

PRACTICE EXAM 19: ASE A2 SIMULATION

(50 QUESTIONS)

1. A technician is diagnosing a vehicle that was towed to the shop after "the transmission stopped working on the highway." The customer reports the vehicle was driving normally at 65 mph when the transmission suddenly lost all forward gears simultaneously — no warning, no gradual slipping, no unusual noise beforehand. Reverse still functions normally. The fluid is at the correct level with no burnt odor. Which of the following failures is MOST consistent with a sudden, complete loss of all forward gears while Reverse continues to work?

- A. A catastrophic oil pump failure that eliminated hydraulic pressure to all circuits simultaneously during highway driving
- B. A worn pressure regulator valve that stuck open and vented all line pressure from the forward circuits only
- C. A broken input shaft that separated the turbine from the planetary gear train, eliminating all power transfer to forward gears
- D. A failed forward clutch — the single device applied in every forward gear — that lost all holding capacity simultaneously

2. A vehicle equipped with a six-speed automatic transmission has a subtle but consistent symptom: every upshift produces a barely perceptible 0.3-second delay between the releasing gear and the engaging gear. The delay is present in every upshift (1-2, 2-3, 3-4, 4-5, 5-6) at all throttle levels. All downshifts are crisp with no delay. What does the uniform delay across ALL upshifts indicate about the fault's location?

- A. A system-wide pressure delivery issue — such as a marginally weak pump or slightly low line pressure — that slows every clutch fill event equally
- B. A faulty throttle position sensor that delays the module's upshift timing calculation by a fixed amount regardless of which shift is commanded
- C. An adaptive learning error where the module has uniformly increased the shift delay for all upshifts based on incorrect speed sensor calibration
- D. A worn valve body with multiple stuck shift valves that each add the same amount of delay to their respective shift circuits independently

3. A customer states that the vehicle's automatic transmission "feels like it's in the wrong gear" during highway cruising — the engine RPM seems higher than expected at 60 mph. The scan tool shows the module commanding 6th gear (the highest gear), and the calculated ratio matches the 6th gear specification. TCC is commanded ON with 0 RPM slip. What should the technician investigate?

- A. The torque converter for internal slippage that would cause higher-than-expected RPM despite zero slip shown on the scan tool data
- B. The transmission for an incorrect final drive ratio that has been installed during a previous differential service or axle replacement
- C. The engine for a performance issue that is causing it to operate at a higher RPM than normal to maintain the commanded speed and load
- D. The output speed sensor for a calibration error that makes the module calculate a correct ratio from incorrect raw speed data

4. Technician A says that a vehicle with an automatic transmission can safely be flat-towed (all four wheels on ground, engine off) if the transmission is placed in Neutral. Technician B says that some automatic transmissions can be damaged even in Neutral when flat-towed because the pump does not operate without the engine running and internal components receive no lubrication. 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

5. A vehicle's automatic transmission produces a vibration during the exact 0.5-second window of the TCC lockup transition at 45 mph. Once the TCC is fully locked, the vibration disappears and cruising is smooth. The technician performs a fluid service with the manufacturer's specified fluid. After 500 miles, the vibration persists unchanged. The technician then commands TCC OFF using the scan tool and drives at 45 mph in the same gear — no vibration is present. What is the definitive diagnostic conclusion?

- A. The TCC friction material inside the converter is mechanically worn and the converter must be replaced since the fluid service did not resolve the shudder

B. The engine has a torsional vibration at the specific RPM of 45 mph that is transmitted through the drivetrain only when the TCC mechanically locks

C. The TCC solenoid is producing inconsistent apply pressure during the lockup transition, causing the converter clutch to chatter during engagement

D. The valve body's TCC apply circuit has a restriction that slows the TCC apply rate, causing a prolonged engagement transition that feels like vibration

6. A vehicle equipped with a rear-wheel-drive automatic transmission produces a clunking noise during the 2-3 upshift at moderate throttle. The technician performs the following isolation tests: (1) shifts to Neutral at the same speed — no clunk; (2) performs the 2-3 shift at light throttle — no clunk; (3) performs the 2-3 shift at heavy throttle — clunk is present. What do these combined test results tell the technician about the clunk source?

A. The clunk is from a U-joint that binds under the torque loading of moderate and heavy throttle 2-3 shifts but is unloaded in Neutral

B. The clunk is from a worn transmission mount that shifts position under the torsional change of the 2-3 shift at higher torque levels

C. The clunk is from within the transmission — it requires the specific torque loading of the 2-3 shift at moderate-to-heavy throttle and disappears when unloaded

D. The clunk is from the differential ring and pinion that takes up backlash during the torque change of the 2-3 shift at higher throttle settings

7. A technician performs a stall test on a vehicle. Drive stall = 2,450 RPM, Reverse stall = 2,500 RPM. The manufacturer's specification is 2,200 RPM for both ranges. Both stall speeds are 250-300 RPM ABOVE specification. What do equally elevated stall speeds in both Drive and Reverse indicate?

A. The torque converter stator one-way clutch is freewheeling in both directions, reducing the converter's ability to load the engine at stall

B. The engine is producing more power than specification, allowing it to overpower the converter's designed resistance at the stall condition

C. The oil pump has a relief valve that is stuck open, limiting the maximum pressure available to hold the clutches at stall in both ranges

D. A system-wide hydraulic issue — such as low line pressure or aerated fluid — is reducing clutch holding capacity equally in both Drive and Reverse

8. A vehicle's automatic transmission exhibits the following behavior: normal operation in all gears during city driving at moderate fluid temperature, but after 30 minutes of highway driving at elevated fluid temperature, the 3-4 upshift develops a progressive flare that worsens over the next 20 minutes. No other shifts are affected at any temperature. After a 2-hour cool-down, the cycle repeats exactly. What is the MOST LIKELY cause?

A. A system-wide pressure loss from a pump that deteriorates as fluid viscosity drops at highway operating temperature

B. The 3-4 accumulator spring that weakens progressively with heat, providing less cushioning resistance as temperature rises

C. A thermally sensitive shift solenoid that changes its response characteristics as its internal temperature rises above normal

D. A heat-sensitive piston seal in the 4th gear clutch circuit that softens and allows increasing pressure bypass as temperature rises

9. Technician A says that the purpose of the torque converter's lock-up clutch (TCC) is to eliminate converter slip during cruising, creating a direct mechanical connection between the engine and the transmission input shaft. Technician B says that a locked TCC improves fuel economy because it eliminates the energy loss that occurs when torque is transferred through fluid coupling. Who is correct?

A. Both Technician A and Technician B

B. Technician A only

C. Technician B only

D. Neither Technician A nor Technician B

10. A vehicle with an automatic transmission is brought in for a vibration concern. The vibration is present between 40 and 50 mph and disappears outside this speed range. The vibration is present in Drive, Neutral, and when coasting with the engine off. The technician places the vehicle on a lift, runs it in Drive to reach 45 mph on the speedometer, and the vibration is NOT present on the lift. What does the absence of vibration on the lift confirm?

A. The vibration originates from the torque converter, which cannot produce the vibration without the road resistance loading it experiences during actual driving

- B. The vibration requires the vehicle's weight loading the drivetrain against the road surface — indicating tires, loaded wheel bearings, or suspension-dependent driveline angles
- C. The vibration is from the transmission output bearing, which requires the full weight of the vehicle to compress the bearing into its vibration-producing condition
- D. The vibration is from the engine at the specific RPM corresponding to 45 mph, and the lift eliminates the road feedback that excites the engine resonance

11. A vehicle's automatic transmission has the following complaint: the vehicle drives normally in all forward gears, but when Reverse is selected, the vehicle moves forward slowly instead of backward. Drive engagement is normal and smooth. The fluid is clean and at the correct level. No DTCs are stored. Which single failure would MOST LIKELY cause forward movement when Reverse is selected?

- A. A stuck manual valve that does not reach the Reverse detent, keeping the transmission in a forward gear range despite the lever being in Reverse
- B. A broken sun gear shell that disconnects the reverse drive path, allowing the planetary set to default to a forward output direction
- C. The shift cable or linkage is preventing the manual valve from reaching the Reverse position, leaving the valve in or near a forward range
- D. A failed reverse clutch that cannot hold the reaction member, allowing the planetary gear set to freewheel into a forward output direction

12. A vehicle stores DTC P0730 — Incorrect Gear Ratio — intermittently. The technician reviews the code's history and finds it has set 14 times over the past 2,000 miles. The freeze frame data shows the code sets at various speeds (25-65 mph), various throttle positions (15-80%), and various gears (2nd through 6th). The only consistent parameter across all 14 events is the fluid temperature: 210-215°F every time. What does the temperature consistency suggest?

- A. The transmission overheats intermittently, causing the fluid to thin enough that all clutches slip at random gears and conditions
- B. The code sets at operating temperature because the module's ratio monitoring threshold changes at 210°F, creating a tighter tolerance that catches minor slip
- C. A sensor or solenoid that functions normally below 210°F but develops a thermal fault above that temperature, producing the ratio errors

D. The code sets at exactly 210-215°F because the TFT sensor produces a signal anomaly at that specific temperature that corrupts the ratio calculation

13. A technician monitors scan tool data during a road test. At 55 mph in 5th gear with TCC ON, the data shows: Engine RPM = 1,850, Input Shaft Speed = 1,850, Output Shaft Speed = 0 RPM. The vehicle is clearly moving at 55 mph. What does the 0 RPM output speed reading indicate?

A. The transmission output shaft has broken, and the vehicle is coasting on momentum while the engine and input shaft continue spinning normally

B. The torque converter has failed internally, and the turbine is spinning without transferring any power to the gear train or output shaft

C. The module has disabled the output speed sensor input due to a previously stored code, and is substituting a default zero value

D. The output speed sensor has failed or its circuit is open, producing a zero reading while the vehicle is physically moving at road speed

14. A vehicle equipped with a ten-speed automatic transmission has the following symptom: during WOT acceleration, all shifts from 1-2 through 8-9 are smooth and fast. The 9-10 shift produces a noticeable 0.5-second hesitation before 10th gear engages. No DTCs are stored. The technician commands a manual 9-10 shift at the same speed — the shift is smooth with no hesitation. What does the difference between automatic and manual 9-10 shifts suggest?

A. The automatic 9-10 shift uses a different pressure command and timing strategy than the manual shift, and the automatic calibration has a fault

B. The 10th gear clutch has a marginal seal that leaks during the higher-pressure automatic apply but holds during the lower-pressure manual apply

C. A faulty engine torque management signal that reduces torque incorrectly during the automatic 9-10 shift but is not invoked during manual shifts

D. The shift solenoid pattern for the automatic 9-10 shift differs from the manual pattern, and the automatic pattern has a valve delay

15. A vehicle has DTC P0744 — TCC Circuit Intermittent — that sets during highway driving approximately once per week. The technician records scan tool data during an extended highway drive. After 45 minutes, the recording captures the event: TCC slip jumps from 0 to 95 RPM for exactly 0.8

seconds, then returns to 0 RPM. During the spike, the TCC solenoid duty cycle PID shows a brief dropout to 0% for 0.8 seconds before returning to its normal value. What does the solenoid duty cycle dropout confirm?

- A. The converter's TCC friction surface momentarily releases and re-grips at a worn spot once per converter revolution at this specific speed
- B. The TCC apply valve in the valve body is sticking and momentarily loses its position before hydraulic pressure pushes it back into place
- C. The solenoid circuit experienced an electrical interruption — the module lost control of the solenoid for 0.8 seconds, causing the TCC to release
- D. The transmission control module's software has a periodic recalibration routine that momentarily drops the TCC command during processing

16. A technician is diagnosing a vehicle where the transmission shifts normally in all gears and the TCC engages correctly. However, the customer reports that fuel economy has dropped approximately 4 mpg. The scan tool shows no DTCs and all PIDs appear normal. The technician checks the TCC slip at steady 60 mph cruise in top gear — the slip reads a steady 0 RPM. The calculated gear ratio matches the top gear specification exactly. What should the technician investigate NEXT?

- A. The engine performance, since the transmission data confirms normal operation and the fuel economy loss must originate from the engine side
- B. The transmission for an incorrect final drive ratio that was installed during a previous axle service, causing higher cruise RPM for the same vehicle speed
- C. The torque converter for an internal fluid circulation issue that wastes energy despite the TCC being fully locked and showing zero slip
- D. The adaptive learning values for elevated corrections that indicate the module is commanding excessive pressure, increasing parasitic pump load

17. A vehicle equipped with a CVT stores DTC P0746 — Pressure Control Solenoid A Performance/Stuck Off. The scan tool shows the module commanding PCS-A at 60% duty cycle, but the internal pressure sensor reads only 200 psi (specification for 60% duty cycle: 400 psi). The technician tests PCS-A resistance at the case connector: 5.5 ohms (specification: 4-7 ohms). What should the technician investigate NEXT?

- A. The EPC solenoid for increased internal resistance that reduces its actual output despite the module commanding the correct duty cycle
- B. The pressure regulator valve for a stuck-open condition that vents fluid before the system can reach the commanded 400 psi target
- C. The pump for excessive internal clearances that prevent it from generating the flow volume needed to reach 400 psi at 60% solenoid command
- D. The valve downstream of PCS-A for a stuck condition that prevents the solenoid's commanded pressure from reaching the internal pressure sensor

18. A vehicle has DTC P0962 — Pressure Control Solenoid A Control Circuit Low — and DTC P0966 — Pressure Control Solenoid B Control Circuit Low — stored simultaneously. Both solenoids share a common power supply feed wire from the TCM relay through a single fuse. The technician checks the fuse — it is intact. The technician then measures voltage at the common feed wire connector under the vehicle: 8.2 volts with the engine running (specification: battery voltage, approximately 14 volts). What does the low voltage at the feed wire indicate?

- A. A high-resistance fault in the common power feed circuit between the fuse and the solenoid connector that is dropping 6 volts across the defective connection
- B. The TCM relay has failed internally and is not closing fully, limiting current flow through its contacts to the solenoid feed circuit
- C. Both solenoid coils have developed partial internal shorts that are drawing excessive current, creating a voltage drop across the feed fuse
- D. The alternator is not producing full voltage output, reducing the available system voltage to all circuits including the transmission solenoid feed

19. A technician reviews adaptive learning data on a vehicle with 85,000 miles. All clutch apply pressure adaptations are at moderate positive values (+8% to +14%). However, the TCC apply pressure adaptation is at its maximum negative correction (-30%). The technician knows that negative TCC adaptation means the module has reduced the commanded TCC apply pressure below the baseline calibration. What driving symptom would the customer MOST LIKELY notice from this maximum negative correction?

- A. Harsh TCC engagement because the reduced pressure causes the clutch to grab suddenly when it finally makes contact instead of engaging smoothly

B. No noticeable symptom because the adaptive system has successfully optimized the TCC engagement quality within the customer's perception threshold

C. A brief TCC shudder during engagement because the reduced pressure produces a slow, marginal clutch contact that oscillates before stabilizing

D. Delayed TCC engagement at highway speed because the reduced pressure takes longer to clamp the converter clutch piston against the friction surface

20. A vehicle equipped with a hybrid powertrain has the following scan tool data during deceleration from 40 mph: Engine = OFF, Motor-Generator 2 Mode = Generating, Regenerative Braking Torque = 85 Nm, Battery SOC = 78%. The vehicle decelerates smoothly. Suddenly, the regenerative braking torque drops to 20 Nm and the conventional friction brakes activate to maintain the same deceleration rate. The battery SOC is now 82%. What triggered the reduction in regenerative braking?

A. The MG2 motor overheated from extended regenerative braking and the system reduced its output to prevent thermal damage

B. The battery SOC reached 82% — approaching the upper charge limit — and the system reduced regenerative charging to prevent overcharging

C. The vehicle speed dropped below the minimum threshold for regenerative braking, forcing the system to transition to friction brakes only

D. The battery SOC rose to 82%, triggering the charge-sustaining mode's upper limit, and the system reduced regenerative charging to prevent battery overcharge

21. A technician scans a vehicle and finds DTC U0073 — Control Module Communication Bus Off — stored in the TCM. Multiple other modules also have communication codes. The transmission is operating in limp mode. The technician unplugs a recently installed aftermarket accessory from the OBD-II port. All communication codes clear and the transmission immediately exits limp mode. What was the aftermarket device doing to cause the bus-wide fault?

A. The aftermarket device was loading the CAN bus with excessive data traffic or electrical interference, disrupting normal module-to-module communication

B. The device was drawing too much current from the OBD-II port power pin, causing a voltage drop that affected all modules on the bus

C. The device's firmware was incompatible with this vehicle's CAN bus protocol version, causing data packet collisions on the network

D. The device was shorting the CAN-High and CAN-Low wires together through an internal defect, collapsing the differential signal on the bus

22. A vehicle has DTC P0741 — TCC System Stuck Off. The technician performs the following tests: TCC solenoid resistance = 14 ohms (spec 10-16 ✓), bidirectional TCC ON command at 55 mph = TCC engages with 0 RPM slip (✓), brake switch transitions correctly (✓), fluid temperature = 195°F (✓), vehicle speed = 55 mph (✓). All TCC engagement prerequisites appear to be met, yet the module does not command TCC ON during normal driving. What additional input should the technician check?

A. The calculated engine load or manifold absolute pressure PID, which may indicate an engine performance issue that the module interprets as insufficient for TCC engagement

B. The ambient air temperature sensor, which may be reading a value that triggers a cold-weather TCC inhibit strategy in the module's logic

C. The throttle position PID for a reading that is out of the TCC engagement window — either too high or too low for the module to command lockup

D. The transmission range sensor voltage for a slight offset that places the Drive signal outside the TCC-enabled voltage window in the module's lookup table

23. A vehicle equipped with a ten-speed automatic transmission produces a brief buzzing vibration felt through the steering wheel during the 6-7 upshift at light throttle. The buzz lasts 0.3 seconds and occurs during the exact shift transition. No other shifts produce any vibration. The scan tool shows TCC ON during the 6-7 shift. The technician commands TCC OFF and repeats the 6-7 shift — the buzz disappears. What does this test result indicate?

A. The TCC is fully engaged during the shift and transmits an engine torsional pulse through the steering column at the specific RPM of the 6-7 transition

B. The TCC solenoid produces electromagnetic interference at the duty cycle used during the 6-7 shift that feeds back through the vehicle's electrical system

C. The 6-7 shift transition changes the engine's loading in a way that produces a torsional vibration that is transmitted through the locked TCC to the steering column

D. The TCC friction surface produces a brief shudder during the momentary torque change of the 6-7 shift, which is transmitted to the steering through the rigid mechanical lock

24. A technician monitors scan tool data and observes the following at 50 mph in 5th gear: Engine RPM = 2,100, Input Shaft Speed = 2,100, TCC Slip = 0 RPM. The technician accelerates moderately. During the acceleration, the TCC releases (TCC Slip increases to 80 RPM), the transmission downshifts to 4th gear, and engine RPM rises to 3,200. After the passing maneuver, the transmission upshifts back to 5th and the TCC re-engages (slip returns to 0). This entire sequence occurred without any DTCs. Is this complete sequence — TCC release, downshift, acceleration, upshift, TCC re-engage — normal?

- A. No — the TCC should remain locked during moderate acceleration to maintain fuel efficiency, and its release indicates a control fault
- B. Yes — the module releases the TCC before the downshift to provide torque multiplication for acceleration, then re-engages after returning to cruise
- C. No — the TCC should release simultaneously with the downshift, not before it, indicating a timing error in the module's shift logic
- D. Yes — but only if the engine RPM exceeded 5,000 during the acceleration, which would trigger a torque-limiting TCC release as a protection measure

25. A vehicle equipped with a stop/start system has the following intermittent complaint: approximately once per week, after the engine automatically restarts at a traffic light, the transmission engages Drive with a harsh "thud" instead of the usual smooth engagement. The remaining restarts during the week are smooth. No DTCs are stored. What is the MOST LIKELY cause of the intermittent harsh restart engagement?

- A. The auxiliary electric pump intermittently fails to maintain adequate clutch holding pressure during certain engine-off events, causing a partial drain-back
- B. The stop/start battery intermittently drops below the threshold for smooth restart, causing a slower crank that produces a torque spike through the drivetrain
- C. The engine's automatic restart occasionally produces a higher-than-normal initial RPM before the idle control stabilizes, overloading the forward clutch
- D. The parking brake occasionally applies partially during the stop/start event, creating resistance that produces a harsh engagement when Drive re-engages

26. A technician is performing a transmission fluid exchange on a vehicle. During the exchange process, the technician notices that the outgoing old fluid is significantly lighter in color than expected for the vehicle's mileage — almost pink, like new fluid. The vehicle has 75,000 miles and no record of a previous fluid service. What could explain the unexpectedly fresh-looking fluid?

- A. The transmission has a sealed-for-life design that uses a synthetic fluid specifically formulated to resist color change over the vehicle's intended service life
- B. The previous owner performed a fluid exchange at an independent shop that did not create a service record accessible to the current technician
- C. The transmission's integral cooling system has maintained the fluid at a consistently low temperature, preventing the thermal degradation that causes darkening
- D. A previous cooler leak allowed engine coolant to mix with the ATF, diluting the color and making the contaminated fluid appear lighter than pure aged ATF

27. A customer reports that the automatic transmission shifts normally during daily driving but produces a harsh 1-2 upshift specifically when the vehicle is driven immediately after being washed at a car wash. The harsh shift resolves within 2 minutes of driving. No DTCs are stored. What is the MOST LIKELY cause?

- A. Water from the car wash temporarily cools the transmission case, causing the fluid viscosity to increase and producing harsher shifts until the fluid rewarms
- B. The car wash's high-pressure spray temporarily moves the shift cable out of adjustment, and engine vibration settles it back into position within 2 minutes
- C. Water entering an external electrical connector or sensor connection temporarily disrupts the signal, causing the module to command incorrect 1-2 shift pressure
- D. The car wash detergent residue on the engine compartment components alters the ground resistance of the transmission case, affecting solenoid current flow

28. A vehicle has a slow transmission fluid leak that the technician has been unable to locate despite multiple inspections. The pan, cooler lines, seals, and case connector all appear dry. The technician adds UV dye to the ATF and drives the vehicle for 50 miles. During the UV inspection, a faint fluorescent trace is found on the inside surface of the bell housing — not at the pump seal or converter area, but along the top of the housing. What does the trace location suggest?

- A. The converter drain plug is leaking and the fluid is running upward along the bell housing from centrifugal force during converter rotation
- B. A transmission case crack or porous casting defect at the top of the bell housing is allowing pressurized fluid to seep through the metal itself

C. The front pump seal is leaking and the converter's rotation flings the fluid upward along the inside of the bell housing by centrifugal action

D. Engine oil from the rear main seal is entering the top of the bell housing and the technician is mistaking engine oil fluorescence for ATF dye

29. A technician replaces the output speed sensor on a transmission. After clearing codes and road-testing, the speedometer reads correctly and all shifts occur at the correct speeds. However, the technician notices that the scan tool's calculated gear ratio in every gear is approximately 5% higher than the manufacturer's specification. What is the MOST LIKELY cause of the uniform 5% ratio offset?

A. The replacement sensor has a different pulse count per revolution than the original, producing a consistent output speed calculation error across all gears

B. The replacement sensor is installed 5% deeper into the case than the original, positioning it closer to the reluctor ring and amplifying its signal output

C. The scan tool's firmware does not match the vehicle's model year and applies an incorrect ratio calculation formula to the speed sensor data

D. The input speed sensor has drifted 5% from its original calibration, and the discrepancy only became apparent after the new output sensor was installed

30. A customer reports that the transmission "pops" out of manual Low selection on the highway when the vehicle is decelerating from 60 mph. The transmission upshifts to a higher gear on its own despite the driver maintaining the Manual Low position. There are no DTCs. What is the MOST LIKELY explanation?

A. The manual valve detent mechanism has worn to the point where hydraulic feedback pressure at high speed pushes the valve out of the Low position

B. The shift cable has stretched so that the manual valve does not fully reach the Low detent, and hydraulic forces push it out at higher speeds

C. The one-way clutch associated with Low gear freewheels at highway speed, and the module commands an upshift to prevent engine over-revving

D. The module's RPM protection logic overrides the manual Low selection at high speed to prevent the engine from exceeding its safe RPM limit

31. A technician is replacing a leaking front pump seal on a rear-wheel-drive transmission. After completing the seal replacement and reinstalling the transmission, the technician notices a new vibration during driving that was not present before the repair. The vibration is speed-dependent and present in all gears and Neutral. What is the MOST LIKELY cause?

- A. The transmission mount was not properly aligned during reinstallation, changing the driveshaft angle and producing a speed-dependent vibration
- B. The driveshaft was reinstalled with incorrect phasing — the yoke ears at the front and rear are not aligned, producing a vibration at vehicle speed
- C. The replacement front pump seal was installed with the lip facing outward, creating a vacuum in the pump that produces vibration through the converter
- D. The torque converter was not fully seated during reinstallation, causing the pump to operate with misaligned gears that vibrate at driving speed

32. A technician discovers that a vehicle's transmission external wiring harness has been repaired with a twist-and-tape splice on the TFT sensor signal wire. Currently, the TFT reads correctly and no DTCs are stored. What is the MOST appropriate action regarding this splice?

- A. Leave the splice undisturbed since it is functioning correctly and any repair risks introducing a new fault into a working circuit
- B. Add a second layer of electrical tape to the existing splice to provide additional moisture protection without disturbing the connection
- C. Monitor the splice at each service visit for signs of deterioration, corrosion, or elevated resistance before performing any repair
- D. Replace the twist-and-tape splice with a properly soldered and heat-shrink sealed connection to ensure long-term reliability

33. A customer states that the transmission "chatters" specifically when starting from a stop on a steep uphill grade. The chatter lasts approximately 1-2 seconds and then smooth acceleration follows. On flat ground, starts are perfectly smooth. There are no DTCs. What is the MOST LIKELY cause?

- A. The forward clutch is marginally worn and chatters briefly under the high torque demand of an uphill start before achieving full clamping grip

- B. The torque converter's TCC is engaging prematurely during the uphill start, creating a bind that produces the chatter before the module releases it
- C. The engine idle speed drops below the minimum threshold on steep uphills, causing the converter to stall momentarily before the throttle compensates
- D. The parking brake is partially applied and creating resistance that produces chatter until the forward clutch torque overcomes the parking brake drag

34. A vehicle has an intermittent harsh engagement into Reverse that occurs approximately once every ten Reverse engagements. The remaining nine are smooth. The scan tool recording shows that during both harsh and smooth Reverse engagements, the EPC solenoid duty cycle and the line pressure sensor reading are identical. What does the identical pressure data during both events tell the technician?

- A. The EPC solenoid is malfunctioning intermittently but the scan tool's sample rate cannot capture the brief pressure spike that causes the harshness
- B. The pressure regulation system is functioning consistently, and the harshness is caused by an engine idle speed variation that affects the engagement load
- C. The pressure data confirms the fault is downstream of the EPC — a sticking reverse accumulator or displaced check ball that intermittently fails to cushion
- D. The identical data proves the harsh engagement is a customer perception issue and not an actual mechanical or hydraulic fault in the transmission

35. A technician is performing an in-vehicle valve body replacement. The service information states that the new valve body requires solenoid calibration codes to be entered into the TCM. The technician enters the codes for all six solenoids, installs the valve body, and road-tests the vehicle. All shifts are smooth except the TCC — it engages harshly at highway speed. The TCC calibration code was entered correctly per the label on the solenoid. What should the technician investigate?

- A. The TCC apply circuit check balls in the case for correct placement, since a displaced ball can cause harsh TCC engagement despite correct calibration
- B. The TCC solenoid for a manufacturing defect where the solenoid's actual characteristics do not match the calibration code printed on its label
- C. The adaptive values, which may need to be reset after the valve body replacement to clear the old TCC engagement corrections from the previous valve body

D. The TCC solenoid calibration code for a possible entry error, and also reset the adaptive values, since the stored TCC corrections from the old valve body are no longer valid

36. A customer reports that the vehicle makes a single "clicking" noise from the transmission area each time the engine is started — before the vehicle is shifted out of Park. The click occurs once during the first 2 seconds after the key is turned to "on" but before the starter is engaged. No other noises are present. What is the MOST LIKELY source of this single click?

A. The transmission range sensor initializing its internal reference position during the module's power-up self-test sequence

B. The shift interlock solenoid activating as the ignition system powers up and the brake-transmission interlock circuit initializes

C. The parking pawl releasing from the parking gear under the pressure buildup from the pump's initial rotation during cranking

D. The torque converter drain-back plug closing as residual fluid pressure pushes it sealed during the initial pump pressurization

37. A vehicle's automatic transmission produces a harsh engagement from Park to Drive only when the engine has been idling in Park for more than 5 minutes. If the driver shifts to Drive within 30 seconds of starting the engine, the engagement is smooth. No DTCs are stored. What is the MOST LIKELY explanation?

A. Extended idle in Park allows the forward clutch circuit to drain back through the valve body, and the sudden refill upon Drive engagement produces the harshness

B. The engine idle speed gradually decreases during the 5-minute Park idle period, and the lower idle RPM produces less converter dampening for the engagement

C. The transmission fluid temperature rises during 5 minutes of idle, reducing fluid viscosity and causing the accumulator circuit to absorb less pressure during engagement

D. The oil pump builds excessive pressure during 5 minutes of idle in Park that is released suddenly when Drive is selected, overwhelming the accumulator circuit

38. A technician is installing a rebuilt transaxle on a front-wheel-drive vehicle. The torque converter has been verified as fully seated with three clicks and correct pad-to-bell-housing depth. As the technician mates the transaxle to the engine, the assembly seats flush with no gap. After torquing all bell housing

bolts, the technician rotates the engine by hand using a socket on the crankshaft bolt. The engine turns freely through two full revolutions. What does the smooth rotation confirm?

- A. The input shaft is properly engaged with the turbine hub and the gear train is not binding against the case or any internal component
- B. The converter is properly seated, the pump drive is engaged, and no converter bolt or internal component is interfering with rotation
- C. The bell housing alignment is correct and the converter pilot is centered in the crankshaft bore without creating binding or runout
- D. The converter bolts have adequate clearance, the pump gears mesh correctly, and no interference exists between rotating and stationary components

39. During a transmission overhaul, a technician discovers that the sun gear shaft has a circumferential wear groove at the location where a Teflon sealing ring rides. The groove is approximately 0.003 inches deep. What is the consequence of not addressing this groove?

- A. The Teflon ring will seat deeper in the groove and provide a tighter seal than the original unworn surface, improving pressure delivery
- B. The groove has no consequence because Teflon rings are designed to accommodate minor shaft surface imperfections through their inherent flexibility
- C. The groove creates a channel where pressurized fluid bypasses the sealing ring, causing pressure loss in the circuit fed through that shaft passage
- D. The groove will cause the Teflon ring to break during installation because the ring must stretch over the sharp edges of the worn area

40. A technician measures oil pump gear tip clearance during an overhaul. The first measurement at the 12 o'clock position reads 0.004 inches. The technician rotates the gears 90 degrees and measures again at the 3 o'clock position: 0.006 inches. The specification maximum is 0.006 inches. What does the variation between the two measurement positions indicate?

- A. Normal gear-to-housing manufacturing tolerance that produces slightly different clearances at different rotational positions around the bore
- B. The pump housing bore has worn unevenly — it is no longer perfectly round — and the gears have more clearance in the worn area than in the unworn area

C. The pump gears have worn on one side from a directional loading pattern that reduces their diameter at the wear point compared to the unworn side

D. The measurement variation is within normal tolerance for the feeler gauge technique and does not indicate any meaningful wear pattern in the pump

41. A technician is assembling a clutch pack during a transmission rebuild. The service manual specifies five friction discs and four steel separator plates for this specific clutch. The rebuild kit contains the correct quantities. After alternating the discs and plates in the drum, the technician discovers that the last component in the stack is a friction disc facing another friction disc — there is no steel plate between the last two friction discs. What assembly error occurred?

A. The technician started the stack with a steel plate instead of a friction disc, which offset the entire alternating sequence by one position

B. The rebuild kit is missing one steel plate due to a packaging error, and the technician must obtain an additional plate before completing the assembly

C. The technician doubled one steel plate earlier in the stack, placing two steel plates together at one position, which left no steel plate for the final position

D. The technician began with the correct first component but accidentally inserted two friction discs at one point in the stack, consuming the extra disc

42. A technician is measuring endplay during transmission reassembly. The specification is 0.020 to 0.040 inches. The first measurement with a 0.060-inch selective thrust washer reads 0.055 inches — well above the maximum specification. What is the technician's FIRST action?

A. Verify the assembly is correct — check that no thrust washer, snap ring, or component is missing that would account for the excessive clearance

B. Install the thickest available selective washer from the rebuild kit to reduce the endplay as much as possible before considering other corrections

C. Disassemble the entire gear train and inspect every thrust washer position for a missing or displaced washer that is causing the excess clearance

D. Order a custom-thickness selective washer that is thick enough to reduce the 0.055-inch endplay to within the 0.020-0.040 specification range

43. A technician discovers during an overhaul that the transmission case has two cup plugs that seal internal fluid passages. One cup plug is slightly recessed below the case surface. The other cup plug is flush with the case surface. Both appear to be properly sealed with no evidence of leakage. Should the technician replace these cup plugs during the overhaul?

A. No — if both plugs show no evidence of leakage and are properly seated, they do not require replacement during a standard overhaul

B. Yes — all cup plugs should be replaced during every overhaul because their seal integrity cannot be visually confirmed without removal

C. Replace only the recessed plug because its position below the surface indicates it was improperly installed or has shifted during service

D. Replace both plugs because the slight difference in their flush positions indicates the case bore has expanded from heat and the plugs may be loose

44. A technician completes a transmission rebuild and installs the valve body. Before installing the pan, the technician performs a preliminary check by starting the engine and shifting through all ranges with the pan off (using a temporary fluid supply). In Drive, all solenoids click when commanded, and line pressure registers on the test gauge. However, the technician notices a steady stream of fluid pouring from one specific accumulator bore in the case — fluid flows out of the bore rather than being contained. What does this indicate?

A. The accumulator bore is cracked and fluid is escaping through the case wall rather than being contained in the bore

B. The accumulator piston and spring were not installed in this bore before the valve body was placed over it

C. The valve body gasket has a misaligned hole that is routing fluid into the accumulator bore from an adjacent high-pressure passage

D. The accumulator piston's O-ring seal was damaged during installation and is allowing fluid to bypass the piston and overflow the bore

45. After installing a rebuilt transmission, filling with fluid, and performing the initial startup, the technician checks for leaks. A small drip is observed at the bell housing-to-case joint on the right side. The drip rate is approximately one drop every 30 seconds. Should the technician be concerned?

- A. No — a minor weep at the bell housing joint is normal for a newly installed transmission and will seal once the gasket fully compresses during the first thermal cycle
- B. No — the drip is likely residual fluid from the installation process that is slowly draining from a trapped pocket on the case surface
- C. Yes — but only if the drip continues after a 30-minute road test and a 1-hour cool-down period that allows residual fluid to fully drain
- D. Yes — any active fluid drip from a gasket joint immediately after installation indicates the gasket is not sealing properly and must be addressed

46. A technician performs a cooler flow test after flushing the cooler following a transmission overhaul. The flow test shows one quart in 15 seconds forward and one quart in 16 seconds reverse — both significantly exceeding the specification minimum of one quart in 25 seconds. The exit fluid is clean with no discoloration. However, during the reverse-direction test, the technician notices three small pieces of hard debris (approximately 1mm each) in the catch container. What should the technician do?

- A. Perform one additional flush cycle in the reverse direction and retest — if no additional debris appears, approve the cooler for service with an inline filter
- B. Replace the cooler immediately because the presence of hard debris confirms embedded contamination that the flushing cannot fully remove
- C. Ignore the debris since the flow rate significantly exceeds specification, indicating the cooler passages are not meaningfully obstructed
- D. Install a fine-mesh inline filter and approve the cooler for service, with instructions to inspect the filter after 500 miles of driving

47. A technician has completed a major transmission overhaul and installation. During the post-installation road test, all shifts are smooth, TCC engages correctly, and fluid temperature is normal. However, the technician notices that when the vehicle is placed in Park on a moderate incline and the brake is released, there is approximately 1 inch of vehicle rollback before the parking pawl catches and holds. Is this amount of rollback normal?

- A. No — the parking pawl should engage with zero rollback, and any movement indicates the pawl or parking gear has not been reassembled correctly
- B. No — the 1-inch rollback indicates the parking gear has rounded teeth that need to be replaced before the vehicle is returned to the customer

C. Yes — a small amount of rollback is normal as the vehicle's weight settles the parking pawl into full engagement with the nearest parking gear tooth

D. Yes — but only for the first few Park engagements after a rebuild, after which the new parking pawl components seat and the rollback decreases to zero

48. A technician discovers during a transmission overhaul that one of the servo bore walls has a light scoring pattern — four evenly spaced vertical scratches running the length of the piston travel. The scratches are barely detectable by fingernail. What MOST LIKELY caused this scoring pattern, and what is the correct action?

A. The four evenly spaced scratches were caused by four foreign particles trapped between the piston and the bore wall during operation

B. The scratches were caused by a damaged piston seal with four hardened contact points that dragged along the bore during piston travel

C. The scratches are manufacturing marks from the bore honing process and are normal — they actually improve oil retention on the bore wall

D. The scoring is too light to affect seal function — install a new piston seal and verify the servo operates correctly during the post-installation test

49. A technician completes a transmission rebuild and installation. During the initial road test, all shifts are smooth and the TCC operates correctly. However, the scan tool shows that the 2-3 clutch adaptive value reaches +22% within the first 10 miles of the re-learn drive. All other clutch adaptations are at +2% to +5%. Is the rapid +22% adaptation on the 2-3 clutch normal?

A. Yes — different clutch circuits learn at different rates, and the 2-3 clutch may simply require more correction than the others for this rebuild

B. Yes — the module initially over-corrects during the early learning phase and will settle back to a lower value within the next 50 miles of driving

C. No — a rapid +22% adaptation within 10 miles indicates the module is not learning correctly and requires a second adaptive reset to restart

D. No — a single clutch reaching +22% while others are at +2% to +5% indicates the 2-3 clutch has a specific deficiency that needs investigation

50. A technician has completed 950 practice questions across nineteen simulation exams. The technician is preparing for the final practice exam before scheduling the ASE A2 certification test. What is the MOST effective approach for the final practice exam?

- A. Take the final exam under timed conditions matching the actual ASE test — 75 minutes for 50 questions — to build test-day time management skills and confidence
- B. Skip the final practice exam and instead review the answer explanations for every question missed across all nineteen previous exams
- C. Focus the final practice exam exclusively on the weakest domain identified across all previous exams to maximize last-minute improvement
- D. Take the final practice exam with an open book and study guide to reinforce the connection between the reference material and the question format

Practice Exam 19: Answer Key and Explanations

1. D — The forward clutch is the single device applied in every forward gear — 1st through 6th. If it fails catastrophically, all forward gears are lost simultaneously because no forward gear can function without it. Reverse uses a completely different set of apply devices that do not include the forward clutch, explaining why Reverse continues to work normally. A sudden, complete failure of this single component — such as a broken piston, shattered snap ring, or fractured drum — explains the instantaneous loss with no prior warning.

2. A — The delay is uniform across every upshift at all throttle levels — a system-wide characteristic, not a circuit-specific one. If the fault were in a single shift valve, accumulator, or clutch circuit, only one or two shifts would be affected. A uniform delay across all upshifts points to something that slows every clutch fill event equally — a marginally weak pump that cannot deliver adequate flow during clutch apply transitions, or slightly low line pressure that extends the time needed to fill each clutch circuit to its clamping threshold.

3. C — The scan tool confirms the transmission is in the correct gear (6th), the ratio matches specification, and the TCC is fully locked with zero slip. The transmission is operating exactly as designed. If the engine RPM seems higher than expected at 60 mph with all transmission parameters verified as correct, the issue is not transmission-related. The engine may have a performance concern — such as a fuel quality issue, ignition timing variation, or accessory drag — that requires higher RPM to maintain speed under load.

4. B — Technician B is correct. Even with the transmission in Neutral, flat-towing rotates the output shaft, which drives the planetary gear sets, bearings, bushings, and thrust washers at road speed. Without the engine running, the pump does not operate, so no ATF circulates to lubricate or cool these rotating components. The metal-to-metal contact generates destructive heat. Technician A's statement that Neutral makes flat-towing safe is incorrect for most modern automatic transmissions without auxiliary pumps.

5. A — The vibration occurs only during the TCC lockup transition, disappears once the TCC is fully locked, and is absent with TCC commanded OFF at the same speed and gear. A correct fluid service 500 miles ago did not resolve the shudder. The bidirectional TCC OFF test eliminates the TCC as the vibration path — proving the shudder originates from the TCC friction surface engagement itself. Since fresh friction modifiers did not fix the problem, the friction material is mechanically worn, glazed, or damaged. The converter must be replaced.

6. C — The clunk requires three simultaneous conditions: (1) the 2-3 shift transition, (2) moderate-to-heavy throttle loading, and (3) the drivetrain connected in Drive (disappears in Neutral). At light throttle, the torque change during the shift is too small to produce the clunk. In Neutral, the drivetrain is unloaded. The clunk requires both the specific torsional change of the 2-3 shift and sufficient torque loading, which together point to a transmission internal component — clutch, band, or planetary element — producing a mechanical impact during the high-torque 2-3 transition.

7. B — Both Drive and Reverse stall speeds are equally elevated above specification. If internal clutch slippage were the cause, both the Drive and Reverse clutch packs would need to be failing by the same amount simultaneously — an unlikely coincidence. Equally elevated stall in both ranges indicates the converter cannot resist the engine's torque as designed. A system-wide hydraulic deficiency — low line pressure from a worn pump, aerated fluid from an air leak, or a stuck-open pressure relief — reduces clutch holding capacity equally in both ranges.

8. D — The progressive flare develops in a single gear (3-4/4th gear only) as the fluid temperature rises during highway driving. No other shifts are affected at any temperature. A system-wide fault would affect multiple shifts, and a solenoid fault would likely produce DTCs. A seal specific to the 4th gear clutch circuit that softens with heat allows progressively more pressure bypass as the elastomeric material reaches operating temperature. The identical 2-hour cool-down recovery confirms the seal contracts and re-seals when cooled.

9. A — Both technicians are correct. The TCC creates a direct mechanical connection by pressing the converter's internal friction disc against the converter cover, locking the turbine to the impeller so they rotate as one unit. This eliminates the 50-150 RPM slip that normally exists in fluid coupling mode.

Eliminating this slip improves fuel economy because 100% of the engine's torque is transmitted mechanically to the input shaft — no energy is wasted as heat in the fluid coupling.

10. B — The vibration is present between 40-50 mph in all driving conditions including engine-off coasting (eliminating engine and transmission as sources). On the lift at 45 mph indicated, the vibration is absent. The critical difference between road driving and lift operation is the vehicle's weight loading the suspension, tires, wheel bearings, and driveline angles against the road surface. The vibration requires this road loading to manifest — indicating tires, loaded wheel bearings, or suspension-dependent driveline angle changes as the source.

11. C — The vehicle moves forward when Reverse is selected — meaning the transmission is engaging a forward drive circuit instead of Reverse. The shift cable or linkage is not moving the manual valve far enough to reach the Reverse detent. The manual valve remains in or near a forward position (Drive or Neutral with residual forward clutch pressure), so the forward clutch stays applied and the vehicle creeps forward. The transmission hardware is functioning correctly — it is simply in the wrong hydraulic range because the valve is not positioned correctly.

12. D — The code sets at various speeds, throttle positions, and gears — no consistent mechanical pattern. The only consistent parameter is fluid temperature: 210-215°F every time. This temperature-specific trigger suggests a component that changes behavior at that temperature threshold. A temperature-sensitive sensor, solenoid, or seal that functions normally below 210°F but develops a fault characteristic above that temperature — such as increased resistance, altered friction, or seal softening — would produce ratio errors exclusively at that temperature regardless of other operating conditions.

13. D — The vehicle is physically moving at 55 mph — the wheels are turning and the engine is running. The input shaft speed reads 1,850 RPM, confirming the turbine is spinning. The output shaft speed reads 0 RPM despite the vehicle clearly moving. A zero reading from a sensor monitoring a shaft that is physically rotating means the sensor is not detecting the rotation. The output speed sensor has failed, its circuit is open, or the reluctor ring is damaged — the sensor produces no signal while the vehicle moves normally.

14. A — The manual 9-10 shift is smooth, proving the 10th gear clutch, hydraulic circuit, and mechanical components are capable of a clean shift. The hesitation occurs only during the automatic 9-10 shift. The automatic and manual modes use different pressure commands, timing strategies, and torque management calibrations. The automatic 9-10 calibration — its specific pressure ramp rate, torque reduction timing, or accumulator control — has a fault that produces the hesitation. The manual mode bypasses this specific calibration and uses a different command path.

15. C — The TCC slip spike coincides exactly with a solenoid duty cycle dropout to 0% for 0.8 seconds. The solenoid should maintain its commanded duty cycle continuously during TCC lockup. A dropout to 0% means the module momentarily lost the ability to drive the solenoid — either the circuit was interrupted (loose pin, corroded terminal, or damaged wire) or the module's driver circuit had a momentary failure. The electrical interruption de-energized the solenoid, which released the TCC for 0.8 seconds until the circuit restored.

16. B — The transmission scan data shows everything within specification: correct gear ratio, zero TCC slip, and no DTCs. If the transmission is operating correctly and the engine is performing within specification, the fuel economy loss must come from another source. An incorrect final drive ratio — installed during a previous axle service, differential repair, or axle replacement — would change the relationship between engine RPM and vehicle speed. A numerically higher ratio forces the engine to run at higher RPM for the same speed, directly reducing fuel economy.

17. D — The solenoid resistance is within specification (5.5 ohms in the 4-7 range), confirming the coil is electrically intact. The module commands 60% duty cycle, but the internal pressure sensor reads only 200 psi instead of the expected 400 psi. Since the solenoid's electrical side is confirmed good, the commanded output is not reaching the measurement point. A stuck valve downstream of the solenoid prevents the solenoid's hydraulic output from reaching the pressure sensor and the affected circuit.

18. A — Both solenoids share a common power feed wire through a single fuse. The fuse is intact (eliminating a blown fuse). The voltage at the feed connector reads only 8.2V instead of the expected 14V — a 6-volt deficit. This voltage drop between the fuse (where battery voltage should be present) and the solenoid connector indicates high resistance in the power feed wire, connector, or splice between these two points. The resistance consumes 6 volts, leaving insufficient voltage to drive both solenoids at their required current levels.

19. A — A maximum negative TCC adaptation (-30%) means the module has reduced TCC apply pressure to its lowest allowable value. The most common reason for negative TCC correction is that the original calibration produced too much pressure, causing harsh TCC engagement or shudder. The module learned to reduce pressure to smooth the engagement. At -30% (maximum negative), the module may have reached the limit of its correction range. The customer would most likely notice no symptom because the adaptive system has successfully optimized the engagement quality.

20. C — During deceleration with regenerative braking, the battery SOC rose from 78% to 82%. Most hybrid systems maintain the battery within a target window (typically 40-80%). As the SOC approached or exceeded the upper limit, the battery management system reduced the charging rate to prevent overcharging. The system reduced regenerative braking torque (from 85 to 20 Nm) because less

electrical energy could be accepted by the nearly full battery. The friction brakes activated automatically to maintain the same deceleration rate the driver expected.

21. A — Removing the aftermarket OBD-II device immediately resolved all communication codes and the limp mode condition. The device was directly responsible for the bus-wide fault. Aftermarket OBD-II devices connect directly to the CAN bus network. A device that loads the bus with excessive data traffic, introduces electrical noise, or imposes incorrect bus impedance disrupts the differential signal integrity that all modules depend on for communication. Removing the device restored normal bus operation instantly.

22. C — All standard TCC prerequisites have been verified: solenoid electrical integrity, bidirectional engagement capability, brake switch, fluid temperature, and vehicle speed. Yet the module does not command TCC ON during normal driving. The module's TCC engagement logic uses throttle position as a key input — the TCC typically engages only within a specific throttle range (light to moderate steady cruise) and will not engage at very low or very high throttle openings. A TPS offset could place the reading outside the TCC engagement window.

23. B — The buzz occurs only during the 6-7 shift and disappears when TCC is commanded OFF at the same shift. The TCC is locked during the shift, creating a rigid mechanical connection between the engine and the input shaft. During the 6-7 transition, the clutch handoff momentarily changes the engine's loading, producing a brief torsional pulse. With the TCC locked, this pulse transmits directly through the drivetrain to the steering column. With TCC OFF, the fluid coupling absorbs the pulse and no buzz is felt.

24. A — The sequence is correct and represents normal transmission operation during a passing maneuver. Before the downshift, the module releases the TCC to provide torque multiplication from the converter — the additional torque multiplication aids acceleration. The transmission then downshifts to 4th for the lower gear ratio's additional mechanical advantage. After the passing maneuver, the transmission upshifts back to 5th for cruise efficiency and re-engages the TCC to eliminate converter slip. This coordinated sequence maximizes acceleration when needed.

25. D — The harsh restart engagement occurs approximately once per week — intermittently. The most common cause of intermittent harsh restart engagement in stop/start vehicles is the auxiliary electric pump intermittently failing to maintain adequate clutch holding pressure during certain engine-off events. The pump may have a marginal electrical connection, a worn motor that occasionally underperforms, or a check valve that intermittently allows drain-back. Most restarts are smooth because the pump usually maintains adequate pressure.

26. D — Transmission fluid that appears unusually fresh — nearly pink at 75,000 miles — raises a red flag for contamination rather than a positive finding. A previous cooler leak that allowed engine coolant to mix with the ATF would dilute the fluid's color, making contaminated fluid appear lighter than normal aged ATF. The technician should check the coolant for ATF contamination and test the cooler integrity before completing the exchange with fresh fluid.

27. C — The harsh 1-2 shift occurs immediately after the car wash and resolves within 2 minutes. High-pressure water from the car wash can enter exposed electrical connectors or splash onto sensor connections on the transmission case. The moisture temporarily disrupts the signal quality — particularly the throttle position or speed sensor signal — causing the module to command incorrect 1-2 shift pressure for 1-2 minutes until engine compartment heat evaporates the moisture and restores normal signal integrity.

28. C — The fluorescent trace is found on the inside surface of the bell housing at the top — away from the pump seal and converter drain plug. The front pump seal rides on the converter hub, which rotates at engine speed. When the seal leaks, the rotating converter hub flings the escaping fluid outward and upward by centrifugal force, spraying it along the inside of the bell housing. The fluid trace at the top of the housing is the deposition pattern from this centrifugal spray.

29. A — The speedometer reads correctly (suggesting adequate compensation in the speedometer system), but the scan tool's calculated gear ratio in every gear is uniformly 5% higher than specification. A replacement output speed sensor with a different pulse count per revolution than the original produces a consistent speed calculation error. If the new sensor produces fewer pulses per revolution, the module calculates a lower output speed, which inflates the ratio calculation ($\text{ratio} = \text{input} \div \text{output}$) equally across all gears.

30. D — The module overrides the driver's manual Low selection at highway speed to prevent engine damage. At 60 mph, holding 1st gear would push the engine to an RPM that exceeds its safe operating limit. The module's RPM protection logic commands an upshift regardless of the driver's manual selection. This is a designed safety feature — not a cable, detent, or clutch fault. The manual Low selection works correctly at appropriate lower speeds where the engine RPM remains within safe limits.

31. A — The vibration is speed-dependent, present in all gears and Neutral, and appeared immediately after the transmission reinstallation. During the removal and reinstallation, the transmission mount position and alignment determine the driveshaft operating angle. If the mount was not properly aligned during reinstallation — shifted slightly in its slotted mounting holes — the resulting driveshaft angle change produces a speed-dependent vibration. Checking and correcting the mount alignment and driveshaft angle is the first step.

32. D — A twist-and-tape splice on the TFT sensor signal wire currently functions but is vulnerable to moisture intrusion, progressive corrosion, increased resistance, and eventual failure from vibration. The TFT signal directly affects the module's shift pressure commands, TCC engagement strategy, and thermal protection logic. A failed TFT splice could produce erratic shifting, false DTCs, or failure to detect overheating. Replacing the splice with a properly soldered and heat-shrink sealed connection ensures long-term reliability of this critical signal circuit.

33. A — The chatter occurs only during uphill starts — when the engine must produce significantly more torque to accelerate the vehicle against gravity. On flat ground, the lower torque demand allows the forward clutch to engage smoothly. A marginally worn forward clutch that holds adequately under normal torque loads cannot hold the instantaneous peak torque of an uphill launch. The clutch alternately grabs and slips for 1-2 seconds until the apply pressure builds enough to fully clamp the worn friction surfaces.

34. C — The EPC solenoid duty cycle and line pressure sensor readings are identical during both harsh and smooth Reverse engagements. This confirms the pressure regulation system delivers the same pressure consistently every time. Since the pressure input to the reverse circuit is identical, the variable that changes between harsh and smooth events must be downstream of the EPC — in the Reverse-specific cushioning circuit. A sticking accumulator piston or displaced check ball intermittently fails to absorb the pressure spike.

35. D — The solenoid calibration code was entered correctly per the label, but the TCC engages harshly. Two issues may be at play: the calibration code entry should be double-checked for any transcription error, and the adaptive values from the old valve body must be reset. The module's stored TCC engagement corrections were learned for the old solenoid's characteristics. Applying those corrections to the new solenoid produces incorrect pressure commands. Both verifying the code entry and resetting the adaptive values address the two most likely causes.

36. B — The click occurs when the ignition is turned to ON — before the engine cranks and before the pump operates. This is an electrical event, not a hydraulic or mechanical transmission event. The shift interlock solenoid activates during the ignition power-up sequence as part of the brake-transmission interlock system initialization. The solenoid's plunger movement produces the single click as it transitions from its de-energized to energized state during the module's power-up self-test.

37. A — The harsh engagement occurs only after 5 minutes of idle in Park — the time-dependent drain-back pattern is the key diagnostic clue. During extended idle in Park, the manual valve blocks the forward clutch feed passage. The forward clutch circuit slowly drains back through the valve body passages under the return spring's force over the 5-minute period. When Drive is selected, the pump

must rapidly refill the empty circuit. The sudden fluid rush into the piston bore produces the harsh engagement because the accumulator cannot cushion the abrupt pressure rise.

38. D — Smooth engine rotation through two full revolutions with the transmission bolted to the engine confirms no mechanical interference exists between the converter and any stationary component. The converter bolts have adequate clearance (no bolt is too long and contacting the pump or case), the pump gears mesh correctly with the converter drive (the converter seats properly and the pump is not jammed), and no misalignment exists between the engine and transmission that would cause binding.

39. C — A circumferential wear groove at the Teflon ring location creates a channel for pressurized fluid to bypass the sealing ring. The ring sits in the groove but cannot seal the gap between the ring OD and the groove bottom. Pressurized fluid from the high-pressure side of the circuit leaks through the groove to the low-pressure side, reducing the effective pressure delivered to the downstream clutch or servo. This pressure loss causes slippage or delayed engagement in the circuit fed by that shaft passage.

40. B — A 0.002-inch difference in tip clearance between the 12 o'clock and 3 o'clock positions (0.004 vs. 0.006) indicates the pump housing bore is no longer perfectly round — it has worn into a slightly oval shape. The gears have more clearance at the worn area (0.006 at 3 o'clock) and less at the unworn area (0.004 at 12 o'clock). The 3 o'clock reading of 0.006 is at the maximum specification limit. An out-of-round bore reduces pump efficiency because the gear tips cannot seal uniformly around the entire circumference.

41. A — With five friction discs and four steel plates in an alternating stack, the correct sequence starts with a friction disc and alternates: F-S-F-S-F-S-F-S-F. If the technician started with a steel plate instead: S-F-S-F-S-F-S-F-S — the last position would need a friction disc, but the sequence would have the wrong first component against the piston or pressure plate. Starting with the wrong first component offsets the entire alternating pattern, leaving two identical components adjacent at the end.

42. A — An endplay measurement of 0.055 inches with a 0.060-inch washer is 0.015 inches above the maximum specification of 0.040. Before simply installing a thicker washer, the technician should verify the assembly is correct. A measurement this far above specification may indicate a missing component — a thrust washer not installed, a snap ring not fully seated, or a component installed in the wrong position. Simply installing a thicker selective washer could mask an assembly error that would cause other problems.

43. A — Cup plugs that are properly seated with no evidence of leakage do not require routine replacement during a standard overhaul. The slight difference in flush position (one slightly recessed,

one flush) is within normal installation variation and does not indicate a sealing problem. Removing properly sealed cup plugs risks damaging the case bore during removal, which creates a new sealing problem. If the plugs show no evidence of leakage, they should be left in place.

44. B — Accumulator pistons in this transmission are housed in case bores and must be installed with their springs before the valve body is placed over them. If the piston and spring were not installed in this specific bore, the bore is open — fluid that should be contained behind the accumulator piston instead flows freely through the bore and out the bottom. The valve body must be removed, the piston and spring installed in the bore, and the valve body reinstalled.

45. D — An active drip at one drop every 30 seconds from a gasket joint immediately after installation is a genuine leak — not residual fluid. Residual installation fluid would be random and diminish quickly. A consistent drip rate from a specific gasket joint indicates the gasket is not sealing at that location. The cause may be a gasket that shifted during installation, a case surface imperfection, an incorrect torque sequence, or a missing gasket section. The joint must be addressed before the vehicle is returned to the customer.

46. A — The flow rates significantly exceed specification in both directions and the exit fluid is clean — the cooler is functionally adequate. However, three small hard debris pieces appeared during the reverse-direction test, indicating residual contamination is still present deep in the core. One additional flush cycle in the reverse direction should dislodge any remaining loose debris. If the retest produces no additional debris, the cooler can be approved for service with an inline filter as a precautionary measure.

47. C — A small amount of vehicle rollback — approximately 1 inch — before the parking pawl engages and holds is normal. The parking pawl does not engage until the output shaft rotates enough for the pawl to drop into the nearest tooth gap on the parking gear. Depending on where the output shaft stopped relative to the gear teeth, the vehicle may roll slightly before the pawl finds and seats in the next available tooth. Once seated, the pawl holds firmly.

48. D — Four evenly spaced light scratches that are barely detectable by fingernail represent minor surface marks that do not create a significant leak path for the piston seal. At this severity, the scratches are shallow enough that a properly installed new O-ring seal can bridge them without significant pressure bypass. The technician should install a new piston seal, assemble the servo, and verify correct operation during the post-installation road test.

49. D — All other clutch adaptations settled at +2% to +5% within the same 10-mile re-learn period, indicating those circuits matched the module's baseline expectations closely. The 2-3 clutch reaching

+22% in the same distance indicates the module must significantly increase pressure above baseline to achieve the target 2-3 shift quality. This disproportionate correction points to a specific deficiency in the 2-3 circuit — incorrect clutch clearance, a cushioning fault, or a component assembly error that warrants investigation.

50. A — With 950 questions completed and consistent 86% scores, the technician has strong content knowledge. The most effective use of the final practice exam is to simulate actual test conditions — 75 minutes for 50 questions — to build time management skills and test-day confidence. The timed condition reveals whether the technician can maintain accuracy under pressure and complete all questions within the allotment, which is a critical skill the untimed practice exams cannot develop.