiving power and displaying data

17. A vehicle equipped with a ten-speed automatic transmission produces a subtle buzzing noise from the valve body area during the 5-6 upshift. The noise lasts approximately 0.5 seconds and is audible only at light throttle. No noise is present during moderate or heavy throttle 5-6 shifts. What is the MOST LIKELY cause?

A. A worn 6th gear clutch friction disc that chatters during the light-throttle engagement when apply pressure is lowest

B. A cracked valve body casting that transmits hydraulic pulsation as audible buzz during the shift event

C. A shift solenoid or control valve that oscillates briefly during the 5-6 transition at the low-flow condition of light throttle

D. A faulty torque management strategy that reduces engine torque too aggressively during the light-throttle shift

18. A vehicle has DTC P0868 — Transmission Fluid Pressure Low. The technician performs a line pressure test and confirms pressure is 20 psi below specification in all ranges at both idle and stall. The fluid level is correct. All of the following could cause this condition EXCEPT:

A. A worn oil pump with excessive internal clearances that reduce its pressure-generating capability

B. A stuck-open pressure regulator valve that vents excess fluid before pressure reaches specification

C. A clogged transmission filter that restricts the volume of fluid available to the pump intake

D. A leaking forward clutch piston seal that bleeds pressure from the forward clutch circuit only

19. A technician monitors scan tool data and observes the following during a road test: the vehicle is cruising at 45 mph in 4th gear with TCC commanded ON. Engine RPM shows 1,650 and input shaft speed shows 1,650 — zero TCC slip. Suddenly, the input shaft speed reading drops to 0 RPM for 1.2 seconds, then returns to 1,650 RPM. Engine RPM remains steady at 1,650 the entire time. The driver reports no drivability change during the dropout. What does this data pattern indicate?

A. The torque converter clutch momentarily released and re-engaged during the 1.2-second input speed dropout

B. The input speed sensor experienced a momentary signal loss, likely from a wiring, connector, or reluctor ring fault

C. The transmission control module rebooted during the 1.2-second period and lost all sensor data temporarily

D. The engine ECM stopped broadcasting RPM data on the CAN bus, causing the TCM to default the input speed to zero

20. A vehicle equipped with a CVT has a customer complaint that the engine RPM rises sharply during acceleration but the vehicle accelerates very slowly. A scan tool shows the actual CVT ratio does not match the commanded ratio — the commanded ratio is 2.5:1 but the actual ratio fluctuates between 1.2:1 and 1.8:1. What does the ratio discrepancy indicate?

A. The CVT control module has a software fault that is commanding an incorrect ratio for the driving condition

B. The engine is producing insufficient torque, and the CVT is compensating by selecting a lower ratio automatically

C. The CVT fluid temperature is too high, causing the control module to limit the ratio range as a protection measure

D. The CVT belt or chain is slipping on the pulleys because the clamping force is insufficient to maintain the commanded ratio

21. A technician is diagnosing a vehicle with DTC P2757 — Torque Converter Clutch Pressure Control Solenoid Control Circuit Performance. The scan tool shows the TCC pressure solenoid is commanded at 50% duty cycle, but the measured current draw is only 0.15 amps. The specification for 50% duty cycle is 0.8-1.0 amps. What is the MOST LIKELY cause of the low current draw?

A. A faulty TCM driver circuit that cannot supply adequate current despite commanding the correct duty cycle

B. A high-resistance fault in the TCC pressure solenoid circuit that is limiting current flow to the solenoid

C. A TCC pressure solenoid with a partially shorted coil that draws less current than a normal coil at 50% duty

D. A low battery voltage condition that reduces the available current for all solenoid circuits in the transmission

22. A vehicle's transmission operates normally during city driving but enters limp mode (locked in 3rd gear with MIL illuminated) every time the vehicle reaches highway speed above 60 mph. The technician clears codes, and the transmission functions normally in city driving until highway speed is reached again. DTC P0722 — Output Speed Sensor No Signal is stored each time. Which of the following BEST explains this speed-dependent fault?

A. The output speed sensor has a crack in its coil winding that opens when centrifugal force stretches the wire at high RPM

B. The reluctor ring on the output shaft has a manufacturing defect that produces an invalid pattern above a certain speed

C. The sensor's signal wire has an intermittent break that separates at the vibration frequency produced at highway output shaft speed

D. The transmission control module's speed input processing circuit overflows when the pulse frequency exceeds its sampling rate

23. A technician is testing a variable-resistance-type transmission range sensor. The voltage output in each position is as follows: Park = 4.5V, Reverse = 3.8V, Neutral = 3.1V, Drive = 2.4V, Manual 3 = 1.7V, Manual 2 = 1.0V, Manual 1 = 0.3V. The technician notes that the voltage difference between each adjacent position is approximately 0.7V. Is this sensor functioning correctly?

A. Yes — the uniform voltage steps between positions with no dead spots indicate a properly functioning sensor

B. No — the Park voltage should be at the low end of the range and the Manual 1 voltage should be at the high end

C. No — the voltage steps between adjacent positions should increase progressively, not remain uniform

D. Yes — but only if the voltage at each position matches the manufacturer's exact specification values for this sensor

24. A vehicle has stored DTCs for both P0717 (Input Speed Sensor No Signal) and P0722 (Output Speed Sensor No Signal) simultaneously. Both sensors are located inside the transmission and connect through the internal harness to the case connector. The technician tests both sensors at the case

connector — both read within resistance specification. What single fault would MOST LIKELY cause both codes?

A. Both sensors have simultaneously failed internally despite testing within resistance specification

B. The transmission control module has a failed input processing circuit that affects both speed channels equally

C. A faulty engine RPM signal on the CAN bus that the module misinterprets as a speed sensor fault condition

D. A fault in the shared internal wiring harness or case connector that interrupts both sensor signal paths simultaneously

25. A technician is diagnosing a vehicle where the transmission produces a harsh 3-4 upshift at wide-open throttle but all shifts are smooth at light and moderate throttle. The scan tool shows that during the WOT 3-4 shift, the EPC solenoid duty cycle is at the maximum value. No DTCs are stored. What does this information indicate?

A. The EPC solenoid is failing and can only produce maximum pressure regardless of the module's command

B. The 3-4 accumulator has failed, and the module is compensating by commanding maximum pressure

C. The module is commanding maximum line pressure for the WOT shift, which is normal, but the 3-4 circuit is not cushioning correctly

D. The adaptive learning has incorrectly increased the WOT 3-4 shift pressure beyond an acceptable level

26. A technician performs a transmission fluid service on a vehicle with 95,000 miles. The old fluid is dark reddish-brown but does not smell burnt. After refilling with the correct specification fluid and driving for two days, the customer returns reporting that the transmission now slips in 3rd gear. The transmission did not slip before the fluid service. What is the MOST LIKELY explanation?

A. The new fluid washed varnish deposits off the valve body spool valves, causing one to stick in a new position

B. The new fluid's friction modifiers differ from the old fluid's degraded friction characteristics, revealing a clutch pack that was marginally holding with the old fluid's higher static friction

C. The filter installed during the service is the wrong part number and is restricting flow to the 3rd gear circuit

D. The technician accidentally overfilled the transmission, causing aeration that specifically affects the 3rd gear circuit

27. A technician discovers that the external shift cable on a vehicle has a kink in the middle of its housing. The transmission engages all gears but the shift lever requires excessive force to move between positions. What is the correct repair?

A. Straighten the cable housing by hand and secure it with cable ties to prevent re-kinking during operation

B. Lubricate the inner cable with penetrating oil to reduce friction caused by the kink in the outer housing

C. Adjust the cable ends to compensate for the reduced effective travel caused by the kinked housing section

D. Replace the shift cable assembly since a kinked housing restricts inner cable movement and cannot be reliably repaired

28. A vehicle's transmission operates normally in all gears, but the customer reports that the Park position sometimes does not hold the vehicle on the steep driveway — the vehicle rolls occasionally. Other times, Park holds normally on the same driveway. There are no DTCs and the fluid level is correct. What is the MOST LIKELY cause?

A. The parking pawl is engaging only some teeth on the parking gear due to worn or rounded engagement teeth

B. The shift cable has stretched and does not consistently position the manual valve fully into the Park detent

C. The parking pawl return spring is intermittently preventing the pawl from fully engaging the parking gear teeth

D. The transmission mount has collapsed, changing the angle of the output shaft relative to the parking gear

29. A technician is replacing the transmission pan gasket on a vehicle that requires RTV sealant instead of a formed gasket. After applying a 3mm bead of RTV to the clean case mating surface, the technician installs the pan and torques the bolts to specification. Two hours later, a test drive reveals a fluid leak at the pan. What is the MOST LIKELY cause of the leak?

A. The RTV bead was too thick, creating excess material that was squeezed into the pan and is now contaminating the filter

B. The RTV sealant was not compatible with transmission fluid and dissolved upon contact with the ATF

C. The pan bolts were torqued before the RTV had sufficient time to begin curing, preventing a proper seal formation

D. The technician did not allow adequate cure time before driving — RTV requires time to skin over before bolt torque and time to fully cure before fluid exposure

30. A customer reports that the transmission fluid level has been dropping slowly. The technician finds no external leaks at the pan, cooler lines, seals, or vent. The engine coolant appears slightly pink and has an oily film on the surface in the overflow reservoir. What does this finding indicate?

A. The engine has a head gasket leak that is allowing coolant to mix with engine oil, creating the pink oily film

B. The integral transmission fluid cooler inside the radiator has an internal leak, allowing ATF to cross into the coolant

C. The transmission fluid is being consumed internally by worn piston seals that allow fluid past the compression rings

D. The power steering fluid reservoir has been contaminated with ATF, and the pink film is from cross-contamination

31. A technician is adjusting the shift cable on a vehicle with a column-mounted shifter. After completing the adjustment, the technician verifies that all gear positions engage correctly. However, the customer returns two weeks later reporting that Reverse sometimes engages Neutral instead of Reverse. What is the MOST LIKELY cause?

A. The cable bracket on the transmission has developed a crack that allows the cable housing to shift position gradually

B. The steering column shift tube bushings have worn further since the adjustment, introducing additional play

C. The cable adjustment has drifted slightly from its original setting due to cable stretch or bracket loosening over time

D. The manual valve inside the transmission has developed a worn bore that prevents it from centering in the Reverse detent

32. A technician replaces the transmission fluid temperature sensor. After installation, the scan tool shows the TFT reading is 310°F with the engine cold and the vehicle sitting overnight in a 70°F shop. What does this extremely high false reading indicate?

A. The new sensor is defective and has an internal open circuit that produces a maximum temperature default reading

B. The sensor connector was cross-connected with a different sensor's connector during the installation process

C. The sensor was installed without its O-ring seal, allowing hot fluid to contact the sensing element prematurely

D. The sensor circuit has a short to ground, which produces a low-resistance reading the module interprets as extreme heat

33. A vehicle has a slow fluid leak from the transmission range sensor mounting area. The technician removes the sensor and finds the O-ring is intact but hardened and compressed flat. What is the correct repair?

A. Replace the O-ring with a new one of the correct size and material, reinstall the sensor, and verify the leak is resolved

B. Apply a thin layer of RTV sealant over the old O-ring to compensate for the compression set and restore the seal

C. Replace the entire range sensor assembly because a hardened O-ring indicates the sensor has been exposed to excessive heat

D. Install the sensor without an O-ring and seal the exterior with silicone gasket maker to prevent fluid from leaking externally

34. A vehicle's automatic transmission has a customer complaint of a "thud" felt through the floor every time the air conditioning compressor cycles on during city driving at low speed. The thud does not occur at highway speed. No DTCs are stored. What should the technician investigate?

A. The AC compressor mounting bracket for a broken bolt that allows the compressor to shift when the clutch engages

B. The torque converter for a failing TCC that releases momentarily when the AC compressor loads the engine at idle

C. The engine idle speed and the transmission's response to the sudden load change from AC compressor engagement at low RPM

D. The transmission mount for a crack that allows the case to shift position when engine torque changes from AC loading

35. A technician discovers that the transmission cooler line fitting at the radiator is leaking. Upon inspection, the steel cooler line has corrosion buildup at the flare where it seats against the radiator fitting. The technician cleans the corrosion and reconnects the line, but the leak persists. What is the correct action?

A. Apply thread sealant tape to the flare fitting threads and retighten to specification to seal past the corroded area

B. Replace the cooler line section with the corroded flare, as a corroded flare surface cannot seal properly against the fitting seat

C. Tighten the fitting an additional half turn beyond specification to crush the corroded material into a tighter seal

D. Install a rubber adapter hose between the steel line and the radiator fitting to bypass the corroded flare connection

36. A technician is performing an in-vehicle valve body removal. After dropping the pan and removing the filter, the technician begins loosening valve body bolts. After removing the third bolt, a steady stream of fluid begins flowing from the valve body area. What is happening and what should the technician do?

A. A fluid passage in the case is draining residual fluid that did not drain with the pan — continue with removal

B. The pump is still pressurized from residual engine rotation — wait five minutes for pressure to dissipate completely

C. The torque converter is draining through the valve body passages — this is expected and the volume will diminish

D. Fluid retained in the torque converter and internal passages above the valve body is draining by gravity as the valve body separates from the case

37. A vehicle has a harsh engagement into Drive that occurs only when the engine is started cold and the first shift from Park to Drive is made within three seconds of starting the engine. If the driver waits 10 seconds before shifting to Drive, the engagement is smooth. There are no DTCs stored. What is the MOST LIKELY cause?

A. The oil pump requires several seconds at startup to build adequate pressure for the accumulators to function properly

B. A worn forward clutch seal that leaks during cold operation but seals once the pump builds full operating pressure

C. The transmission control module delays its adaptive pressure corrections for 10 seconds after each cold start event

D. The torque converter needs time to fill with fluid after sitting overnight, and the first engagement occurs before it is fully charged

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38. A technician is preparing to install a rebuilt transmission. The rebuild was performed due to a failed forward clutch pack. Before installation, the technician must verify which of the following on the torque converter?

A. That the converter stall speed has been tested on a converter test stand and matches the vehicle specification

B. That the converter fluid has been drained and replaced with fresh ATF before installation into the rebuilt transmission

C. That the converter is the correct unit for the application and is either new or properly rebuilt and free of contamination

D. That the converter mounting pads have been resurfaced on a lathe to ensure flat contact with the flexplate surface

39. During a transmission overhaul, a technician discovers that the input shaft has visible wear on one of its bearing journal surfaces — the journal has a polished ring approximately 0.003 inches smaller in diameter than the unworn area adjacent to it. The manufacturer's service information does not provide a minimum journal diameter specification. What is the correct action?

A. Polish the journal with crocus cloth to smooth the wear surface and install a standard-size bushing in the pump

B. Measure the worn journal and calculate the clearance with the mating bushing — if clearance exceeds maximum, replace the shaft

C. Install the shaft as-is since a 0.003-inch wear ring is within normal tolerance for transmission input shaft journals

D. Replace the input shaft because any measurable journal wear creates excessive clearance that causes pressure loss and noise

40. A technician is inspecting servo components during a transmission overhaul. The servo apply pin measures 0.010 inches shorter than the manufacturer's specification. A shorter apply pin would have which of the following effects on band operation?

A. The band would apply sooner and more aggressively because the shorter pin reduces the piston's travel distance

B. The band would not fully tighten around the drum because the piston cannot extend far enough to take up all clearance

C. The band would drag continuously because the shorter pin holds the piston in a partially applied position at all times

D. The band operation would be unaffected because the servo hydraulic pressure automatically compensates for pin length variation

41. A technician is assembling a clutch pack and needs to install new clutch piston seals. The inner lip seal has a specific orientation — the lip must face the apply pressure side. If the inner lip seal is installed with the lip facing away from the apply pressure, what will happen?

A. The piston will travel more slowly because the reversed seal creates additional friction against the bore wall

B. Apply pressure will push the seal lip away from the bore wall, allowing pressure to bypass the piston and preventing clutch application

C. The seal will function normally because lip seals are designed to seal in both directions equally under hydraulic pressure

D. The piston will apply the clutch normally but will not retract when pressure is released, causing the clutch to drag

42. A technician is measuring endplay during transmission reassembly and obtains two measurements: 0.028 inches with the pump bolted in place, and 0.018 inches after installing the torque converter and pushing it fully against the pump. What does the difference between these measurements indicate?

A. The converter is preloading the input shaft by 0.010 inches, and the correct endplay reading is the one taken without the converter installed

B. The pump is not properly seated against the case, creating a gap that the converter pushes closed during installation

C. The thrust washers have shifted position between measurements, and the endplay should be rechecked a third time

D. The converter hub is pushing the pump gears forward, creating a tighter measurement that represents the true operating endplay

43. A technician finds two identical-looking snap rings during transmission disassembly — both come from the same clutch drum. One is a flat snap ring and the other is a waved (beveled) snap ring. The technician is unsure which ring goes in which groove during reassembly. What is the correct action?

A. Install both snap rings as flat rings since the waved profile has no functional significance in clutch pack assembly

B. Install the waved snap ring on the side closest to the clutch piston, as its spring action provides piston return assistance

C. Install both snap rings in whichever groove they fit, since all snap rings in a clutch drum serve the same retaining function

D. Consult the manufacturer's service information to determine the correct position for each snap ring type

44. A technician is performing a transmission overhaul and needs to remove a cup plug from an internal fluid passage in the transmission case. The cup plug is pressed in and has no pull tab or extraction feature. What is the correct removal method?

A. Drill a hole through the center of the cup plug, thread a self-tapping screw into it, and pull the plug out with pliers

B. Use a chisel and hammer to drive the cup plug inward into the passage, then retrieve it from inside the case

C. Drill a small hole near the edge of the plug, insert a pick tool behind it, and pry the plug outward without pushing it into the passage

D. Apply heat to the case around the plug to expand the bore, then use compressed air from the opposite end of the passage to blow the plug out

45. After installing a rebuilt transmission, filling with fluid, and starting the engine, the technician notices that fluid is dripping slowly from the bottom of the bell housing. The drip rate is approximately one drop every five seconds. What should the technician check FIRST?

A. The front pump seal installation and the torque converter hub for damage, scoring, or improper converter seating depth

B. The engine rear main seal for a pre-existing leak that was masked by the old transmission's fluid contamination

C. The bell housing for a crack that developed during the installation process from an overtorqued mounting bolt

D. The converter drain plug for a loose or missing seal washer that allows fluid to weep from the converter housing

46. A technician completes a transmission rebuild and performs the initial startup. The transmission engages Drive smoothly but will not upshift out of 1st gear. The scan tool shows no DTCs, and all solenoid duty cycles appear normal. The technician suspects the valve body may have an issue. Before removing the valve body, what quick check should the technician perform?

A. A stall test to verify the converter is coupling correctly and providing adequate torque transfer at full throttle

B. A line pressure test to verify the pump is producing adequate pressure and the regulator is controlling it correctly

C. A fluid temperature check to verify the fluid has reached operating temperature for the shift schedule to activate

D. An output speed sensor signal verification to confirm the module is receiving the vehicle speed data needed to command upshifts

47. A technician is installing a new valve body during a transmission overhaul. The new valve body requires torquing the mounting bolts in a specific spiral pattern starting from the center and working outward. The technician torques the bolts starting from the outside corners and working inward instead. What is the potential consequence?

A. No consequence, since the total clamping force is the same regardless of the sequence used during tightening

B. The outer bolts will be over-torqued while the center bolts will be under-torqued, causing uneven gasket compression

C. The valve body will crack at the center because the outward-to-inward sequence concentrates stress at the midpoint

D. The valve body may warp or the separator plate may shift, creating internal fluid leaks between hydraulic circuits

48. A technician has completed a transmission overhaul and is performing a post-installation road test. All shifts are smooth and correctly timed. However, the technician notices that the fluid temperature rises to 225°F during 20 minutes of city driving, while the specification maximum for normal operation is 200°F. The cooler was flushed and flow-tested before installation. What should the technician investigate NEXT?

A. The transmission for excessive internal clutch drag from one or more clutch clearances set too tight during assembly

B. The torque converter for an incorrect stall speed that generates more heat than the cooling system can dissipate

C. The cooler thermostat or bypass valve for a stuck condition that routes fluid around the cooler instead of through it

D. The radiator cap for a weak spring that reduces cooling system pressure and affects the integral cooler's heat transfer

49. After a transmission rebuild and installation, a technician performs an adaptive reset and begins the re-learn drive cycle. During the first several upshifts, the shifts are noticeably soft with slight flares. After approximately 15 minutes of varied driving, the shifts progressively firm up and become smooth. Is this behavior expected?

A. Yes — the module is starting from default baseline values and progressively learning the correct apply pressures for the new components

B. No — the soft initial shifts indicate the clutch packs were assembled with excessive clearance that the adaptive system is compensating for

C. No — the re-learn drive cycle should produce firm shifts from the start, and soft shifts indicate a pressure regulation fault

D. Yes — but only if the transmission was filled with the wrong fluid that requires 15 minutes to reach its correct operating viscosity

50. A technician installs an inline cooler filter in the transmission cooler return line after a major overhaul. The filter housing has an arrow indicating flow direction. The technician installs the filter with the arrow pointing toward the transmission (opposite the actual flow direction). What is the consequence of this reversed installation?

A. The filter will function identically in either direction since inline filters are not directional by design

B. The filter element will not trap debris effectively because the flow enters from the wrong side and bypasses the filtration media

C. The filter housing will rupture under pressure because reversed flow exceeds the housing's pressure rating in that direction

D. The filter will create a complete blockage of cooler return flow, causing the transmission to overheat immediately

Practice Exam 8: Answer Key and Explanations

1. D — The pulsation occurs only at 70 mph in 5th gear with TCC locked and disappears in 4th gear at 55 mph. Since the TCC is locked, the converter housing and turbine rotate as one unit at engine speed. A localized worn spot on the TCC friction surface creates a brief slip-grab cycle once per converter revolution. The pulsation frequency matches converter rotational speed, and it disappears in 4th gear because the TCC may not be locked at that lower speed.

2. B — A strong burnt smell from the transmission during a stall test, combined with dark brown fluid, indicates the transmission already has degraded, overheated fluid and damaged friction material from a pre-existing condition. The stall test's heat generation is exposing the already-damaged fluid to additional thermal stress, intensifying the burnt odor. Normal stall tests on healthy transmissions with fresh fluid do not produce a noticeable burnt smell.

3. C — Technician B is correct. When a one-way clutch in the 1st gear circuit fails in the freewheeling position, the vehicle can still move in 1st gear during acceleration because the one-way clutch only provides the holding function — other apply devices in the circuit still transmit drive torque. However, during deceleration in manual low, the one-way clutch is supposed to hold the planetary element in both directions for engine braking. A freewheeling one-way clutch releases during deceleration, eliminating engine braking while still allowing forward drive.

4. A — The vibration increases with road speed, persists in every driving condition including engine-off coasting, and is unaffected by tire rotation. Since the driveshaft was recently replaced, the most likely cause is the replacement driveshaft. A new driveshaft that is out of balance or installed with incorrect U-joint yoke phasing produces a speed-dependent vibration that is independent of engine operation, gear selection, and tire position.

5. D — The question asks which option could NOT cause a clunk during the coast-to-acceleration transition. Differential backlash, worn U-joints, and loose mounts all produce a single clunk when mechanical free play takes up during torque reversal. A slipping forward clutch would produce a slip sensation (RPM increase without acceleration), not a distinct mechanical clunk. Clutch slippage is a friction event, not an impact event, and would not produce the sharp, metallic clunk described.

6. C — A brief shudder during the 1-2 upshift only at light throttle — not at moderate or heavy throttle — points to a shift overlap issue at low apply pressures. At light throttle, the apply pressures are lowest, and the timing margin between the releasing and applying devices is tightest. A slight overlap where both devices are briefly engaged simultaneously creates a momentary bind (clutch-to-clutch conflict)

that produces the shudder. At higher throttle, increased apply pressure provides cleaner, faster transitions that avoid the conflict.

7. A — The baseline pressure at idle is within specification (72 psi), and the pressure rises to 165 psi when the scan tool commands the EPC to increase pressure. This confirms three things: the pump produces adequate pressure, the pressure regulator valve moves correctly in response to the EPC signal, and the EPC solenoid circuit responds to module commands. All three components in the pressure regulation chain are functioning as designed.

8. B — A brief noise lasting 2-3 seconds that occurs only during engine shutdown and is absent during normal operation is characteristic of the flexplate vibrating as the engine decelerates through a resonant frequency. During shutdown, engine RPM drops through all frequencies as the crankshaft coasts to a stop. At a specific RPM during this deceleration, the flexplate resonates momentarily, producing the clanging noise. Once the engine passes through that frequency and stops, the noise ceases.

9. D — In automatic mode at 65 mph, the transmission selects 5th or 6th gear, keeping the engine at a relatively low RPM that avoids the vibration. When the driver manually holds 3rd gear at 65 mph, the engine is forced to 4,200 RPM — a specific RPM that the automatic shift schedule deliberately avoids. Many engines and drivetrains have known vibration or resonance points that the shift calibration is programmed to skip past quickly. Manual gear hold overrides this avoidance strategy.

10. C — A harsh 2-3 shift only at operating temperature with a smooth shift when cold indicates a temperature-dependent cushioning failure. An accumulator piston seal that shrinks or loses its sealing capability at elevated temperature allows apply pressure to bypass the piston. Without the accumulator absorbing the initial pressure spike, the clutch receives full line pressure instantaneously, producing the harsh engagement. When cold, the seal maintains adequate contact and the accumulator functions normally.

11. A — Technician A is correct. A variable-displacement vane pump adjusts its output by changing the cam ring eccentricity, reducing flow when system pressure is adequate. This reduces the parasitic load on the engine because the pump does not have to work as hard to maintain pressure at high RPM. Technician B is wrong because a fixed-displacement pump produces flow directly proportional to RPM — higher engine speed produces more flow, which the regulator must then exhaust, wasting energy.

12. C — The solenoid resistance of 14 ohms is within the 11-16 ohm specification, confirming the coil is electrically intact. However, the DTC specifically states "Performance/Stuck Off" — meaning the module commanded the solenoid but the expected shift result did not occur. Since the electrical circuit is

confirmed good, the "stuck off" condition likely indicates the solenoid's plunger is mechanically stuck or the downstream shift valve in the valve body is bound by varnish or debris.

13. B — A confirmed ratio code that cannot be reproduced during a road test at the freeze frame conditions represents a fault that either occurred under a very specific set of circumstances not precisely replicated, or was a one-time event. The correct approach is to clear the code, road test under varied conditions that include the freeze frame parameters, and monitor for recurrence. Replacing components based on a non-reproducible code is premature and costly.

14. D — Engine RPM equals input shaft speed (both 2,100), confirming zero slip between the crankshaft and the turbine — the TCC is fully locked. Full TCC lockup is the most fuel-efficient converter operating state because 100% of engine torque is transmitted mechanically to the input shaft with no energy lost to fluid shear. The TCC is functioning correctly and is not contributing to the fuel economy complaint — the technician should investigate other causes.

15. A — The TCC functions normally most of the time but intermittently disengages and re-engages, and static testing shows the solenoid is within specification. Intermittent faults that pass static testing are caused by connections that fail under specific conditions — vibration, heat, or physical stress. Recording scan tool data while driving over rough roads (which introduces maximum harness vibration) is the most likely method to capture the momentary signal dropout that causes the intermittent TCC release.

16. A — The TCM communicates normally with the scan tool and correctly commands shifts, confirming the TCM and its internal processing are functional. The blank gear indicator display on the instrument cluster means the gear data is either not reaching the cluster or the cluster cannot display it. The most likely cause is a communication fault on the CAN bus segment between the TCM and the instrument cluster, or a failed display circuit within the cluster itself.

17. C — A brief buzzing noise during a specific shift event only at light throttle is characteristic of a solenoid or control valve oscillating during the transition. At light throttle, the fluid flow rate through the shift circuit is low, which can cause the solenoid plunger or shift valve to flutter between positions before settling into the commanded state. At moderate and heavy throttle, higher flow rates provide more decisive valve movement, eliminating the oscillation.

18. D — The question asks which option could NOT cause universally low pressure in all ranges. A leaking forward clutch piston seal bleeds pressure only from the forward clutch circuit — it causes low pressure in Drive ranges but not in Park, Neutral, or Reverse. All other options — a worn pump, stuck-

open regulator, and clogged filter — affect the main pressure supply upstream of all individual circuits, causing system-wide pressure deficiency.

19. B — Engine RPM remained steady at 1,650 throughout the event, and the driver felt no drivability change — the transmission continued operating normally. If the TCC had actually released and re-engaged, engine RPM would have changed and the driver would have felt a surge. The momentary dropout to 0 RPM in the input speed PID only, with no change in any other parameter or driver experience, indicates a signal loss at the sensor — not an actual mechanical event.

20. D — The module commands a ratio of 2.5:1 (high reduction for acceleration), but the actual ratio fluctuates between 1.2:1 and 1.8:1 — far lower than commanded. The CVT is attempting to set the pulleys for maximum torque multiplication, but the belt or chain cannot maintain grip on the pulleys at the commanded clamping force. The belt slips to a lower-ratio position where the pulley contact angle is less demanding, producing the ratio discrepancy and poor acceleration.

21. B — The module commands 50% duty cycle, but the actual current draw is 0.15 amps versus the expected 0.8-1.0 amps. Low current at the correct commanded duty cycle indicates excessive resistance in the circuit between the module driver and the solenoid coil. A high-resistance connection — corroded pin, damaged wire, or poor splice — limits the current flow to a fraction of what the coil needs to generate proper magnetic force.

22. C — The fault occurs only above 60 mph, which corresponds to a specific output shaft RPM and therefore a specific vibration frequency. An intermittent break in the sensor's signal wire that separates at the vibration frequency produced at highway output shaft speed would cause the signal to drop out specifically at that speed range. At lower speeds, the vibration frequency is different and does not excite the break point, so the connection holds and the sensor functions normally.

23. A — The sensor produces uniform 0.7V steps between each adjacent gear position with no dead spots, dropouts, or erratic readings across the entire range from Park (4.5V) to Manual 1 (0.3V). This smooth, proportional, evenly-stepped output pattern indicates the sensor's resistive element is intact and providing clean position data that the module can accurately decode into distinct gear positions. The actual voltage values must still be compared to the manufacturer's specification for final confirmation.

24. D — Both sensors are inside the transmission and share the internal wiring harness that routes through the case connector. Both sensors test within resistance specification at the case connector, confirming their coils are intact. If both sensors simultaneously set "No Signal" codes despite good

coils, the most likely single fault is in the shared signal path — a damaged internal harness, a corroded case connector pin, or a broken wire bundle that interrupts both sensor signals at the same point.

25. C — At wide-open throttle, the module correctly commands maximum line pressure to prevent clutch slippage under the highest torque load. The EPC at maximum duty cycle is normal for WOT operation. Since the system pressure is correct and the module's command is appropriate, the harshness must originate in the 3-4 circuit-specific cushioning — a stuck accumulator, a blocked orifice, or a failed cushioning mechanism that cannot soften the high-pressure apply event.

26. B — The transmission did not slip before the fluid service. Old, degraded fluid with depleted friction modifiers can develop a higher static friction coefficient than fresh fluid — essentially becoming "stickier" on worn clutch surfaces. When the old fluid was replaced with fresh fluid that has properly formulated (but different) friction characteristics, a clutch pack that was marginally holding with the old fluid's properties can no longer maintain grip. The fresh fluid revealed a pre-existing clutch wear condition.

27. A — Fluid contamination from the kinked housing particles cannot be fixed by lubrication or adjustment. A kinked cable housing compresses the inner cable at the kink point, creating friction and resistance that increases the force required to move the shift lever. The kink also reduces the effective cable travel, potentially preventing the manual valve from reaching full detent positions. Kinked cable housings cannot be reliably straightened — the housing retains memory of the bend and the inner cable may be damaged.

28. D — Intermittent failure of the Park hold — sometimes holding and sometimes rolling — with correct fluid level and no DTCs points to a mechanical inconsistency in the parking pawl mechanism. A transmission mount that has collapsed changes the angular relationship between the output shaft, the parking gear, and the parking pawl. The altered angle may prevent full pawl engagement on some tooth positions while allowing it on others, depending on exactly where the output shaft stops.

29. D — RTV sealant requires a specific cure procedure: after applying the bead, it must be allowed to skin over (typically 5-15 minutes depending on the product) before the pan is installed and bolts are torqued. After torquing, the assembly must cure for a manufacturer-specified period (often several hours) before the transmission is filled with fluid and operated. Driving before the RTV has fully cured exposes the uncured sealant to fluid and pressure, preventing a proper seal.

30. B — Pink, oily fluid in the engine coolant overflow reservoir is the classic indicator of ATF leaking into the cooling system through a breached integral cooler inside the radiator. The transmission fluid

cooler tubes inside the radiator tank have developed a crack or pinhole, allowing pressurized ATF to cross into the lower-pressure coolant. This explains the dropping ATF level with no visible external leaks — the fluid is being absorbed into the cooling system.

31. C — A cable adjustment that initially tested correct but drifts within two weeks indicates the adjustment mechanism has loosened or the cable has stretched slightly. The small amount of drift is enough to shift the manual valve position just far enough that the Reverse detent is no longer centered — the valve sits between Reverse and Neutral, and minor variations in cable tension determine which position the valve settles into on any given shift.

32. D — A TFT reading of 310°F on a cold engine in a 70°F shop is obviously false — the fluid cannot be hotter than ambient temperature. An NTC thermistor sensor circuit with a short to ground produces very low resistance, which the module's lookup table interprets as extremely high temperature. This is the opposite of an open circuit (which produces a -40°F default reading). The short to ground must be identified — it could be in the sensor, the wiring, or the connector.

33. A — A hardened, compression-set O-ring has permanently deformed and can no longer provide the elastic resilience needed to seal against the case bore and sensor body. Replacing the O-ring with a new one of the correct size and material restores the seal. The sensor itself is not damaged by the O-ring failure — the O-ring simply reached the end of its service life from heat cycling and chemical exposure.

34. C — A "thud" that occurs only at low speed when the AC compressor engages points to the engine's response to the sudden load change. At low RPM, the engine has less rotating inertia to absorb the compressor load, causing a more noticeable RPM drop. The transmission responds to this RPM drop with a torque management adjustment, and the combined effect of the engine stumble and the transmission's response produces the thud felt through the floor.

35. B — A corroded flare surface cannot create the metal-to-metal seal that a flare fitting requires. The corrosion creates microscopic channels between the flare and the fitting seat that allow fluid to weep past regardless of how tightly the fitting is torqued. Cleaning removes surface corrosion but does not restore the original smooth, precision-formed flare surface. The damaged section must be replaced with a new line that has a properly formed, uncorroded flare.

36. D — When the valve body is separated from the case, fluid trapped in the torque converter, internal passages, and clutch circuits above the valve body drains downward by gravity through the now-open passages. This is normal and expected during valve body removal. The technician should have a catch

pan ready and allow the fluid to drain before continuing with the removal. The volume will diminish as the trapped fluid drains out.

37. A — A harsh engagement that occurs only when the first Park-to-Drive shift happens within three seconds of engine start — but is smooth when the driver waits 10 seconds — indicates the oil pump has not yet built sufficient pressure to fully charge the accumulators. The accumulators need adequate pre-charge pressure to cushion the clutch application. If the shift occurs before the accumulators are charged, full line pressure hits the clutch instantly with no cushioning.

38. C — Before installing a torque converter with a rebuilt transmission, the technician must verify three things: the converter is the correct model for the specific transmission and vehicle application, the converter is either new or has been properly rebuilt (not a reused unit from the failed transmission), and the converter is free of contamination from the previous failure. Installing a contaminated or incorrect converter will compromise the entire rebuild.

39. D — A 0.003-inch wear ring on an input shaft bearing journal represents significant material loss from the precision-machined surface. This worn area creates excessive clearance between the journal and its mating bushing, which allows the shaft to orbit eccentrically. The excess clearance causes pressure loss through the bushing (since bushings in automatic transmissions also serve as hydraulic seals), increased noise, and accelerated wear on the new bushing. The shaft must be replaced.

40. B — The servo apply pin transmits the force of the hydraulic piston to the band. If the pin is shorter than specification, the piston reaches its full travel before the pin has pushed the band tightly enough around the drum to achieve full clamping force. The band makes contact with the drum but cannot tighten sufficiently to hold the full torque load. The result is band slippage in the gear range where that band is applied, particularly under heavy throttle.

41. B — Lip seals are directional — the lip must face the pressure source so that apply pressure pushes the lip outward against the bore wall, creating a tighter seal as pressure increases. If the lip faces away from the pressure, hydraulic force pushes the lip inward, away from the bore wall, opening a gap that allows pressure to bypass the piston. The clutch will not apply because the hydraulic force escapes past the incorrectly oriented seal.

42. A — The endplay measurement taken with the pump installed but without the converter (0.028 inches) represents the true axial free play of the gear train. When the converter is installed, it engages the input shaft splines and pushes the shaft forward by 0.010 inches, preloading the thrust stack and

producing a falsely tight reading of 0.018 inches. The correct measurement is taken without the converter to avoid this preload effect.

43. D — Flat snap rings and waved snap rings serve different functions and are not interchangeable. A waved snap ring provides a controlled spring action that maintains constant pressure on the clutch stack, while a flat snap ring provides rigid retention. Installing them in the wrong positions can alter clutch clearance, piston return behavior, and shift quality. The manufacturer's service information specifies which type goes in which groove.

44. C — Drilling a small hole near the edge of the cup plug allows a pick tool to be inserted behind the plug to pry it outward without pushing it into the passage. Driving the plug inward risks it lodging deeper in the passage where it becomes extremely difficult to retrieve and could block fluid flow. The small hole near the edge provides a grip point for controlled extraction while keeping the plug intact for easy removal.

45. A — A slow, steady drip from the bell housing after initial startup points to the front pump seal area — the junction between the converter hub and the pump housing. The most common causes are a front pump seal that was nicked or rolled during converter installation, a converter hub with scoring that prevents the new seal from seating, or a converter that is not fully seated and has the hub mispositioned relative to the seal. These are the first items to check.

46. B — Before removing the valve body to investigate, the technician should verify that the basic hydraulic system is functioning. A line pressure test confirms whether the pump is producing adequate pressure and the regulator is controlling it. If line pressure is severely low, the transmission cannot upshift because the clutch circuits cannot develop enough force to apply. Low pump pressure would explain the no-upshift condition without any valve body or electronic fault.

47. D — Valve body bolt torque sequence is specified by the manufacturer to distribute clamping force evenly across the casting and separator plate. Torquing from the outside inward draws the outer edges down first, which can cause the center of the valve body to bow upward. This warping distorts the valve bores and shifts the separator plate, creating internal leaks between hydraulic circuits that cause pressure cross-feeding, incorrect shift timing, or loss of pressure in specific circuits.

48. C — Shifts are smooth and correctly timed, confirming the internal rebuild is correct. The cooler was flushed and flow-tested successfully, ruling out cooler restriction. Elevated temperature during normal city driving points to a component that is preventing the fluid from reaching the cooler for heat

dissipation. A cooler thermostat or bypass valve stuck in the bypass position routes fluid around the cooler, preventing heat exchange regardless of cooler condition.

49. A — After an adaptive reset, the module starts from its factory default baseline calibration values — which are conservative and designed for a new, unworn transmission. The initial soft shifts with slight flares are expected because the default apply pressures may be slightly lower than what the specific combination of new components requires. As the module monitors each shift event and compares it to target parameters, it progressively increases apply pressures until the shifts meet their targets.

50. B — Inline cooler filters are directional — the filter element is designed to trap particles on one specific side while allowing clean fluid to pass through from the other side. Installing the filter with reversed flow direction allows fluid to enter from the clean side, which may push debris through or around the element rather than trapping it effectively. The filter cannot perform its intended debris capture function when flow bypasses the filtration media due to reversed installation.