PRACTICE EXAM 4: ASE A2 SIMULATION (50 QUESTIONS)

1. A vehicle equipped with a five-speed automatic transmission operates normally in all forward gears except 2nd. When the transmission shifts from 1st to 2nd, the engine RPM increases sharply but vehicle speed does not increase proportionally. The shift from 1st to 3rd (skipping 2nd) occurs after a brief delay. Which of the following BEST describes this condition?

A. A tie-up between the 1st and 2nd gear apply devices causing momentary double engagement

B. A delayed accumulator in the 2nd gear circuit slowing the clutch apply beyond its window

C. The 2nd gear holding device is slipping and unable to maintain the gear ratio under load

D. A shift solenoid stuck in the on position that prevents the valve body from routing fluid correctly

2. A technician performs a stall test on a vehicle and the stall RPM matches the manufacturer's specification exactly. The customer complains of poor acceleration from a stop. Based on the stall test result, which of the following conclusions is MOST accurate?

A. The engine, torque converter, and transmission clutches are all functioning normally at stall load

B. The torque converter stator is freewheeling and not providing adequate torque multiplication

C. The transmission clutch packs are slipping but only at speeds above the stall test condition

D. The engine has an exhaust restriction that limits RPM only during vehicle acceleration events

3. A vehicle with a rear-wheel-drive automatic transmission develops a vibration that occurs at exactly 45 mph regardless of engine RPM, gear range, or throttle position. The vibration is present in Drive, Neutral, and with the engine off while coasting. Which of the following is the MOST LIKELY source?

A. A worn torque converter thrust bearing that resonates at a specific frequency under load

B. A planetary gear set with chipped teeth that produces vibration at a specific output speed

C. An oil pump with a damaged gear that produces pulsation at a specific flow rate condition

D. A driveshaft balance problem or worn U-joint that produces vibration at a specific road speed

4. Technician A says that transmission fluid should be checked on a level surface for an accurate reading. Technician B says that checking fluid level with the engine running circulates fluid through the system and provides a more accurate reading than checking with the engine off. Who is correct?

A. Technician A only

B. Technician B only

C. Neither Technician A nor Technician B

D. Both Technician A and Technician B

5. A vehicle exhibits a shudder from the drivetrain only during moderate acceleration from 15 to 25 mph in 2nd gear. The shudder disappears above 25 mph and is not present during light or heavy acceleration. There are no DTCs stored. Which of the following is the MOST LIKELY cause?

A. A worn 2nd gear band that cannot hold steady under moderate torque but grips at light or heavy load

B. A failing torque converter with worn internal bearings that are loaded specifically in this speed range

C. A damaged driveshaft center bearing that vibrates at the specific driveshaft RPM produced at that speed

D. A contaminated 2nd gear clutch pack with uneven friction material causing grab-slip-grab under load

6. A customer states that the transmission "slams" into gear when shifting from Park to Drive after the vehicle has sat overnight, but the engagement is smooth after the first shift. There are no DTCs stored and the fluid level is correct. Which of the following BEST explains this condition?

A. The forward clutch piston seals drain overnight, requiring the first application to refill the circuit rapidly

B. The oil pump needs several seconds to prime after sitting overnight and cannot cushion the first shift

C. The torque converter empties while parked, and the sudden refill creates hydraulic hammer at engagement

D. The pressure regulator valve sticks in the high-pressure position until fluid warms and loosens the valve

7. A technician connects a pressure gauge to the main line pressure test port. At idle in Drive, the reading is 68 psi, which is within specification. The technician then commands the EPC solenoid to increase line pressure using a bidirectional scan tool test. The pressure gauge reading does not change. What does this test result indicate?

A. The oil pump is producing the maximum pressure it is capable of at the current engine idle speed

B. The scan tool bidirectional command is not compatible with this specific transmission model year

C. The pressure regulator valve, the EPC solenoid, or the circuit between them is not responding correctly

D. The pressure is already at its maximum regulated level and cannot be increased further by the EPC

8. A vehicle's automatic transmission produces a metallic rattling noise only when the transmission is in Reverse at idle. The noise disappears immediately when shifted to Neutral, Park, or any forward gear. What is the MOST LIKELY source of this noise?

A. A cracked flexplate that resonates only under the specific torsional load of reverse gear engagement

B. A loose or broken component within the reverse apply circuit that vibrates when pressurized in Reverse

C. A worn planetary gear tooth that contacts a damaged component only during reverse gear rotation

D. A torque converter with broken damper springs that rattle only when reverse pressure is applied

9. A technician is road testing a vehicle and observes that the transmission holds each gear longer than expected before upshifting — the engine reaches 4,500 RPM before each upshift at moderate throttle. Normal upshift RPM at this throttle position should be approximately 2,800 RPM. There are no DTCs stored. Which of the following is the MOST LIKELY cause?

A. A worn forward clutch pack that slips during the upshift, causing the module to delay subsequent shifts

B. A throttle position sensor that reads higher than the actual throttle opening, delaying the upshift schedule

C. An output speed sensor reporting double the actual vehicle speed, triggering premature shift commands

D. A failing transmission control module that has corrupted its internal shift schedule lookup tables

10. A vehicle with a four-speed automatic transmission loses all forward gears simultaneously — no forward movement in any range — but Reverse functions normally with full power. Fluid level is correct. Which single component failure would MOST LIKELY cause this condition?

A. A failed forward clutch or a complete loss of hydraulic pressure in the forward clutch circuit

B. A broken input shaft that has separated inside the transmission between the forward and reverse circuits

C. A worn oil pump that generates insufficient pressure for forward gears but adequate pressure for Reverse

D. A stuck manual valve that routes pressure to the Reverse circuit regardless of the gear selector position

11. Technician A says that aerated transmission fluid can cause erratic shifting and delayed engagements. Technician B says that an overfilled transmission can cause fluid aeration from internal components churning the fluid. 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 vehicle has a DTC P0776 — Pressure Control Solenoid B Performance/Stuck Off. The transmission shifts normally in 1st, 2nd, and 3rd gears, but the 3-4 upshift is extremely harsh. The scan tool shows PCS-B duty cycle drops to 0% during the 3-4 shift despite the module commanding 45%. Which of the following is the MOST LIKELY cause?

A. The 4th gear clutch friction material is worn and requires higher pressure to prevent slippage

B. The transmission control module has a failed internal driver for the PCS-B output circuit

C. The 3-4 accumulator piston has seized in its bore, eliminating shift cushioning for that transition

D. The PCS-B solenoid or its circuit has an electrical fault preventing it from responding to the commanded duty cycle

13. A technician is diagnosing an intermittent transmission concern using the scan tool's data recording function during a road test. The recording shows that at the exact moment of the intermittent shift problem, the engine RPM PID drops to zero for 0.3 seconds and then returns to its normal value. All other PIDs remain stable during this event. What does this data pattern indicate?

A. A momentary loss of the engine RPM signal from the CAN bus, likely due to an intermittent ECM communication fault

B. An actual engine misfire event that temporarily drops crankshaft speed to zero during the shift

C. A transmission control module glitch that corrupts the engine RPM PID during high processing loads

D. A faulty input speed sensor that is cross-feeding its signal into the engine RPM data channel

14. A vehicle owner complains that the transmission "gets stuck" and will not upshift past 3rd gear during highway driving. The malfunction indicator lamp illuminates after approximately five minutes of driving. A scan reveals DTC P0722 — Output Speed Sensor No Signal. The technician replaces the output speed sensor, clears the code, and road tests. The code returns within three miles. What should the technician investigate NEXT?

A. A worn input shaft or component that is generating incorrect signal, and the wiring harness, and the damaged reluctor ring on the output shaft

B. The replacement sensor to verify it is the correct part number and matches the original specifications

C. The transmission control module for a failed internal input circuit that cannot read any speed sensor

D. The wiring harness and connector between the new sensor and the control module for damage

15. A scan tool displays the following data while a vehicle is cruising at 55 mph in 5th gear: Engine RPM = 2,200, Input Shaft Speed = 1,650, Output Shaft Speed = 1,650. What can the technician determine from the relationship between Engine RPM and Input Shaft Speed?

A. The torque converter clutch is stuck in the applied position and is not releasing under cruise conditions

B. The input speed sensor has failed and is defaulting to the output speed sensor value as a substitute

C. The torque converter clutch is operating in a controlled slip mode with approximately 550 RPM of designed slip

D. The engine RPM is too high for this gear and vehicle speed, indicating the transmission is in the wrong gear

16. A vehicle with a six-speed automatic transmission shifts normally in fully automatic mode but will not respond to manual gear selections made through the console-mounted paddle shifters. The scan tool shows the transmission range sensor reads "D" regardless of paddle shifter input. Which of the following is the MOST LIKELY cause?

A. A faulty paddle shifter module or wiring that is not communicating the manual shift request to the TCM

B. A misadjusted transmission range sensor that is stuck on the Drive reading and blocking manual input

C. A failed shift solenoid that mechanically prevents the valve body from changing from the automatic pattern

D. A control module software error that has disabled the manual shift feature due to an unrelated DTC

17. A technician observes that a vehicle's transmission has adapted its 1-2 upshift to occur 400 RPM later than the factory calibration over the past 80,000 miles. The shifts themselves feel smooth and normal. What does this progressive adaptation indicate?

A. The throttle position sensor has drifted out of calibration, requiring replacement and readaptation

B. The control module has gradually delayed the upshift to compensate for reduced clutch holding capacity

C. The output speed sensor is reading progressively slower, making the module believe the vehicle is going slower

D. The shift solenoid response time has slowed from wear, causing a natural delay in shift execution

18. Technician A says that a DTC stored in the engine control module can never cause a transmission shifting problem. Technician B says that a misfire code in the ECM may cause the PCM to alter transmission shift strategy to protect the drivetrain. Who is correct?

A. Technician A only

B. Both Technician A and Technician B

C. Neither Technician A nor Technician B

D. Technician B only

19. A vehicle equipped with an automatic transmission produces a check engine light and stores DTC P0720 (Output Speed Sensor Circuit) and P0730 (Incorrect Gear Ratio) simultaneously. The technician observes that the transmission appears to shift normally by feel during a road test. What is the MOST LIKELY explanation for both codes being present?

A. The transmission has a severe internal mechanical failure that happens to produce normal-feeling shifts

B. The forward clutch is dragging slightly, causing a minor ratio error that the driver cannot perceive

C. The output speed sensor is providing an incorrect signal, causing the module to miscalculate the gear ratio

D. The control module has a software fault that is setting false codes unrelated to actual system performance

20. A technician is testing a transmission range sensor using a digital multimeter. The voltage output reads 3.2 volts in Park, 2.8 volts in Reverse, 2.4 volts in Neutral, and 2.0 volts in Drive. When the lever is moved slowly from Neutral toward Drive, the voltage drops smoothly from 2.4 to 2.0 volts with no sudden jumps or dropouts. What does this test indicate?

A. The sensor has a dead spot between Neutral and Drive that will cause intermittent starting problems

B. The sensor is producing a clean, proportional signal with no dead spots, indicating it is functioning correctly

C. The voltage values are too close together and will cause the module to confuse adjacent gear positions

D. The sensor output should increase from Park to Drive, not decrease, indicating it is wired in reverse

21. A vehicle has a DTC P0740 — Torque Converter Clutch Circuit Malfunction stored as a history code. The customer reports no current symptoms and the technician cannot reproduce any TCC-related concerns during an extended road test. What is the appropriate action?

A. Clear the code, document the findings, and advise the customer to return if symptoms develop

B. Replace the TCC solenoid as a preventive measure since the code confirms solenoid degradation

C. Replace the torque converter since a history code indicates internal converter damage has occurred

D. Reflash the transmission control module with the latest software to prevent the code from recurring

22. A vehicle with a continuously variable transmission (CVT) has a customer complaint of a loud whining noise during acceleration that changes pitch with engine RPM. The noise is not present at idle in Park or Neutral. Which of the following is the MOST LIKELY cause?

A. A failing CVT belt that is stretching under load and producing noise as it slips on the pulleys

B. A damaged CVT secondary pulley bearing that loads up only when torque is applied through the belt

C. A worn CVT fluid pump that cavitates under the increased demand of acceleration conditions

D. A worn or damaged CVT primary pulley bearing or belt/chain that is loaded during acceleration

23. A vehicle equipped with a dual-clutch transmission (DCT) exhibits shudder and hesitation when creeping forward at very low speeds in stop-and-go traffic. The concern is not present during normal acceleration or highway driving. Which of the following BEST explains this condition?

A. A worn synchronizer in the 1st gear position that cannot fully engage during low-speed operation

B. A failing electric motor in the DCT hydraulic pump that reduces clamping pressure at idle speed

C. The DCT clutch is slipping during precise low-speed modulation due to worn friction material or degraded fluid

D. A faulty wheel speed sensor that causes the stability control system to interfere with low-speed drivetrain engagement

24. A vehicle has a stop/start system that was previously functioning normally but now refuses to shut the engine off at traffic stops. The stop/start indicator on the dashboard shows "System Not Available." There are no engine or transmission DTCs stored. Which of the following is the MOST LIKELY cause?

A. A weak or degraded stop/start battery that cannot support the electrical loads during engine-off periods

B. A failed auxiliary transmission fluid pump or its circuit, causing the module to disable the stop/start function

C. A software update that has inadvertently disabled the stop/start feature in the body control module

D. A clogged cabin air filter that is reducing HVAC efficiency and triggering the stop/start inhibit condition

25. A technician is comparing scan tool data between two identical vehicles — one with 10,000 miles and one with 110,000 miles. The higher-mileage vehicle shows clutch apply pressure adaptation values that are significantly higher than the low-mileage vehicle across all clutch circuits. What does this comparison indicate?

A. The higher-mileage vehicle's clutch friction material has worn, requiring more pressure to achieve the same engagement

B. The higher-mileage vehicle's pressure control solenoid has worn and is delivering more pressure than commanded

C. The higher-mileage vehicle has a more aggressive driver whose driving style triggers higher adaptation values

D. The lower-mileage vehicle has a defective adaptive system that has not yet begun learning corrections

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26. A technician replaces the transmission filter during a routine fluid service. After reassembly and refilling, the transmission produces a loud whining noise at idle that was not present before the service. The noise increases in pitch with engine RPM. Which of the following is the MOST LIKELY cause?

A. The new filter has a different flow capacity than the original and is restricting pump intake volume

B. The pan bolts were over-torqued, compressing the filter against the valve body and restricting its intake

C. The replacement filter is defective and has a collapsed internal element blocking fluid flow

D. The filter O-ring is damaged or missing, allowing the pump to draw air and creating cavitation noise

27. A customer reports that the vehicle rolls backward on an incline when the transmission is in Drive and the brake is released, before eventually creeping forward. There are no DTCs, and the fluid level and condition are normal. What is the MOST LIKELY cause?

A. A delayed forward clutch engagement caused by a partially drained clutch apply circuit or weak pump output

B. A worn parking pawl that does not fully disengage when shifting from Park to Drive on an incline

C. A failing torque converter that cannot provide adequate fluid coupling force at idle to overcome the grade

D. A misadjusted idle speed that is set too low to provide sufficient torque through the converter at rest

28. A technician is performing a transmission fluid service and notices the pan bolts are a mix of different lengths. Some bolts are 20mm and others are 30mm. The technician cannot determine which bolt goes in which location. What is the correct action?

A. Install all bolts uniformly using the longest bolt length available to ensure maximum thread engagement

B. Install bolts by trial and error, checking each location for proper fit before final torquing

C. Consult the manufacturer's service information for the correct bolt length and location diagram

D. Replace all pan bolts with a single uniform length that provides at least three full threads of engagement

29. A vehicle equipped with a column-mounted shift lever has excessive play in the shift lever — it moves approximately two inches side to side before the gear selection changes. Shifting through all positions produces the correct gear engagement. What is the MOST LIKELY cause of the excessive play?

A. A worn manual valve inside the transmission that has excessive clearance in its valve body bore

B. Worn bushings, grommets, or pivot points in the shift linkage mechanism at the steering column

C. A damaged transmission case bore where the manual shaft passes through the case wall

D. A loose transmission mount that allows the entire case to shift position relative to the linkage

30. A technician discovers that a transmission cooler line quick-connect fitting will not seat properly at the radiator connection. The fitting slides onto the radiator tube but does not click or lock into position. What should the technician check?

A. The radiator tube outer diameter for damage, corrosion, or debris that prevents the fitting from seating

B. The quick-connect fitting for a broken internal spring that has lost its clamping force entirely

C. The transmission system pressure to ensure it is not too high for the quick-connect fitting rating

D. The internal locking collet or retaining clip inside the fitting for damage, debris, or improper seating

31. A technician replaces the transmission range sensor on a vehicle. After installation, the engine starts in Park but the vehicle has no forward or reverse gear engagement. The shift lever moves freely through all positions. What did the technician MOST LIKELY fail to do?

A. The technician did not properly connect the shift linkage or cable to the manual shaft lever after sensor installation

B. Adjust the new range sensor to align its internal reference points with the manual shaft positions

C. Enter the new sensor's calibration code into the transmission control module through the scan tool

D. Reset the adaptive values after installing the new sensor, causing the module to reject all shift commands

32. A customer reports that the transmission engagement into Drive is sometimes smooth and sometimes accompanied by a noticeable clunk. The clunk occurs randomly with no predictable pattern. Fluid level and condition are normal and no DTCs are stored. What should the technician investigate FIRST?

A. The engine and transmission mounts for a collapsed or broken mount that allows excessive movement intermittently

B. The forward clutch pack clearance for a marginal measurement that causes inconsistent engagement feel

C. The idle speed for fluctuations that change the amount of rotational energy at the moment of engagement

D. The pressure control solenoid for an intermittent electrical fault that varies the engagement pressure randomly

33. A vehicle's transmission has a persistent small leak that leaves drops of red fluid on the ground near the center of the vehicle. The leak does not originate from the pan, cooler lines, or any visible fitting. What additional leak source should the technician inspect?

A. The valve body-to-case gasket for an internal leak that routes fluid externally through a case passage

B. The torque converter housing for a pinhole that weeps fluid under pressure during engine operation

C. The speedometer drive gear housing or vehicle speed sensor O-ring for a weeping seal at the case

D. The transmission vent for fluid expulsion caused by overfilling, internal pressure, or a clogged vent tube

34. A technician needs to replace a solenoid on a valve body that uses individual bolt-mounted solenoids. The replacement solenoid has a part number that matches the transmission, but the solenoid body is stamped with a different calibration code than the original. Which of the following is the correct procedure?

A. Install the new solenoid and use the original calibration code since it matched the previous operation

B. Return the solenoid for one with an identical calibration code to avoid any programming requirements

C. Install the new solenoid and enter its specific calibration code into the control module via the scan tool

D. Install the solenoid and perform an adaptive reset, which will automatically compensate for the code difference

35. A technician inspects the transmission external wiring harness and finds that the case pass-through connector has a thin film of ATF on its exterior surface. None of the external terminals show corrosion and all circuits test within specification. What does the ATF film on the connector indicate?

A. Normal condensation that has mixed with road grime and resembles transmission fluid in appearance

B. A failing case connector seal that is allowing fluid to wick along the internal harness and out the connector

C. An overfilled transmission that is pushing excess fluid out through any available path including the connector

D. Residual fluid from a previous service that was spilled near the connector and has not been cleaned off

36. A vehicle's automatic transmission exhibits a delayed engagement into Drive only when the engine is first started cold. After the initial engagement, all subsequent Park-to-Drive shifts during the same

driving session engage within one second. There are no DTCs stored. Which of the following is the MOST LIKELY cause?

A. Cold fluid viscosity that delays the pump's ability to build initial pressure after a cold soak period

B. A clogged filter that restricts flow until the fluid warms and becomes less viscous during operation

C. A worn forward clutch piston seal that leaks more when cold due to contraction of the seal material

D. The forward clutch piston draining back during extended parking periods, requiring the circuit to refill on first engagement

37. A technician discovers that a vehicle's shift cable bracket on the transmission has cracked, allowing the cable housing to move slightly during gear changes. The transmission still engages all gears. What symptom is this cracked bracket MOST LIKELY to produce?

A. Inconsistent manual valve positioning that causes the gear indicator to read one position off intermittently

B. A harsh engagement in all gears because the cable slack delays engagement and causes a snap-into-gear feel

C. Premature cable failure from the excessive flexing caused by the unsupported cable housing movement

D. No symptoms as long as the cable itself is intact and the manual valve reaches each detent position

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38. A technician is preparing to install a rebuilt automatic transmission in a vehicle. The torque converter is placed on the input shaft and pushed in. The technician feels two distinct engagement clicks but cannot achieve a third. What should the technician do?

A. Install the transmission as-is since two engagements are sufficient for most transmission designs

B. Apply transmission assembly lubricant to the input shaft splines and force the converter in with a rubber mallet

C. Rotate the converter while applying gentle inward pressure to align the remaining spline set for full engagement

D. Remove the converter and inspect the pump drive, stator shaft, and input shaft for damage or misalignment

39. During a transmission overhaul, a technician finds that one of the band anchor pins in the transmission case has been pushed partially out of its bore by the force of the band applying repeatedly over the life of the transmission. The pin is loose but not broken. What is the correct action?

A. Replace the anchor pin and verify it seats fully in its bore to restore proper band anchor support

B. Apply thread-locking compound to the pin and press it back into its original position in the case

C. Replace the entire transmission case since a loose anchor pin indicates case bore fatigue and weakness

D. Discard the band and convert the transmission to use only clutch packs for the affected gear range

40. A technician is measuring clutch pack clearance on a direct clutch during reassembly. The first measurement shows 0.070 inches, which exceeds the maximum specification of 0.055 inches. The thickest available selective snap ring has already been installed. What additional action can the technician take?

A. Stack two snap rings together in the groove to make up the additional thickness required for clearance

B. Add an additional steel separator plate to the clutch pack stack to reduce the measured clearance

C. Install a thicker selective pressure plate, if available, in combination with the thickest snap ring

D. Leave the clearance as measured since the thickest available snap ring represents the maximum correction

41. A technician is inspecting a servo during transmission overhaul. The servo piston moves freely in its bore and the seals are being replaced. However, the apply pin is visibly bent approximately 5 degrees from straight. What is the correct action?

A. Straighten the apply pin in a vise using a hydraulic press and verify straightness with a straight edge

B. Install the pin as-is since a 5-degree bend is within the acceptable tolerance for servo apply pins

C. Replace the entire servo assembly including the bore sleeve, piston, seals, and spring as a complete unit

D. Replace the apply pin because a bent pin will not apply the band evenly, causing partial engagement and slippage

42. A technician discovers during a transmission overhaul that the parking pawl return spring is broken. The parking pawl itself appears to be in good condition. What is the consequence of reassembling the transmission without replacing the spring?

A. The parking pawl will engage but will not hold the vehicle on steep grades due to reduced spring tension

B. The parking pawl may not fully disengage from the parking gear when shifting out of Park, causing a grinding noise or binding

C. The transmission will function normally in all driving conditions but the Park indicator will not illuminate on the dash

D. The parking pawl will engage more aggressively in Park, potentially causing damage to the parking gear teeth

43. A technician is assembling a Ravigneaux gear set during a transmission rebuild. The set includes a small sun gear, a large sun gear, short pinion gears, long pinion gears, and a shared carrier. The technician notices that the short pinion gears mesh with both the small sun gear and the long pinion gears. If the short pinions are installed backward on the carrier, what will happen?

A. The gear mesh pattern will be incorrect, causing noise, accelerated wear, and potential gear tooth failure

B. The transmission will operate normally since the pinion gears are symmetrical and can be installed either way

C. The transmission will lock up immediately because the reversed gears will jam against the sun gear

D. The gear ratios will be changed, producing incorrect forward speeds but leaving Reverse unaffected

44. A technician is performing endplay measurement during reassembly and reads 0.032 inches. The specification is 0.015 to 0.040 inches. The technician rechecks the measurement and gets 0.034 inches on the second attempt. What does the slight variation between measurements indicate, and what action is appropriate?

A. The dial indicator is defective and must be replaced before any endplay reading can be trusted

B. A slight variation between measurements is normal due to component settling and is acceptable since both readings fall within specification

C. The thrust washers are shifting position between measurements and must be replaced with tighter-fitting ones

D. The second measurement should be used as the definitive reading and the first should be disregarded entirely

45. A technician has completed a transmission overhaul and is ready to install the valve body. The service information indicates that a specific check ball must be placed in a seat that is shared between the case and the valve body — the ball sits in the case seat and the valve body covers it. If this check ball is omitted, which of the following is the MOST LIKELY consequence?

A. The transmission will produce a harsh engagement in all gears due to unregulated pressure in the main line

B. The oil pump will be unable to prime and the transmission will have no hydraulic pressure upon startup

C. The transmission will operate normally in most conditions because the solenoids compensate for the missing ball

D. Fluid will flow through an unintended passage, causing a pressure loss or engagement problem in a specific gear range

46. A technician is inspecting a transmission case and finds a cup plug at the end of an internal fluid passage. The plug appears to be slightly recessed from its original installed position and has a thin film of fluid weeping from its edge. What is the correct action?

A. Ignore the weeping since it is a minimal amount that will not affect system pressure noticeably

B. Apply RTV sealant over the existing plug to stop the weeping without removing the old plug

C. Remove the old cup plug, clean the bore, and install a new cup plug sealed to the correct depth

D. Replace the entire transmission case since a displaced cup plug indicates internal pressure exceeding design limits

47. A technician is installing a rebuilt transmission and notices that the flexplate has a small crack extending approximately one inch from one of the converter bolt holes. The crack does not go all the way through the plate. What is the correct action?

A. Replace the flexplate because any crack will propagate under the cyclic loading of engine operation

B. Weld the crack with appropriate filler material and re-drill the bolt hole to restore original dimensions

C. Install the transmission and monitor the flexplate for crack progression at the next scheduled service

D. Apply a flexplate reinforcement bracket over the cracked area and use longer converter bolts for retention

48. After installing a rebuilt transmission, filling with fluid, and starting the engine, the technician finds that fluid is spraying from the junction between the torque converter and the transmission front pump housing. What is the MOST LIKELY cause?

A. The transmission oil pump has a cracked housing that failed during the initial pressurization at startup

B. The front pump seal was damaged during installation, or the converter hub is not fully seated in the pump

C. The torque converter is overfilled with fluid and the excess is being expelled through the pump vent

D. The converter housing is cracked from improper handling during the rebuild process and storage period

49. A technician completes a transmission rebuild and installation on a vehicle equipped with a mechatronic unit (internal TCM integrated with the valve body). After starting the engine and attempting to drive, the transmission will not engage any gear. The scan tool communicates with the TCM and shows no DTCs. What should the technician check FIRST?

A. The main line pressure at the test port to determine if the oil pump is producing adequate output

B. The internal electrical connections between the mechatronic unit and the transmission case harness

C. The torque converter for proper seating, since a partially seated converter may not drive the pump

D. The fluid level and type to verify that the correct fluid was used and the level is adequate for operation

50. A technician has completed a transmission overhaul, installed the unit, and performed the initial startup and fluid fill. The customer returns after 200 miles reporting that the transmission shifts perfectly but is running hotter than normal — the scan tool shows fluid temperature consistently at 225°F during highway driving. What is the MOST LIKELY cause?

A. The rebuilt transmission has tighter internal clearances that generate more heat until the components break in

B. The thermostat in the engine cooling system has failed, preventing adequate heat exchange at the cooler

C. The fluid cooler was not adequately flushed during the rebuild, and residual restriction is reducing cooling efficiency

D. The replacement torque converter has a higher stall speed than the original, generating excess heat in the fluid

Practice Exam 4: Answer Key and Explanations

1. C — The engine RPM rises sharply without a proportional increase in vehicle speed during the 1-2 shift, which means the 2nd gear holding device is engaging but cannot maintain the gear ratio — it is slipping under load. The transmission eventually skips to 3rd because the module detects the failed 2nd gear engagement and commands the next available gear. A tie-up would cause a harsh bind, not an RPM increase, and a stuck solenoid would prevent the shift entirely rather than allow partial engagement.

2. A — A stall test that matches specification confirms three things simultaneously: the engine is producing its rated power (it can reach the correct RPM against the converter load), the torque converter is coupling properly (it is loading the engine as designed), and the transmission clutches are holding (they are providing the resistance that creates the stall condition). If any of these three systems were failing, the stall RPM would be above or below specification.

3. D — The vibration occurs at a specific vehicle speed regardless of engine RPM, gear range, throttle position, or even whether the engine is running. This eliminates every engine-driven and transmission-driven component. The only components that rotate at a speed tied exclusively to vehicle road speed, independent of everything else, are the driveshaft, U-joints, wheel bearings, and tires. A driveshaft balance problem or worn U-joint produces vibration at a specific road speed.

4. D — Both technicians are correct. A level surface ensures that the fluid in the pan is evenly distributed and contacts the dipstick at the true level — a tilted vehicle shifts the fluid and produces an inaccurate reading. Running the engine circulates fluid through the clutch circuits, converter, and cooler, leaving the correct residual amount in the pan for an accurate dipstick reading. Checking with the engine off leaves an unknown amount of fluid in the pan that has not yet drained back from the upper circuits.

5. B — A shudder only during moderate acceleration in a specific speed range — not during light or heavy throttle — points to a component that is loaded in a particular way at that operating condition. The torque converter internal bearings support the impeller, turbine, and stator under varying loads. At the specific combination of speed, torque, and fluid dynamics produced during moderate acceleration in 2nd gear, worn bearings can produce a cyclic shudder that disappears when the load changes.

6. A — After an extended parking period, the forward clutch piston seals allow fluid to drain back from the clutch apply circuit under the force of the return spring. On the first Park-to-Drive shift, the pump must rapidly refill the empty circuit. The sudden rush of fluid into the clutch piston bore produces a harsh, slamming engagement because the circuit fills faster than the accumulator can cushion. After the first shift, the circuit remains charged and subsequent engagements are smooth.

7. C — If the module commands a pressure increase through the EPC solenoid and the actual line pressure does not change, the command is not reaching the regulator valve effectively. The fault lies in the signal chain between the module and the pressure regulation: the EPC solenoid may be electrically or mechanically failed, the circuit between the module and solenoid may be open, or the pressure regulator valve may be stuck in a position where the EPC signal cannot influence it.

8. B — A noise present only in Reverse at idle that disappears in every other gear range points to a component uniquely pressurized or engaged in Reverse. A loose or broken component within the reverse apply circuit — such as a cracked servo piston, a loose band anchor, or a damaged accumulator spring — vibrates when reverse hydraulic pressure is applied to that circuit. The noise stops in other ranges because the reverse circuit is depressurized.

9. B — The shift schedule delays upshifts at higher throttle inputs because the module interprets higher throttle as a request for more performance. If the TPS reads higher than the actual throttle opening, the module believes the driver is demanding aggressive acceleration at moderate throttle and delays every upshift to a higher RPM accordingly. A no-DTC condition is common with TPS drift because the signal may still be within the sensor's electrical range even though it is inaccurate.

10. A — The forward clutch is the only device applied in every forward gear range — 1st through 4th (or higher). If it fails, all forward gears are lost simultaneously while Reverse remains functional because the reverse circuit uses different apply devices. A worn pump would affect both Drive and Reverse. A stuck manual valve would produce range-specific symptoms rather than a total loss of all forward gears.

11. C — Both technicians are correct. Aerated (foamy) fluid is compressible because the air bubbles collapse under pressure, which means the hydraulic system cannot transmit force effectively. This causes erratic shifting, delayed engagements, and soft clutch application. An overfilled transmission causes aeration because the rotating internal components dip into the fluid surface and churn it, whipping air into the fluid like a blender.

12. D — The scan tool confirms that the module commands 45% duty cycle for PCS-B, but the actual duty cycle drops to 0% — meaning the solenoid is not responding to the command. This is an electrical fault in the solenoid or its circuit, not a mechanical valve body or clutch issue. The solenoid coil may be open, the connector may have a failed terminal, or the wiring may have a break that prevents the commanded signal from reaching the solenoid.

13. A — A momentary drop of the engine RPM PID to exactly zero for 0.3 seconds while all other PIDs remain stable indicates a brief loss of the CAN bus message that carries the engine RPM data from the ECM to the TCM. A real engine stall would cause all related PIDs to change simultaneously. An isolated zero-reading in one PID points to a communication interruption — likely an intermittent connection at the ECM, a CAN bus wiring issue, or a momentary ECM processing fault.

14. D — The sensor was replaced but the code returned, which means the sensor itself was not the cause — or the new sensor is also not receiving a signal due to a problem in the path between the sensor and the module. The wiring harness and connector are the next logical inspection point because a damaged wire, corroded connector, or pinched harness between the sensor and the TCM would prevent even a new sensor's signal from reaching the module.

15. C — Engine RPM of 2,200 with an input shaft speed of 1,650 shows a 550 RPM difference between the engine crankshaft and the transmission turbine. This means the TCC is not fully locked — there is significant slip. However, some transmissions use a controlled slip strategy in certain gears where the TCC is partially applied with a designed amount of slippage to reduce NVH. The 550 RPM difference represents the controlled slip target for this operating condition.

16. A — The paddle shifter inputs are processed by a separate module or circuit before being sent to the TCM. If the paddle shifter module, the switches themselves, or the wiring between the paddles and the TCM has failed, the manual shift requests never reach the TCM. The TRS correctly reads "D" because the floor-mounted shift lever is in Drive — the TRS is not involved in paddle shifter communication. The transmission defaults to fully automatic operation because it never receives the manual override signal.

17. B — A progressive delay in upshift timing over 80,000 miles — with the shifts themselves remaining smooth — indicates the adaptive system is gradually delaying the shift to compensate for reduced clutch holding capacity from friction material wear. By delaying the upshift, the module allows the engine to build more torque before the shift, but the clutch is applied at a higher RPM where the speed differential across the clutch is also higher. This adaptation pattern is a leading indicator of clutch wear.

18. D — Technician B is correct. In vehicles with an integrated PCM, a detected engine misfire can trigger a torque management strategy that modifies transmission shift behavior — delaying shifts, reducing torque during shifts, or inhibiting TCC engagement — to protect the drivetrain from the uneven torque pulses caused by the misfire. Technician A is wrong because engine DTCs can absolutely influence transmission operation in integrated powertrain control systems.

19. C — Both codes are logically connected: if the output speed sensor provides an incorrect signal, the module calculates the gear ratio using bad data (ratio = input speed ÷ output speed). The calculated ratio will not match the expected ratio for the commanded gear, triggering P0730. The transmission may shift normally by feel because the mechanical operation is actually correct — the module is simply miscalculating the ratio based on the faulty sensor input.

20. B — The voltage decreases smoothly and proportionally as the lever moves from Park through Reverse, Neutral, and Drive, with no sudden jumps, dropouts, or dead spots. This clean, proportional signal with distinct voltage values at each position is exactly what the module needs to accurately determine the gear range. The smooth transition between positions confirms there are no worn contacts or signal interruptions.

21. A — A history code with no reproducible symptoms indicates a fault that occurred in the past but is not currently active. The appropriate action is to clear the code, document the finding for the service record, and advise the customer to return if symptoms develop. Replacing components based on a history code with no current symptoms is premature and unnecessary — the code may represent a one-time event that does not recur.

22. D — A whining noise during acceleration that changes with engine RPM and is absent at idle in Park or Neutral indicates a component that is loaded only when torque is transmitted through the CVT. The primary pulley bearing or the belt/chain bears the full engine torque during acceleration. A worn bearing produces a whine under load, and a worn belt or chain can produce noise as it engages the pulley surfaces under high clamping force during acceleration.

23. C — DCT transmissions do not have a torque converter to absorb the imprecise clutch modulation required at very low creep speeds. The clutch must slip in a precisely controlled manner to produce smooth creep, and if the friction material is worn or the fluid's friction modifiers have degraded, the clutch alternates between grabbing and slipping — producing shudder and hesitation. Normal acceleration and highway driving do not require this precise low-speed modulation.

24. B — The stop/start system requires the auxiliary transmission fluid pump to maintain hydraulic pressure during engine-off periods. If the auxiliary pump or its control circuit has failed, the module cannot guarantee adequate clutch pressure during engine-off events and disables the stop/start function to prevent harsh engagement or a no-drive condition upon restart. No engine or transmission DTCs may be stored if the fault is specifically in the auxiliary pump disable logic.

25. A — Higher adaptive pressure values across all clutch circuits on the high-mileage vehicle compared to the low-mileage vehicle directly reflect the progressive wear of clutch friction material over 110,000 miles. As the friction material wears, its coefficient of friction decreases and the clutch requires more clamping pressure to achieve the same engagement quality. The adaptive system has increased the commanded pressure to compensate, which is exactly its designed function.

26. D — A loud whining noise at idle that was not present before the filter service and increases with engine RPM is characteristic of the oil pump cavitating — drawing air along with fluid. A damaged or missing filter O-ring seal allows the pump to draw air through the gap between the filter and the valve body intake port. The air creates cavitation in the pump, producing the whining noise. Reinstalling the filter with a properly seated new O-ring resolves the issue.

27. A — A brief rollback on an incline before the transmission engages forward drive indicates a delayed forward clutch engagement. On a grade, gravity pulls the vehicle backward during the time gap between releasing the brake and the clutch fully applying. A partially drained clutch circuit takes slightly longer to pressurize and engage, creating the rollback. A weak pump at idle producing marginal pressure can also delay engagement on inclines where the resistance is higher than on flat ground.

28. C — Transmission pan bolts that vary in length are positioned specifically by the manufacturer. A bolt that is too long in the wrong location can protrude into the pan far enough to contact the filter, valve body, or internal wiring. A bolt that is too short may not engage enough threads for proper clamping. The correct action is always to consult the manufacturer's service information for the bolt location diagram.

29. B — Excessive free play in the shift lever with correct gear engagement indicates the play is in the linkage mechanism itself, not in the transmission. Worn bushings, grommets, and pivot points in the column-mounted shift linkage allow the lever to move through slop before the motion reaches the cable or rod. The transmission engages correctly because the manual valve still reaches each detent — it just takes more lever movement to get there.

30. D — Quick-connect fittings rely on an internal locking mechanism — typically a collet, retaining clip, or spring-loaded ring — that snaps over a bead or groove on the mating tube to hold the fitting in place. If this internal mechanism is damaged, contaminated with debris, or has been improperly released during a previous disconnection, it cannot engage the tube properly and the fitting will not click and lock.

31. B — The engine starts in Park (confirming the starter interlock works), but no gears engage, which means the manual valve is not reaching the correct detent positions. The new range sensor must be adjusted after installation so its internal reference points align precisely with the manual shaft detent positions. Without proper adjustment, the sensor may report a gear position that does not match the actual manual valve position, confusing the module.

32. A — A random, intermittent clunk during the Park-to-Drive engagement that varies in intensity suggests a mechanical compliance issue — something that absorbs or does not absorb the engagement force inconsistently. A worn or intermittently collapsed engine or transmission mount allows the drivetrain to shift under the engagement torque on some occasions but holds firm on others, producing an inconsistent clunk.

33. D — When the visible external sources have been ruled out, the transmission vent is a frequently overlooked leak source. A clogged vent tube causes internal case pressure to build, which forces fluid out through seals. An overfilled transmission pushes excess fluid out the vent. Fluid expelled from the vent drips from the center-bottom of the transmission, appearing as a mystery leak from an indeterminate location.

34. C — Solenoid calibration codes correspond to the specific flow rate, response time, and force characteristics of each individual solenoid. Installing a new solenoid with a different calibration code requires entering the new code into the control module so it can adjust its commands to match the new solenoid's actual performance. Using the old code or skipping the entry causes a mismatch between commanded and actual solenoid behavior.

35. B — A thin film of ATF on the exterior of the case pass-through connector indicates that fluid is wicking along the internal wiring harness from inside the transmission and seeping out through the connector seal. This is a sign that the case connector seal has deteriorated and is no longer preventing fluid migration. While the circuits currently test within specification, the fluid intrusion will eventually corrode the external terminals if not addressed.

36. D — The forward clutch piston has a return spring that pushes the piston back when pressure is released. During an extended parking period with the engine off (no pump running), the return spring slowly pushes the piston back, and the fluid in the apply circuit drains back to the sump through the valve body passages. The first start requires the pump to completely refill this empty circuit before the clutch can engage, causing a one-time delay.

37. A — A cracked shift cable bracket allows the cable housing to move during gear changes. This movement introduces play and inconsistency in the cable's relationship to the manual shaft. The manual valve may not center precisely in each detent because the cable housing shifts position during the transition, causing the gear indicator and potentially the manual valve alignment to vary intermittently between shifts.

38. C — Two clicks indicate that two of the three engagement points have been achieved, but one remains unaligned. The most common solution is to rotate the converter slightly — often just a few degrees in either direction — while applying gentle inward pressure. This rotation aligns the remaining spline set (typically the innermost engagement — the input shaft splines with the turbine hub) and allows the converter to slide into full engagement with the third click.

39. A — A loose band anchor pin must be replaced and properly seated to restore the fixed pivot point that the band requires for correct operation. When the band is applied by the servo, it tightens around the drum by pivoting against the anchor pin. If the pin is loose, the band cannot develop consistent clamping force and may slip or apply unevenly. A new pin pressed firmly into a clean bore restores proper function.

40. C — When the thickest available selective snap ring cannot reduce the clearance to specification, a thicker selective pressure plate — if available from the manufacturer — adds thickness to the clutch pack stack, taking up additional space and reducing the measured clearance. This combination of the thickest snap ring plus a thicker pressure plate brings the total clearance within the specified range without modifying the number of friction discs or steel plates.

41. D — A bent apply pin will not contact the band evenly across its apply surface. One side of the band will be pushed harder than the other, causing partial engagement where one portion of the band grips the drum while the other does not. This uneven application reduces the band's effective holding capacity and can cause slippage, accelerated wear, and heat generation on the loaded side. The pin must be replaced with a straight one.

42. B — The parking pawl return spring pulls the pawl away from the parking gear when the driver shifts out of Park. Without this spring, the pawl may remain engaged with the parking gear teeth due to friction, mechanical retention, or the weight of the vehicle holding the pawl in the notch. The result is a grinding noise or physical binding when attempting to shift from Park, as the pawl drags against the rotating gear.

43. A — Planetary pinion gears have specifically oriented tooth profiles designed to mesh correctly with their mating gears. Installing short pinions backward on the carrier reverses the tooth contact pattern, causing the load to fall on the wrong portion of the tooth surface. This produces gear noise, accelerated wear, and potential tooth failure under load because the teeth were not designed to carry force in that orientation.

44. B — A slight variation of 0.002 inches between two consecutive endplay measurements is normal and expected. Components settle slightly between measurements, and the indicator plunger may contact at marginally different points. Both readings — 0.032 and 0.034 inches — fall within the specified range of 0.015 to 0.040 inches. The endplay is acceptable and no corrective action is required.

45. D — A check ball in this location acts as a one-way flow control valve that prevents fluid from flowing through the passage in one direction while allowing it in the other. Without the ball, fluid flows freely in both directions through the passage, reaching circuits it was not intended to reach or draining from circuits that should remain pressurized. The result is a pressure loss or unintended engagement in the specific gear range controlled by that passage.

46. C — A displaced cup plug with fluid weeping past its edge indicates the plug has lost its seal in the case bore. The correct repair is to remove the old plug, clean the bore to remove corrosion and old

sealant, and install a new cup plug properly seated and sealed. Cup plugs seal internal fluid passages, and a leaking plug causes pressure cross-feeding or pressure loss in the circuit it is meant to seal.

47. A — Any crack in a flexplate will propagate under the cyclic loading of normal engine operation. The flexplate endures continuous bending stress from engine firing pulses and torque converter loading. A crack that starts at a bolt hole — a high-stress concentration point — will grow with each engine revolution until the plate fractures completely, potentially causing catastrophic drivetrain damage. The flexplate must be replaced regardless of crack size.

48. D — Fluid spraying from the converter-to-pump junction indicates a seal failure at that interface. The most common causes are a front pump seal that was damaged during converter installation (nicked by the converter hub edge), a converter hub with scoring that prevents the seal from seating, or a converter that is not fully seated in the pump, leaving the hub mispositioned relative to the seal. The converter must be removed, the seal inspected and likely replaced, and the hub surface examined.

49. B — With a mechatronic unit (internal TCM on the valve body), the electrical connections between the unit and the case harness are the critical communication link. If these connections were not properly mated during reassembly — a connector not fully seated, a pin bent during installation, or a harness pinched between the valve body and the case — the TCM cannot command the solenoids and no gears will engage. The scan tool communicates because the external CAN bus connection to the TCM is separate from the internal solenoid connections.

50. C — A transmission that shifts perfectly but runs consistently hot at 225°F during highway driving — above normal but not yet critical — points to a cooling system deficiency rather than an internal transmission problem. If the cooler was not adequately flushed during the rebuild, residual debris or varnish inside the cooler core restricts flow and reduces cooling capacity. The transmission generates normal heat, but the restricted cooler cannot remove it efficiently enough to maintain normal temperature.