PRACTICE EXAM 17: ASE A3 SIMULATION (50 QUESTIONS)

50 Questions · 60-Minute Time Limit

1. When measuring clutch disc thickness with a micrometer, the technician compares the reading to the:

A. Maximum allowable flywheel runout value

B. Pressure plate diaphragm finger height standard

C. Release bearing free play measurement on the shaft

D. Manufacturer's minimum disc thickness specification

2. The correct tool for checking flywheel friction-surface runout is a:

A. Dial indicator mounted to read against the rotating surface

B. Feeler gauge inserted between the disc and the flywheel

C. Torque wrench reading the flywheel bolt tightness

D. Micrometer measuring the flywheel outer diameter

3. Clutch pedal free play is correctly measured as the distance the pedal moves:

A. From fully released to fully pressed against the floor

B. After engagement until the clutch fully releases the disc

C. Before the release bearing contacts the pressure plate fingers

D. While the engine is running and the transmission is in gear

4. A diaphragm-spring pressure plate's release fingers are checked for even height because uneven fingers will cause:

A. The clutch disc to slip under all acceleration loads

B. Uneven release and clutch chatter or incomplete disengagement

C. The flywheel ring gear to wear unevenly during cranking

D. The pilot bearing to overheat and seize on the shaft tip

5. The clutch master cylinder pushrod length adjustment affects the:

A. Clamping force the pressure plate applies to the disc

B. Friction coefficient of the clutch disc facings

C. Flywheel surface runout during clutch engagement

D. Amount of pedal free play and release travel available

6. When torquing pressure plate (clutch cover) bolts, the technician should:

A. Tighten the bolts to twice the specified value for safety

B. Tighten each bolt fully before moving to the next one

C. Tighten only the four corner bolts and leave the rest snug

D. Tighten gradually in a crisscross pattern to the specified torque

7. A pilot bearing bore is being measured for wear. Excessive clearance between the bore and the input shaft tip will MOST likely cause:

A. Vibration and difficulty shifting as the input shaft wobbles

B. The clutch to slip badly under heavy acceleration loads

C. The pressure plate to lose its clamping force over time

D. The release bearing to spin continuously while at idle

8. The recommended way to align a clutch disc during installation is to use:

A. A straightedge laid across the flywheel face

B. A clutch alignment tool or a spare input shaft

C. A dial indicator mounted on the pressure plate

D. A feeler gauge set between the disc and flywheel

9. Synchronizer blocking ring wear is measured by checking the clearance between the ring and the:

A. Synchronizer hub splines on the main shaft

B. Shift fork groove in the sliding sleeve

C. Detent ball seated in the shift rail

D. Gear cone with a feeler gauge while pressed together

10. A transmission main shaft end play that exceeds specification is typically corrected by:

A. Adjusting the clutch pedal free play to the specification

B. Tightening the bearing retainer bolts to a higher torque

C. Installing a selective shim or snap ring of the correct thickness

D. Replacing the synchronizer assembly for the affected gear

11. When measuring gear backlash inside a manual transmission, the technician uses a:

A. Feeler gauge between the gear teeth and the case

B. Dial indicator reading the movement of one gear against another

C. Micrometer across the outside diameter of the gear

D. Torque wrench reading the resistance to rotation

12. A growling noise present in all gears and in neutral with the clutch engaged, which stops when the clutch is depressed, indicates a worn:

A. Input shaft bearing that turns whenever the clutch is engaged

B. Output shaft bearing loaded only when the vehicle is moving

C. Synchronizer ring for the most frequently used forward gear

D. Pilot bearing that makes noise only when the vehicle is in gear

13. A transmission that jumps out of one specific gear is inspected, and the engagement (dog) teeth are found rounded and worn. This wear allows the gear to:

A. Grind continuously while the gear is engaged

B. Lock up and prevent the shaft from rotating freely

C. Whine loudly under acceleration in that gear only

D. Walk out of engagement under load or vibration

14. The correct gear lubricant for a manual transmission is specified by the:

A. Viscosity of the engine oil used in the vehicle

B. Capacity of the transmission case in quarts

C. Manufacturer's service information, by viscosity and API rating

D. Color of the existing lubricant drained from the case

15. A technician measures excessive radial play in a transmission bearing by:

A. Mounting a dial indicator and moving the shaft against the bearing

B. Measuring the bearing bore with a micrometer only

C. Checking the gear backlash with a feeler gauge

D. Torquing the bearing retainer to the maximum value

16. A transmission is noisy in fourth gear (direct drive) but quiet in all other forward gears. Since power bypasses the countershaft in direct drive, the noise points to the:

A. Countershaft (cluster gear) bearings loaded in fourth gear

B. Output shaft bearing or final drive turning in direct drive

C. Input shaft pilot bearing in the crankshaft end bore

D. Synchronizer rings shared across the lower gear ranges

17. A worn shift rail detent (spring and ball) in a manual transmission will MOST likely allow the transmission to:

A. Grind when shifting into any of the forward gears

B. Lock two gears into engagement at the same time

C. Lose lubricant past the shift rail seal at speed

D. Jump out of gear because the rail is not held in position

18. Metal particles found on a transmission's magnetic drain plug during service indicate:

A. The wrong lubricant viscosity was installed previously

B. Normal operation that requires no further investigation

C. Internal wear that warrants further inspection of components

D. The magnet itself is breaking apart in the lubricant

19. The proper procedure for filling a manual transmission is to add lubricant until it:

A. Reaches the bottom of the fill plug hole with the vehicle level

B. Covers the top of all the gears regardless of vehicle position

C. Reaches a marked line on a dipstick after the engine warms up

D. Begins to overflow from the transmission vent breather tube

20. Differential side bearing preload on a transaxle is established by:

A. Torquing the differential cover bolts to a higher value

B. Selecting shims of the proper thickness for the bearings

C. Adjusting the clutch pedal free play to specification

D. Tightening the axle hub nuts to the maximum torque

21. A transaxle final drive ring and pinion backlash is measured using a:

A. Feeler gauge between the ring gear and the case

B. Micrometer across the pinion gear outer diameter

C. Dial indicator reading the ring gear tooth movement

D. Torque wrench measuring the pinion rotating resistance

22. A CV joint boot is inspected during service. The boot should be replaced if it shows:

A. Only a light coating of road dust on its outer surface

B. The original factory grease visible through the vent

C. Normal flexing creases from suspension movement

D. Cracks, tears, or thrown grease indicating a breach

23. The correct torque procedure for a transaxle axle hub nut is to:

A. Torque to the specified value and secure with the proper retainer

B. Hand-tighten only and rely on the wheel to hold it

C. Torque to twice the specified value for added safety

D. Leave it loose enough to allow the bearing to float

24. A clicking noise from a FWD vehicle that increases during turns, with intact boots confirmed, indicates a worn:

A. Inner CV (tripod) joint loaded during straight acceleration

B. Front wheel bearing loaded only during hard cornering

C. Outer CV joint articulating during the turning maneuver

D. Differential side gear with excessive backlash present

25. A FWD transaxle's final drive whine that tracks vehicle speed in all gears points to worn:

A. Input shaft bearings turning with the engine speed

B. Final drive ring and pinion gears or their bearings

C. Synchronizer rings shared across the gear ranges

D. Clutch release bearing riding on the diaphragm fingers

26. When measuring a half shaft for the cause of a vibration, the technician checks the shaft for:

A. The correct gear lubricant level in the transaxle case

B. The clutch pedal free play and release travel distance

C. The differential side bearing preload shim thickness

D. Runout, a bent condition, or a worn or damaged joint

27. Drive shaft runout is measured with a dial indicator, and a reading beyond specification indicates the shaft is:

A. Bent or has accumulated debris and must be corrected

B. Correctly balanced and ready for reinstallation

C. Worn at the U-joints and needs new bearing caps

D. Too short for the application and must be replaced

28. U-joint wear is checked by gripping the drive shaft and:

A. Spinning it rapidly to listen for any bearing noise

B. Measuring its overall length with a tape measure

C. Attempting to rotate and rock it to feel for play

D. Applying the parking brake and revving the engine

29. The working angle of a U-joint is measured with an inclinometer (angle finder) to verify it is:

A. As large as possible to maximize articulation capability

B. Within the manufacturer's specified range for smooth operation

C. Exactly ninety degrees at both ends of the drive shaft

D. Set to zero degrees during normal vehicle operation

30. When servicing a two-piece drive shaft, the center support bearing is inspected for:

A. The correct overall drive shaft length specification

B. The proper U-joint operating angle at each end

C. The amount of free play in the slip yoke splines

D. Roughness, noise, and deterioration of the rubber insulator

31. A drive shaft is index-marked before removal so that, on reinstallation, the technician can maintain the:

A. Correct U-joint working angle at the pinion flange

B. Proper slip yoke engagement depth in the transmission

C. Factory balance and phasing of the assembly

D. Specified clearance between the shaft and the exhaust

32. The slip yoke splines on a RWD drive shaft should be lubricated with:

A. The chassis grease specified for the spline application

B. Engine oil poured over the splines before assembly

C. Automatic transmission fluid wiped onto the splines

D. Gear oil applied and allowed to drain off the splines

33. Pinion bearing preload on a drive axle is measured with an:

A. Dial indicator reading the ring gear tooth movement

B. Inch-pound torque wrench measuring rotating resistance

C. Outside micrometer across the pinion gear diameter

D. Feeler gauge between the pinion and carrier bearing

34. The gear tooth contact pattern on a ring and pinion is checked using:

A. A feeler gauge between the ring and pinion teeth

B. A dial indicator reading the ring gear runout

C. An inch-pound torque wrench on the pinion nut

D. Marking compound painted on the gear teeth and rotated

35. A ring and pinion contact pattern that rides too high on the tooth, toward the toe, indicates the pinion is:

A. Set correctly and requires no further adjustment

B. Adjusted with too much bearing preload applied

C. Positioned too far from the ring gear and should move inward

D. Set with backlash that is too tight and must be increased

36. Drive axle backlash is adjusted on a carrier with side adjuster nuts by:

A. Moving the ring gear toward or away from the pinion with the adjusters

B. Adding shims behind the pinion head to change the depth

C. Tightening the pinion nut to crush the collapsible spacer

D. Installing a thicker axle shaft retainer plate at each end

37. A drive axle lubricant level is correct when it reaches the:

A. Top of the ring gear regardless of vehicle position

B. Bottom of the fill plug hole with the vehicle level

C. Halfway mark on the differential cover sight glass

D. Full line on the axle dipstick after a road test

38. A C-clip axle shaft end play is measured with a dial indicator, and excessive end play indicates worn:

A. Wheel bearings at the outer end of the axle shaft

B. Pinion bearings supporting the drive pinion gear

C. Ring gear teeth meshing with the drive pinion

D. Differential side gears or thrust washers in the carrier

39. A limited-slip differential is checked for proper operation by:

A. Holding one wheel and confirming the other requires torque to turn

B. Measuring the ring and pinion backlash with a dial indicator

C. Checking the pinion bearing preload with a torque wrench

D. Inspecting the pinion seal for external lubricant leakage

40. The correct lubricant for a clutch-type limited-slip differential must include the:

A. Highest available viscosity rating for heavy loads

B. Synthetic base stock required for cold weather only

C. Specified friction modifier additive for the clutch packs

D. Lowest extreme-pressure additive level to protect seals

41. A transfer case fluid level is checked at the:

A. Dipstick located on the transfer case top cover

B. Fill plug, with the fluid level at the bottom of the hole

C. Sight glass mounted on the rear output housing

D. Vent breather tube on the top of the case

42. A 4WD vehicle's front axle vacuum disconnect is tested by checking for:

A. The correct ring and pinion backlash in the front axle

B. The proper transfer case chain tension and sprocket wear

C. The rear differential side gear backlash setting

D. Vacuum supply, hose integrity, and actuator operation

43. A transfer case chain is inspected for stretch by checking the amount of:

A. Free play or deflection in the chain against specification

B. Backlash between the front and rear output gears

C. Preload on the front output shaft bearings

D. Runout in the rear output shaft companion flange

44. The MOST important measurement to verify before approving an AWD vehicle for service is that the:

A. Engine compression is even across all the cylinders

B. Front brake pads are thicker than the rear pads

C. Four tires match in size, circumference, and tread depth

D. Exhaust back pressure is within the specified range

45. A transfer case planetary reduction gear set provides low range by:

A. Locking the front and rear outputs together directly

B. Disconnecting the front driveshaft from the case

C. Increasing the output speed for higher top-end velocity

D. Reducing output speed while multiplying the torque

46. An electronically controlled AWD coupling applies its clutch pack by command from:

A. A purely mechanical centrifugal weight assembly

B. A control module through an electric or electrohydraulic actuator

C. Engine vacuum routed through a diaphragm servo unit

D. A viscous silicone fluid that shears between the plates

47. A viscous coupling in an AWD system transfers torque when:

A. A speed difference develops between the input and output plates

B. The driver manually selects the four-wheel-drive mode

C. The transfer case is shifted into the low range position

D. The brake pedal is applied during hard deceleration

48. A part-time 4WD system should NOT be operated in four-wheel drive on dry pavement because it:

A. Will drain the transfer case fluid through the vent

B. Causes the front hubs to lock permanently in place

C. Has no center differential, causing driveline windup and binding

D. Overheats the rear differential ring and pinion gears

49. A full-time 4WD system can operate safely on dry pavement because it has a:

A. Set of manual locking hubs the driver engages first

B. Front axle that disconnects above a set road speed

C. Center differential allowing front-to-rear speed difference

D. Smaller front tire set that absorbs the speed difference

50. Before returning a 4WD vehicle after transfer case service, the technician should verify the:

A. Engine idle speed and ignition timing specifications

B. Fluid level, engagement in all ranges, and absence of leaks

C. Brake pad thickness on all four wheels against the minimum

D. Tire rotation pattern against the maintenance schedule

PRACTICE EXAM 17: ANSWER KEY AND EXPLANATIONS

1. D — A clutch disc thickness reading is compared to the manufacturer's minimum disc thickness specification to judge whether the disc is serviceable. Below minimum, clamping capacity drops and the disc must be replaced. The minimum spec is the pass/fail reference.
2. A — Flywheel friction-surface runout is checked with a dial indicator reading against the rotating surface. Excessive runout causes chatter and pulsation. The dial indicator is the correct measuring tool.
3. C — Pedal free play is the travel before the release bearing contacts the pressure plate fingers, ensuring the bearing is not loaded at rest. This protects the bearing and full clamp. Free play is measured up to first finger contact.
4. B — Uneven release finger height causes the pressure plate to release unevenly, producing chatter or incomplete disengagement. The fingers must lift the diaphragm squarely. Even finger height ensures smooth, complete release.
5. D — The master cylinder pushrod length sets the amount of pedal free play and the release travel available, positioning the pedal correctly. It does not change clamp force or friction. Pushrod adjustment governs free play and travel.
6. D — Pressure plate cover bolts are tightened gradually in a crisscross pattern to the specified torque so the cover seats evenly without distortion. Over-torquing or one-at-a-time tightening warps the assembly. The staged crisscross to spec is correct.
7. A — Excessive clearance in the pilot bearing bore lets the input shaft tip wobble, producing vibration and difficulty shifting. The pilot bearing must support the shaft closely. A worn bore allows the wobble that causes these symptoms.
8. B — A clutch disc is centered during installation with a clutch alignment tool or a spare input shaft so the transmission input shaft can pass through into the pilot bearing. Straightedges, indicators, or feeler gauges do not center the disc. The alignment tool ensures correct centering.
9. D — Blocking ring wear is measured by checking the clearance between the ring and the gear cone with a feeler gauge while pressed together. Too little gap means the ring is worn. The ring-to-cone gap is the wear measurement.
10. C — Main shaft end play beyond specification is corrected with a selective shim or snap ring of the proper thickness to bring play within range. Bolt torque or synchronizer changes do not set end play. The selective shim controls it.
11. B — Gear backlash inside a transmission is measured with a dial indicator reading the movement of one gear against another. Feeler gauges or micrometers do not capture rotational play. The dial indicator measures backlash.
12. A — A growl in all gears and in neutral with the clutch engaged that stops when the pedal is depressed comes from the input shaft bearing, which turns whenever the clutch is engaged. Depressing the pedal stops the shaft and the noise. The condition isolates the input bearing.
13. D — Rounded, worn engagement (dog) teeth no longer hold the gear locked, so it walks out of engagement under load or vibration. The teeth must hold positively to keep the gear engaged. Their wear causes the jump-out.
14. C — The correct gear lubricant is specified by the manufacturer's service information, by viscosity and rating, to suit the synchronizers and gears. Engine oil viscosity, case capacity, or fluid color are not the reference. The service spec defines the lubricant.

15. A — Bearing radial play is measured by mounting a dial indicator and moving the shaft against the bearing to read the movement. A bore micrometer alone or a backlash check does not show radial play. The dial indicator measures it.
16. B — Noise only in fourth gear, where power flows straight through and bypasses the countershaft, points to the output shaft bearing or final drive turning in direct drive. Countershaft noise would disappear in fourth. The direct-drive-only noise isolates the output side.
17. D — A worn shift rail detent cannot hold the rail in its selected position, so the transmission jumps out of gear. The detent's job is positional holding. Its wear allows the slipout.
18. C — Metal particles on the magnetic drain plug indicate internal wear and warrant further inspection of the gears and bearings. While a faint film can be normal, visible particles call for investigation. The metal is a wear signal.
19. A — A manual transmission is filled to the bottom of the fill plug hole with the vehicle level, which sets the correct level. Filling by gear coverage, a dipstick line, or vent overflow is incorrect for most units. The fill plug opening is the reference.
20. B — Transaxle differential side bearing preload is set by selecting shims of the proper thickness for the bearings. Cover bolt torque, pedal free play, or hub nut torque do not set preload. Selective shims establish side bearing preload.
21. C — Transaxle final drive backlash is measured with a dial indicator reading the ring gear tooth movement. Feeler gauges, micrometers, or torque wrenches do not measure backlash. The dial indicator at the tooth is correct.
22. D — A CV boot is replaced when it shows cracks, tears, or thrown grease indicating a breach that lets contaminants in. Dust, visible grease through a vent, or normal flex creases are not failures. A breached boot must be replaced.
23. A — A transaxle axle hub nut is torqued to the specified value and secured with the proper retainer, since it sets the bearing relationship and holds the shaft. Hand-tightening, over-torquing, or leaving it loose is improper. Torque-and-retain is correct.
24. C — A click that increases during turns, with boots intact, indicates a worn outer CV joint articulating during the maneuver. Inner joints shudder on acceleration and wheel bearings growl. The turning click isolates the outer joint.
25. B — A final drive whine that tracks vehicle speed in all gears comes from worn ring and pinion gears or their bearings, which turn with road speed. Input bearings and synchronizers tie to engine or clutch conditions. The speed correlation locates the final drive.
26. D — A half shaft is checked for runout, a bent condition, or a worn or damaged joint when diagnosing a vibration. Lubricant level, pedal free play, or preload shims are unrelated. Inspecting the shaft and joints addresses the vibration.
27. A — Drive shaft runout beyond specification indicates the shaft is bent or has accumulated debris and must be corrected. A true shaft reads within limits. The high runout points to a bent or fouled tube.
28. C — U-joint wear is checked by gripping the shaft and attempting to rotate and rock it to feel for play in the bearing caps. Spinning, measuring length, or revving do not reveal joint wear. The rock-and-rotate test exposes the play.
29. B — A U-joint working angle is measured with an inclinometer to verify it falls within the manufacturer's specified range for smooth operation. Maximum, ninety-degree, or zero angles are not the goal. The spec range is the target.

30. D — A center support bearing is inspected for roughness, noise, and deterioration of its rubber insulator. Shaft length, joint angles, or yoke play are separate checks. The bearing and insulator condition is what matters here.
31. C — A drive shaft is index-marked before removal to maintain the factory balance and phasing on reinstallation. Reassembling out of position causes vibration. The mark preserves balance and phasing.
32. A — Slip yoke splines are lubricated with the chassis grease specified for the application, which withstands the loads and temperatures. Engine oil, transmission fluid, or gear oil are unsuitable. The specified chassis grease is correct.
33. B — Pinion bearing preload is measured with an inch-pound torque wrench reading the rotating resistance of the pinion. A dial indicator, micrometer, or feeler gauge measure other dimensions. Rotating torque is the preload measurement.
34. D — The gear tooth contact pattern is checked with marking compound painted on the teeth and the gears rotated to transfer the pattern. Feeler gauges, runout, or nut torque do not show the pattern. Marking compound reveals contact.
35. C — A pattern riding too high and toward the toe shows the pinion is too far from the ring gear and must move inward to center the pattern. Depth controls pattern position. Moving the pinion in corrects the high-toe contact.
36. A — Backlash on a carrier with side adjusters is set by moving the ring gear toward or away from the pinion using the adjuster nuts. Pinion shims, the crush sleeve, or retainer plates control other settings. The side adjusters set backlash.
37. B — A drive axle is filled to the bottom of the fill plug hole with the vehicle level, establishing the correct level. Ring-gear coverage, a sight glass, or a dipstick are not the standard reference. The fill plug opening sets the level.
38. D — Excessive C-clip axle end play indicates worn differential side gears or thrust washers in the carrier, since these control axle position. Wheel, pinion, and ring gear wear show different symptoms. The end play points to the side gears and washers.
39. A — A limited-slip differential is checked by holding one wheel and confirming the other requires torque to turn, showing the clutch packs still transfer torque. Backlash, preload, or seal checks do not test limited-slip action. The resistance test confirms operation.
40. C — A clutch-type limited-slip differential requires the specified friction modifier additive for its clutch packs to engage smoothly. Without it the unit chatters. The friction modifier is the essential lubricant feature.
41. B — Transfer case fluid level is checked at the fill plug, with the level at the bottom of the hole. Dipsticks, sight glasses, or vents are not the standard check point on most units. The fill plug sets the level.
42. D — A vacuum front-axle disconnect is tested by checking the vacuum supply, hose integrity, and actuator operation. Ring gear backlash, chain tension, or side gear backlash are unrelated to the vacuum system. The vacuum components are what to verify.
43. A — A transfer case chain is checked for stretch by measuring its free play or deflection against specification. Backlash, bearing preload, or flange runout are different measurements. Chain deflection indicates stretch.
44. C — The key verification before servicing an AWD vehicle is that all four tires match in size, circumference, and tread depth, since mismatches strain the driveline. Compression, brake pads, or back pressure are unrelated. Tire matching is the critical check.

45. D — A planetary reduction gear set provides low range by reducing output speed while multiplying torque for slow, heavy work. It does not lock outputs, disconnect a shaft, or raise speed. Speed reduction with torque increase defines low range.
46. B — An electronically controlled coupling applies its clutch pack on command from a control module through an electric or electrohydraulic actuator. Centrifugal, vacuum, or viscous methods are not used in these units. The module-commanded actuator applies the clutch.
47. A — A viscous coupling transfers torque when a speed difference develops between its input and output plates and the silicone fluid resists shear. It engages automatically with slip, not by driver selection or braking. Speed difference triggers torque transfer.
48. C — A part-time 4WD system has no center differential, so using it on dry pavement causes driveline windup and binding because the axles cannot turn at different speeds in turns. It is meant for low-traction surfaces. The missing center differential is the reason.
49. C — A full-time 4WD system has a center differential allowing front-to-rear speed difference, making it safe on dry pavement. This distinguishes it from a part-time system. The center differential relieves the windup.
50. B — Before returning a serviced 4WD vehicle, the technician verifies the fluid level, engagement in all ranges, and the absence of leaks to confirm the repair. Engine timing, brake pads, and rotation schedule are outside this service. Confirming fluid, engagement, and leaks completes the job.