PRACTICE EXAM 18 — QUESTIONS 1–40

1. Before working beneath a transit bus, the single most important safety practice is to:

A. Support the bus on rated jack stands or a certified lift, never a jack alone

B. Rely on the hydraulic jack for the duration of the work

C. Apply only the parking brake without other support

D. Leave the engine running for hydraulic assist

2. A stall test is potentially hazardous primarily because:

A. The differential may overfill

B. The driveshaft loses phase

C. The breather closes

D. Excessive duration generates damaging heat in seconds

3. Hot transmission fluid presents a burn hazard, so the technician should:

A. Drain it at full operating temperature without protection

B. Check the level while the fluid is boiling

C. Allow components to cool and wear appropriate protection

D. Ignore temperature entirely

4. A wheel seal leaking lubricant onto the brake linings is a safety hazard because it:

A. Reduces braking effectiveness on a passenger bus

B. Raises transmission line pressure

C. Re-phases the driveshaft

D. Locks the torque converter

5. A failing universal joint with excessive play should not be returned to service because it can:

A. Fail catastrophically, dropping or whipping the driveshaft

B. Improve fuel economy

C. Lower the stall speed

D. Reset the adaptives

6. When mating a transmission with the converter not fully seated, the consequence on first start-up is:

A. Improved shift quality

B. A driveshaft phasing error

C. Excessive backlash

D. Destruction of the pump and converter

7. Transit buses are heavy, so removing a transmission requires:

A. A transmission jack or lifting equipment rated for the load

B. Supporting it by hand

C. A single chain hoist with no rating

D. Balancing it on the driveshaft

8. The retarder must never be relied upon as the primary braking system because:

A. It increases engine power

B. It locks the converter

C. The service brakes remain primary and are required to stop the bus

D. It sets the backlash

9. Applying battery voltage directly to a control solenoid to "test" it can:

A. Improve its operation

B. Damage the solenoid unless the procedure authorizes it

C. Reset the adaptives

D. Re-phase the driveshaft

10. Improper ring and pinion setup under the high loads of a transit axle can lead to:

A. Lower operating temperature

B. Improved fuel economy

C. Noise, overheating, and rapid gear failure

D. A locked converter

11. A drive axle gear or bearing failure on a loaded transit bus is serious because it can:

A. Cause loss of drive or wheel-end failure in service

B. Improve braking

C. Lower line pressure

D. Re-phase the driveshaft

12. Sustained driveline vibration is not just a comfort issue because it can:

A. Improve U-joint life

B. Lower the stall speed

C. Reset the adaptives

D. Accelerate wear and progress to component failure

13. When securing a bus for service, wheel chocks and the parking brake are used to:

A. Increase line pressure

B. Improve fluid flow

C. Set the bearing preload

D. Prevent vehicle movement

14. Using a non-TES-approved fluid is hazardous to the transmission because it can:

A. Improve shift quality

B. Lower operating temperature

C. Degrade shifts, cause wear, and void warranty

D. Re-phase the driveshaft

15. A leaking seal near the brakes requires the technician to inspect the brakes for contamination because:

A. Contaminated linings compromise braking and passenger safety

B. The leak raises line pressure

C. The leak re-phases the driveshaft

D. The leak locks the converter

16. Pressure testing is performed with the engine running and the transmission hot, so the technician must:

A. Follow the procedure, secure the vehicle, and stay clear of rotating components

B. Remove the driveshaft first

C. Drain the differential

D. Reset the adaptives

17. Excessive transmission fluid temperature is treated as urgent because it can:

A. Improve shift quality

B. Lower line pressure

C. Re-phase the driveshaft

D. Permanently damage clutches and seals

18. A technician should never work under a bus supported only by a hydraulic jack because:

A. The jack improves access

B. The jack sets the preload

C. A jack is a lifting device, not a holding device

D. The jack cools the fluid

19. Stall-test duration must never exceed the specified time because:

A. Excessive heat can destroy the transmission and converter quickly

B. It improves the reading

C. It lowers the stall speed

D. It re-phases the driveshaft

20. A broken transmission mount is a safety and driveability concern because it can:

A. Improve shift quality

B. Lower line pressure

C. Allow movement causing vibration and driveline angle changes

D. Reset the adaptives

21. When a hypoid axle is filled with the wrong (non-EP) lubricant, the hazard is:

A. Lower operating temperature

B. Improved quietness

C. Gear and bearing damage from lubricant breakdown

D. A locked converter

22. A near-zero U-joint working angle is harmful because the bearings:

A. Over-lubricate

B. Fail to rotate and brinell under load

C. Improve phasing

D. Increase shaft speed

23. A driveshaft with excessive runout left in service is a concern because the resulting vibration:

A. Improves balance

B. Lowers the stall speed

C. Resets the adaptives

D. Accelerates wear and can lead to failure

24. When lifting heavy drivetrain components, the technician must:

A. Support them by hand to save time

B. Use rated lifting equipment and keep loads balanced

C. Use any available strap

D. Balance them on the slip yoke

25. A retarder generates significant heat, so during heavy use a marginal cooling system may:

A. Improve retarding force

B. Overheat and trigger protective limiting

C. Re-phase the driveshaft

D. Lower the backlash

26. A technician must consult service information for torque values because:

A. Memory is more reliable

B. Specifications are identical across units

C. Service information is optional

D. Incorrect torque causes leaks and failures

27. Overfilling the transmission is a problem because the rotating components:

A. Lower the stall speed

B. Re-phase the driveshaft

C. Churn the fluid, causing aeration and overheating

D. Reset the adaptives

28. A plugged axle breather is a hazard to the seals because it:

A. Lowers the gear ratio

B. Builds pressure that forces lubricant past the seals

C. Cools the transmission

D. Improves backlash

29. A driveshaft reassembled out of phase is a problem because it:

A. Improves balance

B. Produces a torsional vibration that can damage components

C. Lowers the stall speed

D. Resets the adaptives

30. Greaseable U-joints run without lubrication are at risk because lack of lubrication:

A. Improves rotation

B. Is a primary cause of joint failure

C. Lowers the stall speed

D. Re-phases the shaft

31. A center support bearing with a deteriorated rubber mount left in service can cause:

A. Improved ride quality

B. Noise and vibration that worsen over time

C. Lower line pressure

D. A locked converter

32. A binding slip yoke is a concern because it can:

A. Improve balance

B. Lower the stall speed

C. Reset the adaptives

D. Feed force into the transmission and cause vibration or stress

33. Setting pinion preload by feel rather than measurement is hazardous because:

A. It improves gear life

B. Incorrect preload causes noise, overheating, or early failure

C. It lowers operating temperature

D. It re-phases the driveshaft

34. Over-tightening the pinion nut on a crush-sleeve axle is a problem because it:

A. Improves preload accuracy

B. Lowers the stall speed

C. Crushes the sleeve too far, ruining the preload

D. Re-phases the driveshaft

35. Ignoring axle noise and metal in the lubricant is dangerous because it can:

A. Improve fuel economy

B. Lower line pressure

C. Lead to a sudden in-service failure

D. Reset the adaptives

36. A wheel bearing adjusted too tight is a concern because it can:

A. Overheat and fail

B. Improve durability

C. Lower the stall speed

D. Re-phase the driveshaft

37. A wheel bearing adjusted too loose is a concern because it can cause:

A. Bearing overheating

B. Play, wobble, and wear

C. A locked converter

D. Re-phasing of the driveshaft

38. Low hypoid lubricant left unaddressed is hazardous because it causes:

A. Improved cooling

B. Higher line pressure

C. A re-phased driveshaft

D. Overheating and accelerated gear and bearing wear

39. A leaking axle seal that contaminates the brakes must be corrected before release because:

A. Brake contamination compromises safety on a passenger bus

B. It raises line pressure

C. It re-phases the driveshaft

D. It resets the adaptives

40. Returning a bus to service with a worn U-joint is unsafe because the joint can:

A. Improve fuel economy

B. Fail catastrophically and cause loss of control

C. Lower line pressure

D. Reset the adaptives

Answer Key & Full Answer Explanations

1. A — The most important safety practice is to support the bus on rated jack stands or a certified lift, never a jack alone, because a jack is a lifting device, not a holding device. Relying on a jack, the parking brake only, or a running engine are all unsafe. Proper support prevents fatal falling-load incidents.

2. D — A stall test is hazardous primarily because excessive duration generates damaging heat in seconds. Differential overfill, driveshaft phase, and the breather are unrelated. The time limit exists to prevent thermal destruction.

3. C — Because hot fluid can burn, the technician should allow components to cool and wear appropriate protection. Draining at full temperature without protection, checking while boiling, or ignoring temperature are all hazardous. Heat management is part of safe service.

4. A — A seal leaking onto the brake linings reduces braking effectiveness on a passenger bus. It does not raise line pressure, re-phase the driveshaft, or lock the converter. Contaminated linings are a direct safety hazard.

5. A — A failing U-joint with excessive play can fail catastrophically, dropping or whipping the driveshaft. It does not improve economy, lower stall speed, or reset adaptives. A failed joint can cause loss of control.

6. D — Mating with the converter not fully seated destroys the pump and converter on first start-up. It does not improve shifts, cause a phasing error, or change backlash. Full seating must be verified before mating.

7. A — Removing a heavy transit transmission requires a transmission jack or lifting equipment rated for the load. Supporting by hand, an unrated chain, or balancing on the driveshaft are unsafe. Rated equipment manages the weight.

8. C — The retarder must never be primary because the service brakes remain primary and are required to stop the bus. It does not increase engine power, lock the converter, or set backlash. The retarder is supplemental braking.

9. B — Applying battery voltage directly to a control solenoid can damage it unless the procedure authorizes it with correct values. It does not improve operation, reset adaptives, or re-phase the driveshaft. Follow the specified test procedure.

10. C — Improper ring and pinion setup under transit axle loads leads to noise, overheating, and rapid gear failure. It does not lower temperature, improve economy, or lock the converter. Precise setup is essential under high load.

11. A — A drive axle gear or bearing failure on a loaded bus can cause loss of drive or wheel-end failure in service. It does not improve braking, lower line pressure, or re-phase the driveshaft. Axle failures can be sudden and serious.

12. D — Sustained driveline vibration can accelerate wear and progress to component failure. It does not improve U-joint life, lower stall speed, or reset adaptives. Vibration is a developing failure signal, not just discomfort.

13. D — Wheel chocks and the parking brake are used to prevent vehicle movement. They do not increase line pressure, improve fluid flow, or set bearing preload. Securing the bus is a fundamental safety practice.

14. C — Non-TES-approved fluid can degrade shifts, cause wear, and void warranty, because its friction and thermal properties are wrong. It does not improve shifts, lower temperature, or re-phase the driveshaft. Fluid specification is a functional requirement.

15. A — Inspecting the brakes for contamination after a seal leak near them is necessary because contaminated linings compromise braking and passenger safety. The leak does not raise line pressure, re-phase the driveshaft, or lock the converter. Brake contamination is a safety issue.

16. A — Pressure testing with the engine running and the transmission hot requires following the procedure, securing the vehicle, and staying clear of rotating components. Removing the

driveshaft, draining the differential, or resetting adaptives are unrelated. Safety procedure governs the test.

17. D — Excessive fluid temperature is urgent because it can permanently damage clutches and seals. It does not improve shifts, lower line pressure, or re-phase the driveshaft. Overheating causes lasting internal damage.

18. C — A technician should never work under a bus on a jack alone because a jack is a lifting device, not a holding device. It does not improve access for safety, set preload, or cool fluid. The load must transfer to rated stands or a lift.

19. A — Stall-test duration must not exceed the specified time because excessive heat can destroy the transmission and converter quickly. It does not improve the reading, lower stall speed, or re-phase the driveshaft. The time limit protects the equipment.

20. C — A broken transmission mount can allow movement causing vibration and driveline angle changes. It does not improve shifts, lower line pressure, or reset adaptives. Mounts are an easily overlooked vibration source.

21. C — A hypoid axle filled with non-EP lubricant suffers gear and bearing damage from lubricant breakdown. It does not lower temperature, improve quietness, or lock the converter. EP lubricant is mandatory for hypoid gears.

22. B — A near-zero working angle lets the bearings fail to rotate and brinell under load. They do not over-lubricate, improve phasing, or increase shaft speed. Too little angle dents the bearings.

23. D — Excessive runout left in service produces vibration that accelerates wear and can lead to failure. It does not improve balance, lower stall speed, or reset adaptives. A bent shaft must be corrected.

24. B — Lifting heavy drivetrain components requires rated lifting equipment with loads kept balanced. Supporting by hand, using any strap, or balancing on the slip yoke are unsafe. Rated equipment manages the weight safely.

25. B — During heavy retarder use, a marginal cooling system may overheat and trigger protective limiting. It does not improve retarding, re-phase the driveshaft, or lower backlash. The retarder shares the transmission's cooling system.

26. D — Service information is consulted for torque values because incorrect torque causes leaks and failures. Memory is not more reliable, specs are not identical across units, and service information is not optional. Correct torque is essential.

27. C — Overfilling lets the rotating components churn the fluid, causing aeration and overheating. It does not lower stall speed, re-phase the driveshaft, or reset adaptives. Both overfill and underfill cause aeration.

28. B — A plugged breather builds pressure that forces lubricant past the seals. It does not lower the gear ratio, cool the transmission, or improve backlash. Pressure-driven leakage is the hazard.

29. B — An out-of-phase driveshaft produces a torsional vibration that can damage components. It does not improve balance, lower stall speed, or reset adaptives. Phasing exists to cancel velocity fluctuation.

30. B — Running greaseable U-joints without lubrication is a primary cause of joint failure. Lack of lubrication does not improve rotation, lower stall speed, or re-phase the shaft. Scheduled lubrication prevents failure.

31. B — A deteriorated center-support rubber mount left in service causes noise and vibration that worsen over time. It does not improve ride quality, lower line pressure, or lock the converter. The mount is a wear point.

32. D — A binding slip yoke can feed force into the transmission and cause vibration or stress. It does not improve balance, lower stall speed, or reset adaptives. A free slip joint is required.

33. B — Setting pinion preload by feel is hazardous because incorrect preload causes noise, overheating, or early failure. It does not improve gear life, lower temperature, or re-phase the driveshaft. Preload must be measured.

34. C — Over-tightening the pinion nut on a crush-sleeve axle crushes the sleeve too far, ruining the preload. It does not improve accuracy, lower stall speed, or re-phase the driveshaft. A new sleeve is then required.

35. C — Ignoring axle noise and metal in the lubricant can lead to a sudden in-service failure. It does not improve economy, lower line pressure, or reset adaptives. These are warnings of developing damage.

36. A — A wheel bearing adjusted too tight can overheat and fail. It does not improve durability, lower stall speed, or re-phase the driveshaft. Excessive preload overloads the bearing.

37. B — A wheel bearing adjusted too loose can cause play, wobble, and wear. It does not cause overheating, lock the converter, or re-phase the driveshaft. Insufficient adjustment permits harmful movement.

38. D — Low hypoid lubricant left unaddressed causes overheating and accelerated gear and bearing wear. It does not improve cooling, raise line pressure, or re-phase the driveshaft. Correct level is essential to durability.

39. A — A leaking seal contaminating the brakes must be corrected before release because brake contamination compromises safety on a passenger bus. It does not raise line pressure, re-phase the driveshaft, or reset adaptives. Brake contamination is urgent.

40. B — Returning a bus with a worn U-joint is unsafe because the joint can fail catastrophically and cause loss of control. It does not improve economy, lower line pressure, or reset adaptives. Failing joints must be replaced.