PRACTICE EXAM 25 — QUESTIONS 1–40

1. A bus accelerates poorly from a stop, fluid is good, and stall speed reads above specification. The MOST likely cause is:

A. The engine over-producing power

B. A seized stator

C. Slipping clutches or low apply pressure

D. A locked converter

2. Technician A says the impeller is engine-driven. Technician B says the turbine drives the transmission input. Who is correct?

A. Both Technician A and Technician B

B. Technician A only

C. Technician B only

D. Neither Technician A nor Technician B

3. Each of the following can cause a transmission to overheat EXCEPT:

A. Continuous converter slip

B. A restricted cooler

C. A correctly applied lockup clutch at cruise

D. An incorrect fluid level

4. A flare with no lasting slip during an upshift MOST likely indicates:

A. High apply pressure

B. The off-going clutch releasing before the on-coming applies

C. A plugged breather

D. A worn wheel bearing

5. The TCM detects clutch slip by comparing:

A. Input speed to output speed

B. Coolant temperature to ambient

C. Battery voltage to alternator output

D. Fuel pressure to barometric pressure

6. Which fluid is required in a transit automatic transmission?

A. A fluid carrying the correct TES approval

B. Any universal ATF

C. EP hypoid gear lubricant

D. Engine oil

7. Low pressure across all circuits points to:

A. A single worn clutch seal

B. A system-wide cause such as a worn pump or regulator

C. An out-of-phase driveshaft

D. A plugged breather

8. A transmission shifts poorly after a mechanically correct repair. The MOST likely overlooked step is:

A. Refilling the differential

B. Replacing the driveshaft

C. Resetting and relearning adaptives

D. Clearing the breather

9. Milky transmission fluid MOST likely indicates:

A. Normal cold fluid

B. Coolant intrusion from a failed cooler

C. Excellent condition

D. The correct fluid type

10. A bus overheats only at highway speed, and scan data shows the converter never achieving lockup. The focus should be:

A. The differential lubricant

B. The lockup clutch and its control circuit

C. A wheel seal

D. The driveshaft slip yoke

11. The valve body functions as the:

A. Source of all hydraulic pressure

B. Cooling heat exchanger

C. Mechanical link between engine and transmission

D. Hydraulic control center routing pressurized fluid

12. A bus is towed in dead with no transmission pressure while moving because:

A. The output speed sensor failed

B. The valve body is stuck

C. The breather is plugged

D. The pump is engine-driven, so no pressure with the engine off

13. A stall test reads below specification. This MOST likely indicates:

A. Clutch slippage

B. An overfilled transmission

C. The engine not producing full power or a stator problem

D. A locked converter

14. Before mating the transmission to the engine, the technician must verify:

A. The torque converter is fully seated

B. The driveshaft is balanced

C. The breather is clear

D. The wheel bearings are adjusted

15. Technician A says low apply pressure causes a slipping shift. Technician B says high apply pressure causes a harsh shift. Who is correct?

A. Both Technician A and Technician B

B. Technician A only

C. Technician B only

D. Neither Technician A nor Technician B

16. A restricted transmission filter would MOST likely cause:

A. Higher line pressure

B. Low pressure, slipping, and overheating

C. Improved shift quality

D. Coolant contamination

17. A whine present in neutral that rises with engine speed points to the:

A. Pump or converter/input components

B. Differential side gears

C. Wheel bearings

D. Driveshaft center bearing

18. A planetary gearset produces direct drive (1:1) when:

A. The ring gear is held

B. The carrier is held

C. The sun gear is held

D. Any two members are locked together

19. A bus with an integral retarder shows weak retarding and high fluid temperature. The MOST likely cause is:

A. A shattered rotor

B. An out-of-phase driveshaft

C. An over-adjusted wheel bearing

D. TCM protective heat limiting

20. Adaptive learning primarily functions to:

A. Adjust clutch apply timing and pressure as components wear

B. Control engine fuel injection

C. Increase the differential ratio

D. Lock the converter at idle

21. An active code and a stored code appear on unrelated circuits. The technician should:

A. Diagnose the active code first

B. Diagnose the stored code first

C. Clear both without diagnosis

D. Ignore both

22. The lockup clutch improves cruise efficiency by:

A. Increasing torque multiplication

B. Allowing idle while stopped

C. Eliminating fluid slip between impeller and turbine

D. Lowering the stall speed

23. A solenoid tests electrically good but its circuit misbehaves. The BEST next step is to:

A. Replace the TCM

B. Re-phase the driveshaft

C. Adjust the wheel bearings

D. Perform a hydraulic pressure test of the circuit

24. Before condemning a transmission for a complaint, good practice is to:

A. Remove it immediately

B. Exhaust in-vehicle inspection and adjustment first

C. Replace the differential

D. Re-phase the driveshaft

25. The first step in diagnosing any transmission complaint is to:

A. Remove the transmission

B. Replace the valve body

C. Flush the cooler

D. Verify the complaint with a road test

26. Each of the following is a TCM sensor input EXCEPT:

A. Input speed

B. Output speed

C. Fluid temperature

D. Differential backlash

27. Before condemning the transmission internals for a road-speed slip sensation, the technician should FIRST:

A. Remove the transmission

B. Confirm lockup clutch operation

C. Replace the pump

D. Adjust the wheel bearings

28. A harsh upshift, with fluid confirmed good and high apply pressure measured, indicates:

A. A pressure control fault commanding excessive pressure

B. An early off-going release

C. A non-locking converter

D. A plugged breather

29. A driveshaft slip yoke serves to:

A. Multiply torque

B. Hold the ring gear

C. Accommodate length change as the suspension moves

D. Regulate line pressure

30. A U-joint at a near-zero working angle is MOST likely to suffer:

A. Excessive lubrication

B. Brinelling from insufficient rotation

C. Improved phasing

D. Reduced shaft speed

31. Before balancing a driveshaft to cure vibration, the technician must FIRST confirm:

A. The adaptives are reset

B. The differential is refilled

C. The cooler is flushed

D. Phasing, angles, joints, bearing, slip yoke, and runout are correct

32. Each of the following can cause driveshaft vibration EXCEPT:

A. Worn U-joints

B. An out-of-phase assembly

C. A shaft with correct phasing, sound joints, and runout in spec

D. A worn center support bearing

33. A single-reduction drive axle turns power 90 degrees and provides final reduction through the:

A. Slip yoke

B. Output speed sensor

C. Hypoid ring and pinion

D. Differential spider gears alone

34. Backlash in a ring and pinion is BEST defined as:

A. The bearing load on the pinion

B. The clearance between the meshing teeth

C. The lubricant level

D. The internal housing pressure

35. A drive axle is noisy only when cornering. The source is:

A. The drive side of the ring and pinion

B. A straight-line wheel bearing

C. The lockup clutch

D. The differential side and spider gears

36. An axle seal leak recurs shortly after replacement. The technician most likely overlooked:

A. Inspecting and clearing the housing breather

B. Resetting the adaptives

C. Adjusting backlash

D. Replacing the driveshaft

37. A wheel seal leaking onto the brakes should be addressed by:

A. Topping off and releasing the bus

B. Resetting the adaptives

C. Re-phasing the driveshaft

D. Correcting the leak and inspecting the brakes for contamination before release

38. A hypoid axle requires EP lubricant because of the:

A. Low operating temperature

B. Sensor electrical load

C. Sliding tooth action of the offset gears

D. Housing air pressure

39. A drive axle is noisy on acceleration but quiet on coast. The source is:

A. The coast side of the ring and pinion

B. A wheel bearing

C. The drive side of the ring and pinion mesh

D. The torque converter

40. During final-drive setup, backlash is within spec but the contact pattern is off-center. The BEST conclusion is:

A. The correct backlash makes the pattern irrelevant

B. Pinion depth is likely incorrect and needs shim correction

C. The adaptives need resetting

D. The cooler is restricted

Answer Key & Full Answer Explanations

1. C — Poor acceleration with good fluid and an above-spec stall reading points to slipping clutches or low apply pressure. A seized stator lowers stall, the engine does not over-produce power, and a locked converter would not raise it. High stall means slippage.

2. A — Both technicians are correct: the impeller is engine-driven and the turbine drives the transmission input. These are the two power-transfer elements of the converter. Together they describe how engine power enters the transmission.

3. C — A correctly applied lockup clutch at cruise reduces heat, so it is the exception. Continuous slip, a restricted cooler, and incorrect fluid level all cause overheating. Lockup is part of the cure.

4. B — A flare with no lasting slip indicates the off-going clutch releasing before the on-coming applies. High pressure causes harshness, and the breather and bearing are unrelated. Flare is a timing handoff problem.

5. A — The TCM compares input speed to output speed to detect slip, since a gear holds a fixed ratio between them. Coolant, battery, and fuel comparisons are unrelated. This comparison is the basis of slip detection.

6. A — A transit automatic requires a fluid carrying the correct TES approval. Universal ATF, hypoid lube, and engine oil are wrong and harmful. Fluid specification is a functional requirement.

7. B — Low pressure across all circuits points to a system-wide cause such as a worn pump or regulator. A single clutch seal affects one circuit, and driveshaft and breather faults are unrelated. The pattern distinguishes system-wide faults.

8. C — Poor shifting after a mechanically correct repair most likely means resetting and relearning adaptives was overlooked. Differential, driveshaft, and breather work are unrelated. The TCM keeps applying old compensation until reset.

9. B — Milky fluid indicates coolant intrusion from a failed cooler. It is not normal cold fluid, excellent condition, or a fluid-type indicator. Milky fluid is a cooler-failure clue.

10. B — Highway-only overheating with no lockup achieved points to the lockup clutch and its control circuit, since continuous slip generates heat. Differential lube, a wheel seal, and the slip yoke are unrelated. The missing lockup is the lead.

11. D — The valve body is the hydraulic control center routing pressurized fluid. The pump is the source, the cooler removes heat, and the converter is the fluid/mechanical link. The valve body directs flow.

12. D — No pressure while moving a dead bus is because the pump is engine-driven, so no pressure with the engine off. A speed sensor, valve body, or breather fault would not eliminate all pressure. Engine-off means no pump flow.

13. C — A stall test below specification indicates the engine not producing full power or a stator problem. Clutch slippage raises stall, and the other options do not lower it. Low stall points to engine or converter.

14. A — Before mating to the engine, the torque converter must be verified fully seated, or the pump is destroyed on start-up. Driveshaft balance, breather, and wheel bearings are unrelated. Full seating is a critical pre-mating step.

15. A — Both technicians are correct: low apply pressure causes a slipping shift and high apply pressure causes a harsh shift. Pressure direction maps to shift feel. Both statements are accurate.

16. B — A restricted filter starves the pump, causing low pressure, slipping, and overheating. It does not raise pressure, improve shifts, or contaminate with coolant. A clogged filter mimics internal faults.

17. A — A whine in neutral that rises with engine speed points to the pump or converter/input components, which turn with the engine regardless of gear. Differential gears, wheel bearings, and the center bearing track road or shaft speed. The engine-speed relationship localizes it upstream.

18. D — Direct drive (1:1) occurs when any two members are locked together so the set rotates as a unit. Holding the ring, carrier, or sun gear produces reduction or reverse. Locked members eliminate relative gear motion.

19. D — Weak retarding with high fluid temperature most likely means TCM protective heat limiting. A shattered rotor, out-of-phase shaft, or over-adjusted bearing are not indicated. Protective limiting is commonly mistaken for failure.

20. A — Adaptive learning adjusts clutch apply timing and pressure as components wear. It does not control fuel injection, increase the differential ratio, or lock the converter at idle. Adaptives maintain shift quality over time.

21. A — With one active and one stored code on unrelated circuits, the active code is diagnosed first because the fault is present now. The stored code may be intermittent, and clearing or ignoring both abandons diagnosis. Active faults take priority.

22. C — The lockup clutch improves cruise efficiency by eliminating fluid slip between impeller and turbine. It does not increase multiplication, allow idle-while-stopped, or lower stall. Removing slip improves efficiency.

23. D — When a solenoid tests good but the circuit misbehaves, a hydraulic pressure test of the circuit confirms a stuck valve or leak. Replacing the TCM, re-phasing, or adjusting bearings do not address it. Electrical and hydraulic testing complement each other.

24. B — Good practice is to exhaust in-vehicle inspection and adjustment before condemning the transmission, since inexpensive faults can mimic internal problems. Removing it, replacing the differential, or re-phasing are premature. Diagnosis earns the teardown.

25. D — The first step in diagnosing any transmission complaint is to verify the complaint with a road test. Removal, valve body replacement, and cooler flushing skip ahead. Verification anchors the process.

26. D — Differential backlash is an axle measurement, not a TCM input, so it is the exception. Input speed, output speed, and fluid temperature are genuine inputs. The TCM does not read axle gear clearance.

27. B — Before condemning the internals for a road-speed slip sensation, the technician should first confirm lockup clutch operation, since lockup slip mimics internal wear. Removal, pump replacement, and wheel bearing work are premature. Lockup is checked first.

28. A — A harsh upshift with good fluid and high apply pressure measured indicates a pressure control fault commanding excessive pressure. An early off-going release causes flare, and the converter and breather are unrelated. High pressure produces abrupt engagement.

29. C — The slip yoke accommodates length change as the suspension moves. It does not multiply torque, hold the ring gear, or regulate pressure. The splined slip joint handles the changing distance.

30. B — A near-zero working angle causes brinelling from insufficient rotation. It does not cause excessive lubrication, improved phasing, or reduced shaft speed. Too little angle dents the bearings.

31. D — Before balancing, the technician must first confirm phasing, angles, joints, bearing, slip yoke, and runout are correct, because balancing cannot fix those faults. Resetting adaptives, refilling the differential, or flushing the cooler are unrelated. Balance is the last step.

32. C — A shaft with correct phasing, sound joints, and runout in spec will not, by itself, vibrate, so it is the exception. Worn joints, out-of-phase assembly, and a worn center bearing all cause vibration. The exception describes a good shaft.

33. C — The hypoid ring and pinion turns power 90 degrees and provides final reduction. The slip yoke, speed sensor, and spider gears alone do not. The ring and pinion is the final drive gearset.

34. B — Backlash is the clearance between the meshing ring and pinion teeth. It is not bearing load (preload), lubricant level, or housing pressure. Backlash is set with a dial indicator to specification.

35. D — Noise only when cornering points to the differential side and spider gears, which rotate relative to each other only in turns. The drive side, a straight-line wheel bearing, and the lockup clutch are not turn-specific. Turn-only noise isolates the differential internals.

36. A — A recurring seal leak shortly after replacement points to the housing breather not being inspected and cleared; a plug forces lubricant past the new seal. Resetting adaptives, adjusting backlash, or replacing the driveshaft are unrelated. Always check the breather.

37. D — A seal leaking onto the brakes requires correcting the leak and inspecting the brakes for contamination before release, since contaminated linings reduce braking. Topping off, resetting adaptives, or re-phasing ignore the safety hazard. Brake contamination is urgent.

38. C — A hypoid axle requires EP lubricant because of the sliding tooth action of the offset gears under high load. Low temperature, sensor load, and housing pressure are not the reason. The EP requirement follows from hypoid geometry.

39. C — Noise on acceleration but quiet on coast points to the drive side of the ring and pinion mesh, loaded under power. The coast side loads on deceleration, a wheel bearing gives cyclic noise, and the converter is a transmission component. Drive-versus-coast isolates the loaded side.

40. B — Backlash within spec but an off-center contact pattern indicates pinion depth is likely incorrect and needs shim correction. Correct backlash does not make the pattern irrelevant, and adaptives and the cooler are unrelated. The pattern confirms depth.