

PRACTICE EXAM 5: ASE A3 SIMULATION (50 QUESTIONS)

50 Questions • 60-Minute Time Limit

1. The component that multiplies the driver's pedal effort and applies clamping force to hold the driven disc against the flywheel is the:

- A. Release (throw-out) bearing
- B. Pilot bearing or bushing
- C. Pressure plate assembly
- D. Clutch master cylinder

2. Technician A says a single-mass flywheel can be resurfaced if it remains within thickness limits. Technician B says a dual-mass flywheel should be resurfaced the same way during every clutch job. 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

3. A driver reports a burning smell and loss of power on a long uphill grade, with engine rpm climbing while road speed lags behind. The MOST likely cause is:

- A. A dragging release bearing overheating the input shaft

- B. A seized pilot bearing binding the transmission input
- C. Air in the hydraulic clutch line reducing pedal travel
- D. A worn or contaminated clutch slipping under heavy load

4. When measuring flywheel runout before installing a new clutch, the technician mounts the dial indicator against the:

- A. Outer edge of the starter ring gear teeth
- B. Flat friction face of the flywheel surface
- C. Crankshaft flange behind the flywheel bolts
- D. Pressure plate cover after it is bolted down

5. All of the following are common causes of a clutch that fails to release EXCEPT:

- A. Air trapped in the hydraulic release circuit
- B. A weak pressure plate diaphragm spring
- C. A warped or bent clutch driven disc
- D. A stretched or maladjusted clutch cable

6. A transmission input gear has 12 teeth and drives a countershaft gear with 36 teeth. The gear ratio of this mesh is:

- A. 1.5:1
- B. 2.0:1
- C. 2.5:1
- D. 3.0:1

7. Technician A says synchronizers match the speed of the gear to the speed of the shaft before the dog teeth engage. Technician B says synchronizers are used on the reverse gear in most manual transmissions. 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

8. In a manual transmission, the part that locks the selected speed gear to the output shaft so that power can flow is the:

- A. Reverse idler gear on its own shaft
- B. Countershaft cluster gear assembly
- C. Synchronizer hub and sleeve assembly
- D. Extension housing output shaft bushing

9. A manual transmission is difficult to shift into any gear while the engine is running, yet the gears select easily by hand with the engine off. The MOST likely cause is:

- A. Worn synchronizer rings in several gear positions
- B. A clutch that is not fully releasing the input shaft
- C. A low gear lubricant level inside the main case
- D. A bent shift rail binding in the shift housing bore

10. Excessive end play of a transmission output shaft is typically corrected by:

- A. Replacing the synchronizer blocker rings as a set
- B. Installing a heavier viscosity gear lubricant
- C. Tightening the extension housing retaining bolts
- D. Selecting the proper thickness shim or thrust washer

11. A transmission pops out of first gear under hard acceleration but stays engaged at light throttle. The LEAST likely cause is:

- A. A worn clutch driven disc slipping under heavy load
- B. Worn clutching (dog) teeth on the first-gear gearset
- C. A worn shift fork allowing partial sleeve engagement
- D. A weak or broken detent spring in the shift mechanism

12. Technician A says backlash between two meshed gears is the small clearance that prevents binding. Technician B says zero backlash is the ideal target for quiet, long-lasting gear operation. 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

13. During reassembly of a manual transmission, coating the synchronizer cones and gears with the correct lubricant is done primarily to:

- A. Permanently seal the bearing surfaces against moisture
- B. Set the final backlash between the gear tooth meshes
- C. Provide initial lubrication and prevent dry-start scoring
- D. Increase the friction so the synchronizers engage faster

14. A rattling noise from a manual transmission is heard at idle in neutral with the clutch engaged, and it disappears when the clutch pedal is pushed down. The MOST likely cause is:

- A. A worn output shaft bearing under tailshaft load
- B. Normal gear rattle from engine torsional pulses at idle
- C. A worn pilot bearing seizing against the input shaft

D. A cracked flywheel ring gear contacting the starter

15. A small gear that reverses the rotation direction of the output shaft when reverse is selected is called the:

A. Synchronizer blocking ring

B. Countershaft drive gear

C. Output shaft speed gear

D. Reverse idler gear

16. A manual transmission specifies a GL-4 lubricant rather than GL-5. Using a GL-5 oil where GL-4 is required can:

A. Improve cold-weather shifting in every climate

B. Raise the lubricant level above the fill plug hole

C. Damage soft yellow-metal (brass) synchronizer parts

D. Lower the gear oil operating temperature noticeably

17. A manual transmission whines in fifth gear only, while all other gears stay quiet. The MOST likely cause is:

A. A worn input shaft bearing loaded in every gear

B. Worn fifth-gear teeth or its supporting bearing

C. A worn pilot bearing in the crankshaft end bore

D. Low lubricant starving all of the gearsets of oil

18. In a front-wheel-drive transaxle, the transmission and the final drive differential are:

A. Combined into a single housing assembly

- B. Mounted on opposite ends of the vehicle
- C. Connected only by a long rear driveshaft
- D. Joined through a separate transfer case unit

19. A FWD vehicle clunks and jerks when the throttle is applied and released repeatedly at low speed. After the mounts are ruled out, the MOST likely cause is:

- A. A worn outer CV joint clicking only during turns
- B. A slipping clutch disc flaring under light load
- C. A leaking axle seal lowering the transaxle fluid
- D. Worn inboard CV (plunge) joints or excessive driveline lash

20. Before pressing a new wheel bearing into a FWD knuckle, the technician should:

- A. Pack the CV joint with extra high-temperature grease
- B. Adjust the final drive backlash inside the transaxle
- C. Set the axle nut to half its final torque value first
- D. Inspect the knuckle bore for scoring, wear, or damage

21. A humming noise from a FWD vehicle rises steadily with road speed and changes slightly when the steering is loaded left or right. The MOST likely cause is a:

- A. Worn inboard plunge joint on the right half shaft
- B. Worn front wheel bearing carrying a cornering load
- C. Slipping clutch disc under light acceleration loads
- D. Low transaxle fluid level causing a gear whine noise

22. A final drive ring gear has 70 teeth and the drive pinion has 20 teeth. The final drive ratio is:

- A. 2.50:1
- B. 3.00:1
- C. 3.50:1
- D. 4.00:1

23. Technician A says a binding inner CV joint can cause a shudder felt during hard acceleration. Technician B says a torn CV boot can be ignored as long as the joint is still quiet. 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

24. The type of inner CV joint that allows the half shaft to change length as the suspension moves up and down is the:

- A. Fixed Rzeppa ball-and-cage joint
- B. Single cardan universal joint type
- C. Tripod (tripot) plunge joint design
- D. Double cardan constant-velocity joint

25. A FWD transaxle makes a growling noise that is present in every gear and continues while the vehicle coasts in gear. The MOST likely cause is:

- A. Worn synchronizer rings on the upper shift hub
- B. A worn input or output shaft bearing in the case
- C. A worn outer CV joint near the left front hub
- D. A dragging brake pad contacting the rotor face

26. When replacing a half shaft, the inboard joint is separated from the transaxle by:

- A. Unbolting the strut from the steering knuckle first
- B. Removing the differential cover to reach the side gear
- C. Pressing the wheel bearing out of the knuckle bore
- D. Prying the joint stub out of the differential side gear

27. Technician A says torque steer can be worse on high-horsepower FWD vehicles with unequal-length half shafts. Technician B says torque steer is caused only by a misaligned rear axle. 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

28. On a typical FWD transaxle, engine torque is transmitted to the road wheels through the:

- A. Final drive gears, differential, and half shafts
- B. A rear driveshaft and a separate live rear axle
- C. A transfer case feeding both front and rear axles
- D. A viscous coupling mounted ahead of the gearbox

29. A FWD transaxle seeps fluid only while parked overnight and stops once the vehicle is driven and warm. The MOST likely cause is:

- A. An overfilled case venting through the breather
- B. A worn outer CV boot throwing grease at speed
- C. A worn axle or input shaft seal seeping when cold
- D. A cracked final drive ring gear leaking under load

30. A RWD vehicle has a vibration felt at a specific road speed that is unaffected by engine load or gear selection. After the tires are balanced, the MOST likely cause is:

- A. A slipping clutch disc under light throttle loads
- B. A bent driveshaft or out-of-balance driveline component
- C. A worn synchronizer in the most-used gear position
- D. A leaking pinion seal lowering the axle lubricant level

31. A double-cardan (constant-velocity) joint is used on some driveshafts to:

- A. Increase the final drive ratio at the rear axle
- B. Allow the slip yoke to change driveshaft length
- C. Provide a mounting point for the center bearing
- D. Smooth power delivery at steep driveshaft angles

32. A two-piece driveshaft uses a center support bearing. A worn center support bearing usually produces:

- A. A clicking noise only during low-speed turns
- B. A whine that changes directly with engine rpm
- C. A rumble or vibration that increases with road speed
- D. A clunk heard only when shifting between gears

33. Technician A says universal joints can be checked for play by trying to twist and rock the driveshaft yokes by hand. Technician B says a worn U-joint is best confirmed by adding lubricant until the noise stops. 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

34. The differential gears that allow the two drive wheels to turn at different speeds while cornering are the:

- A. Drive pinion and ring gear set
- B. Spider (pinion) and side gears
- C. Carrier and pinion shaft bearings
- D. Axle shaft and wheel hub splines

35. A ring-and-pinion set has a 41-tooth ring gear and a 10-tooth pinion. The axle ratio is closest to:

- A. 3.08:1
- B. 3.55:1
- C. 3.90:1
- D. 4.10:1

36. On a differential that uses a crush sleeve (collapsible spacer), pinion bearing preload is set by:

- A. Adding shims behind the inner pinion bearing race
- B. Loosening the carrier side adjuster nuts evenly
- C. Selecting a thicker pinion depth setting shim
- D. Tightening the pinion nut to collapse the spacer

37. A rear axle produces a whine that is loudest during coasting (deceleration) and quieter under power. The MOST likely cause is:

- A. A worn pinion bearing growling at all loads
- B. A bent axle shaft wobbling once per revolution

- C. Incorrect ring-and-pinion coast-side tooth contact
- D. A worn limited-slip clutch pack needing additive

38. Technician A says a tooth-contact pattern is read on both the drive side and coast side of the ring gear teeth. Technician B says only the drive side needs to be checked during setup. 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

39. A limited-slip differential differs from an open differential because it:

- A. Always turns both drive wheels at identical speeds
- B. Transfers more torque to the wheel with better traction
- C. Sends all power to the wheel that is spinning freely
- D. Eliminates the need for any ring and pinion gears

40. A C-clip axle vehicle has a rear wheel that develops noticeable in-and-out play and a clunk. After the wheel bearing is ruled out, the MOST likely cause is:

- A. A bent axle shaft creating a once-per-turn wobble
- B. A worn pinion seal allowing lubricant to escape
- C. A worn axle shaft bearing or worn C-clip and side gear
- D. An incorrect ring-and-pinion backlash setting at assembly

41. Before removing the axle shafts on a C-clip rear axle, the technician must first:

- A. Crush a new collapsible spacer to preset preload

- B. Set the ring gear backlash to the listed specification
- C. Press the wheel bearings off the outer shaft ends
- D. Remove the cover and the differential pinion shaft

42. A rear axle leaks lubricant onto the inside of one rear brake drum or rotor. The MOST likely cause is:

- A. An overfilled differential venting through the breather
- B. A worn or damaged axle shaft seal on that side
- C. A worn pinion seal leaking at the front yoke area
- D. A loose differential cover with a failed gasket

43. Technician A says checking gear lubricant level and condition is part of a basic drive axle inspection. Technician B says a magnetic drain plug coated with fine particles always means internal gear failure. 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

44. When installing a new ring and pinion, gear marking compound is applied to the ring gear teeth to:

- A. Reveal the tooth-contact pattern for depth and backlash
- B. Lubricate the gears during the first miles of break-in
- C. Permanently seal the gear faces against moisture entry
- D. Set the carrier bearing preload to the listed value

45. A new ring-and-pinion installation howls badly right after assembly, and the contact pattern shows the pinion riding too far toward the tooth root. The correct adjustment is to:

- A. Increase ring gear backlash with the side adjusters
- B. Add friction modifier to the differential lubricant
- C. Change the pinion depth shim to reposition the pinion
- D. Replace both axle shafts and their wheel bearings

46. In a part-time four-wheel-drive system, the device that splits engine torque between the front and rear driveshafts is the:

- A. Front axle disconnect actuator unit
- B. Transfer case mounted behind the transmission
- C. Viscous coupling between the half shafts
- D. Center support bearing on the rear driveshaft

47. A full-time AWD vehicle has a tight, binding feel and tire scrub during slow, tight turns on dry pavement. After tire sizes are confirmed equal, the MOST likely cause is:

- A. A stretched transfer case drive chain needing replacement
- B. A leaking front axle seal lowering the fluid level
- C. A worn rear pinion bearing growling under light load
- D. A failed center differential or coupling not allowing speed difference

48. The low range in a transfer case is engaged to:

- A. Raise the top road speed for highway cruising
- B. Disconnect the front axle during normal driving
- C. Provide extra gear reduction for low-speed torque
- D. Lock the rear differential for straight-line grip

49. Technician A says an AWD system with mismatched tire diameters can overload the center coupling. Technician B says low transfer case fluid can cause noise and internal wear. Who is correct?

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

50. Before road-testing a 4WD vehicle for a transfer case noise complaint, the technician should first:

- A. Check the transfer case fluid level and condition
- B. Replace the front axle disconnect actuator motor
- C. Adjust the rear differential ring gear backlash
- D. Bleed the hydraulic clutch release circuit fully

PRACTICE EXAM 5: ANSWER KEY AND EXPLANATIONS

1. C — The pressure plate assembly uses its diaphragm spring to clamp the driven disc against the flywheel, while the release fingers multiply pedal effort. This clamping force is what transmits engine torque through the disc to the transmission. A weak pressure plate reduces clamp load and allows slip.

2. A — A single-mass flywheel can be machined if it stays within minimum thickness, but a dual-mass flywheel is a sealed two-piece damper that cannot be resurfaced and is replaced when worn. Resurfacing a DMF the same way would destroy its internal springs. Only Technician A is right.

3. D — A burning smell with engine rpm rising faster than road speed under load is classic clutch slippage from a worn or oil-contaminated disc. The disc cannot grip the flywheel firmly enough to transmit full torque on the grade. The friction heat produces the burning odor.

4. B — Flywheel runout is measured by sweeping a dial indicator across the flat friction face while rotating the crankshaft. Excessive runout causes engagement problems and chatter. The ring gear and cover are not valid measuring surfaces for face runout.

5. B — A weak diaphragm spring reduces clamping force and causes slipping, not a failure to release, so it is the exception. Failure to release comes from anything that keeps the disc partly clamped: trapped air, a warped disc, or a stretched cable. Each of those prevents full disengagement.

- 6. D** — Gear ratio equals driven teeth divided by drive teeth, so $36 \div 12 = 3.0:1$. The larger driven gear turns one third as fast as the input, multiplying torque threefold. This is the basic mesh-ratio relationship.
- 7. A** — Synchronizers bring the speed gear and shaft to matched speed before the sleeve engages the dog teeth, preventing clash. Most reverse gears are non-synchronized, which is why reverse can grind, so Technician B is wrong. Only Technician A is right.
- 8. C** — The synchronizer hub is splined to the output shaft, and its sliding sleeve locks the selected speed gear to the hub so power flows. Without it, the freely spinning speed gear would not transmit torque. The hub-and-sleeve unit is the engaging member.
- 9. B** — Gears that shift easily by hand with the engine off but resist while running indicate the clutch is not fully releasing the input shaft. With the engine off the input shaft is not driven, so synchronizers can match speeds easily. A dragging clutch keeps the input spinning and causes the hard shift.
- 10. D** — Output shaft end play is set by selecting the proper thickness shim or thrust washer to bring it within specification. Lubricant or bolt torque does not change shaft end play. The correct shim restores the specified clearance.
- 11. A** — A worn clutch disc causes slip, not gear jumpout, making it the least likely cause of popping out of first. Jumpout comes from worn clutching teeth, a worn shift fork, or a weak detent that fails to hold the sleeve engaged. The clutch plays no role in holding a gear in mesh.
- 12. A** — Backlash is the deliberate small clearance between meshing teeth that prevents binding as gears expand and load. Zero backlash would cause the teeth to bind, overheat, and fail, so Technician B is wrong. Only Technician A is right.
- 13. C** — Coating the synchronizer cones and gears during assembly provides initial lubrication and prevents dry-start scoring before the oil circulates. The first rotations occur before splash lubrication reaches the parts. This pre-lube protects the new components.
- 14. B** — A rattle at idle in neutral that stops when the clutch is depressed is normal gear rattle excited by engine torsional pulses. Pressing the pedal disconnects the engine pulses from the gears, silencing the noise. This neutral rollover rattle is a normal condition, not a failure.
- 15. D** — The reverse idler gear is inserted between the countershaft and output gears to reverse the output shaft's rotation. Adding this extra gear changes the direction of rotation. It is what allows the vehicle to back up.
- 16. C** — A GL-5 oil carries more aggressive extreme-pressure additives that can chemically attack soft yellow-metal synchronizer parts where GL-4 is specified. The added sulfur-phosphorus compounds corrode brass and bronze components. Always use the rated lubricant for the unit.
- 17. B** — Noise confined to one gear isolates the fault to that gear's teeth or its supporting bearing. A bearing or gear loaded in every gear would be noisy throughout, not only in fifth. The single-gear symptom points to the fifth-gear set.

- 18. A** — In a FWD transaxle the transmission and final drive differential share a single housing assembly. Combining them eliminates the separate rear axle and driveshaft of a RWD layout. This integrated design defines the transaxle.
- 19. D** — A clunk and jerk during repeated throttle tip-in and tip-out reflects worn inboard plunge joints or excessive driveline lash taking up under reversing loads. The free play slams as torque direction changes. Outer-joint and clutch faults produce different symptoms.
- 20. D** — The knuckle bore must be inspected for scoring, wear, or damage before a new wheel bearing is pressed in. A damaged bore will not retain the new bearing properly and can cause early failure. This inspection protects the repair.
- 21. B** — A hum that rises with road speed and shifts when the steering is loaded left or right is a worn wheel bearing reacting to changing cornering loads. Side loading transfers weight onto the worn bearing, changing the noise. This load sensitivity is a key wheel-bearing indicator.
- 22. C** — Final drive ratio is ring gear teeth divided by pinion teeth, so $70 \div 20 = 3.5:1$. The pinion turns three and a half times for each ring gear revolution. This sets the overall drive reduction.
- 23. A** — A binding inner CV joint can produce a shudder felt during hard acceleration, so Technician A is right. A torn CV boot must never be ignored because contamination quickly destroys the joint, making Technician B wrong. Only Technician A is right.
- 24. C** — The tripod (tripot) plunge joint lets the half shaft lengthen and shorten as the suspension travels. Its rollers slide along the housing tracks to absorb the length change. The fixed outer joint does not plunge.
- 25. B** — A growl present in every gear that continues while coasting in gear points to a worn input or output shaft bearing inside the case. Bearing noise is constant and load-independent, unlike synchronizer or CV faults. The constant character isolates a case bearing.
- 26. D** — The inboard joint stub is released by prying it out of the differential side gear, where a snap ring retains it. Strut, cover, and knuckle steps are not how the inner joint disengages. Prying at the side gear frees the half shaft.
- 27. A** — Torque steer worsens on high-horsepower FWD vehicles with unequal-length half shafts because the shafts twist unequally under load. Technician B's claim that it stems only from rear axle misalignment is incorrect. Only Technician A is right.
- 28. A** — On a FWD transaxle, engine torque flows through the final drive gears, the differential, and out the half shafts to the wheels. There is no rear driveshaft or transfer case in this layout. The half shafts complete the path.
- 29. C** — A seep that appears overnight when cold and stops once the vehicle is warm indicates a worn axle or input shaft seal whose lip conforms better at operating temperature. An overfill or CV boot leak shows up while driving, not while parked. The temperature pattern points to the seal.

- 30. B** — A vibration tied to a specific road speed and unaffected by load or gear, after tires are balanced, indicates a bent driveshaft or unbalanced driveline component. Driveshaft imbalance produces a speed-dependent, load-independent shake. Clutch and synchronizer faults do not behave this way.
- 31. D** — A double-cardan (CV) joint cancels the speed fluctuation of a single U-joint, smoothing power delivery at steep driveshaft operating angles. It is used where high working angles would otherwise cause vibration. The paired joints keep output velocity constant.
- 32. C** — A worn center support bearing on a two-piece driveshaft produces a rumble or vibration that increases with road speed. The bearing supports the shaft at its midpoint and turns with vehicle speed. Its wear creates the speed-related disturbance.
- 33. A** — Universal joints are checked by twisting and rocking the yokes by hand to feel for play, so Technician A is right. Adding lubricant to quiet a worn joint does not confirm or repair it, making Technician B wrong. Only Technician A is right.
- 34. B** — The spider (pinion) gears and side gears inside the differential case let the two drive wheels rotate at different speeds while cornering. The spider gears walk around the side gears to allow the speed difference. This is the core function of the differential.
- 35. D** — Axle ratio is ring gear teeth divided by pinion teeth, so $41 \div 10 = 4.1:1$. The pinion turns 4.1 times for each ring gear revolution. This gives the closest listed ratio.
- 36. D** — With a collapsible spacer, pinion bearing preload is established by tightening the pinion nut to crush the spacer to the specified rotating torque. The collapsing sleeve sets the bearing load. Shims and adjuster nuts control depth and backlash, not this preload.
- 37. C** — A whine loudest on coast and quieter under power points to incorrect coast-side tooth contact on the ring and pinion. Gear mesh noise changes with load direction, unlike a constant bearing growl. The coast-side pattern needs correction.
- 38. A** — The tooth-contact pattern is read on both the drive side and coast side of the ring gear teeth to confirm correct depth and backlash. Checking only the drive side can hide a coast-side error, so Technician B is wrong. Only Technician A is right.
- 39. B** — A limited-slip differential transfers more torque to the wheel with better traction instead of letting all power escape through the spinning wheel like an open unit. Its clutch packs or gears resist the speed difference. This improves traction on slippery surfaces.
- 40. C** — In-and-out wheel play with a clunk on a C-clip axle, once the wheel bearing is ruled out, points to a worn axle bearing or a worn C-clip and side gear. These let the shaft move axially in the housing. Replacing the worn retention parts cures the play.
- 41. D** — On a C-clip axle the differential cover and the pinion (cross) shaft must be removed so the C-clips can be slipped from the side gears before the shafts come out. The clips are captive until the pinion shaft is withdrawn. This sequence is required for shaft removal.

- 42. B** — Lubricant appearing inside one rear brake assembly comes from a worn or damaged axle shaft seal on that side. A pinion seal leaks at the front yoke, and a cover leak appears at the housing rear. The axle seal is the source at the wheel end.
- 43. A** — Checking gear lubricant level and condition is a routine part of a drive axle inspection, so Technician A is right. Fine particles on a magnetic plug are normal wear capture and do not always indicate failure, making Technician B wrong. Only Technician A is right.
- 44. A** — Gear marking compound is painted on the ring gear teeth so the meshing pattern reveals whether pinion depth and backlash are correct. The transferred pattern shows where the load rides on the teeth. It guides shim and backlash adjustments.
- 45. C** — A pinion contact pattern riding toward the tooth root means the pinion depth is wrong and is corrected by changing the pinion depth shim. Backlash adjusters move the ring gear, not pinion depth. Repositioning the pinion with the proper shim fixes the howl.
- 46. B** — In a part-time 4WD system the transfer case, mounted behind the transmission, splits engine torque between the front and rear driveshafts. It contains the range gearing and the front-output drive. This is the device that distributes power.
- 47. D** — Binding and tire scrub during slow, tight turns on dry pavement, with equal tire sizes, indicate a failed center differential or coupling that cannot allow the front and rear axles to turn at different speeds. The driveline winds up and binds. The center unit must permit that speed difference.
- 48. C** — Transfer case low range adds extra gear reduction to multiply torque for low-speed pulling and steep grades. It trades road speed for increased mechanical advantage. This is its purpose in off-road and heavy-load use.
- 49. B** — Both technicians are right: mismatched tire diameters force a continuous speed difference that overloads the AWD center coupling, and low transfer case fluid causes noise and accelerated internal wear. Each is a valid failure path. Correct fluid level and matched tires protect the system.
- 50. A** — The first step for a transfer case noise complaint is to check the fluid level and condition before any road test. Low or contaminated fluid is a common, easily verified cause. This basic check is done before deeper diagnosis.