# PRACTICE EXAM 17

1. A transit bus builds air slowly, the dryer never purges, and the inlet filter is clean. Compressor output and the governor test good. The most likely remaining cause is a:

A. Restricted air dryer or stuck purge valve

B. Mismatched brake chamber

C. Worn wheel bearing

D. Glazed brake lining

2. A bus over-pressurizes until the relief valve vents at 150 psi. Technician A says replace the relief valve. Technician B says diagnose the governor or unloader. Who is correct?

A. Technician A only

B. Technician B only

C. Both technicians

D. Neither technician

3. A bus passes the static leak test but fails the applied test. The leak is most likely at the:

A. Supply reservoir fittings

B. Governor signal line at rest

C. Compressor intake filter

D. Brake chamber diaphragm or relay valve delivery seal

4. A long articulated bus applies its rear brakes late despite good air supply and foundation hardware. The technician should inspect the:

A. Safety relief valve

B. Low-pressure warning device

C. Rear relay valve and its control signal line

D. Wheel speed sensor

5. A bus pulls right when braking. The right lining is oil-soaked from a leaking wheel seal. The root cause to correct is the:

A. Brake chamber type

B. Governor cut-out setting

C. Slack adjuster length

D. Failed wheel seal contaminating the lining

6. A drum brake has in-spec thickness but weak, shiny, hard linings. The braking weakness is due to:

A. Glazing reducing the friction coefficient

B. A drum below minimum diameter

C. An over-tight wheel bearing

D. A saturated air dryer

7. A wheel with an automatic slack adjuster shows excessive stroke. Technician A says manually back-adjust it. Technician B says diagnose the cause. Who is correct?

A. Technician A only

B. Technician B only

C. Both technicians

D. Neither technician

8. A parking brake won't release with the knob in and pressure at 35 psi. The correct first action is to:

A. Replace the combination chamber

B. Cage the spring brake

C. Replace the parking control valve

D. Restore adequate system pressure and recheck

9. A seized, corroded spring chamber must be:

A. Heated to free the clamp band

B. Disassembled and rebuilt

C. Replaced as a complete sealed unit

D. Pried open to inspect the spring

10. A parked bus has its spring brakes applied. A technician presses the service pedal during a test. The feature that prevents destructive force stacking is:

A. The low-pressure warning device

B. Anti-compounding via a double check valve

C. The air dryer purge cycle

D. The wheel speed sensor

11. A parking knob popped out by itself at idle. The technician should first suspect:

A. A glazed front lining

B. A system air leak dropping pressure

C. A cracked brake rotor

D. A failed wheel speed sensor

12. A bus's parking brake holds at full pressure but drags during operation; pressure is adequate and the foundation brake is free. The cause is most likely a:

A. Leak or restriction in the spring-brake circuit

B. Saturated air dryer

C. Glazed brake lining

D. Worn wheel bearing

13. An intermittent ABS lamp appears only over rough pavement and clears on smooth roads. The cause is most likely a:

A. Loose or corroded sensor connector or chafed wiring

B. Saturated air dryer cartridge

C. Glazed brake lining

D. Worn brake drum

14. A scan tool reports a wheel speed sensor circuit fault. The sensor tests good but the air gap is excessive. The correct action is to:

A. Replace the sensor anyway

B. Set the sensor air gap to specification

C. Clear the code and release the bus

D. Increase the governor cut-out

15. A bus loses grip on a drive wheel pulling away on ice. The intervening system and method is:

A. ABS caging the spring brakes

B. ATC braking the spinning wheel and/or cutting engine torque

C. ESC raising the governor cut-out

D. The pressure protection valve closing accessories

16. A bus skids off the driver's intended path during an evasive maneuver, and selective braking corrects it. The responsible system is:

A. Electronic Stability Control using yaw and steering input

B. Automatic Traction Control during acceleration

C. The air dryer purge circuit

D. The low-pressure warning device

17. A hydraulic pedal slowly sinks under steady pressure with no external leak and no air. The fix is to:

A. Replace the master cylinder for internal bypass

B. Bleed the system again

C. Replace the wheel bearings

D. Replace the air dryer cartridge

18. A shuttle's pedal is spongy and improves after pumping, with no external leaks. The correct action is to:

A. Replace the master cylinder

B. Adjust the wheel bearings

C. Bleed the hydraulic system

D. Replace the brake rotors

19. A shuttle's fluid is dark and moisture-laden, with a soft pedal on long downgrades that recovers when cool. This indicates:

A. An over-tight wheel bearing

B. A seized caliper guide pin

C. Fluid fade from moisture-contaminated fluid

D. A saturated air dryer

20. Engine oil was added to a hydraulic brake reservoir. The correct repair is to:

A. Bleed and top off with correct fluid

B. Replace affected rubber components and flush the system

C. Add a seal conditioner

D. Drive until the contamination clears

21. An air-over-hydraulic bus has weak braking. The actuator receives full air but hydraulic output is low. The fault is:

A. On the air supply side

B. In the governor

C. On the hydraulic side or actuator's hydraulic section

D. In the air dryer

22. A drive-axle wheel end runs very hot. The brake is not dragging and end play is minimal. The cause is most likely an:

A. Under-adjusted bearing with excess play

B. Contaminated lining

C. Saturated air dryer

D. Over-tight (preloaded) wheel bearing

23. A technician adjusts a wheel bearing and measures end play far above spec. The bearing is:

A. Preloaded too tight

B. Under-adjusted (too loose) and must be reset

C. The wrong chamber type

D. Correctly within spec

24. A growling wheel-end noise rises with road speed and changes when cornering, with no change on braking. This indicates a:

A. Worn wheel bearing

B. Glazed brake lining

C. Leaking foot valve exhaust

D. Saturated air dryer

25. During the pre-trip, drawing down pressure does not sound the warning at any point. The technician should suspect a:

A. Failed low-pressure warning device

B. Correctly purging air dryer

C. Properly adjusted wheel bearing

D. Glazed brake lining

26. A technician suspects a leak but isn't sure which half of the system. The best procedure is to:

A. Replace the foot valve

B. Perform timed pressure-drop tests with brakes released and applied

C. Replace the air dryer cartridge

D. Adjust the wheel bearings

27. Governor cut-out must be verified accurately before delivery. The technician should use a:

A. Dashboard air gauge alone

B. Feeler gauge at the chamber

C. Known-accurate test gauge on the reservoir

D. Dial indicator on the hub

28. A bus has weak braking with full air and no leaks. To find the fault, the technician walks the force-multiplication chain and checks:

A. The brake fluid moisture content

B. The ABS modulator wiring

C. Chamber size, slack adjuster length/adjustment, and pushrod stroke

D. The air dryer purge valve

29. A dragging brake has blued and heat-checked a drum and glazed the linings. The root issue is:

A. A correctly functioning air dryer

B. Continuous friction from the brake failing to release

C. An over-accurate test gauge

D. A properly adjusted slack adjuster

30. A bus loses the primary circuit due to a ruptured line. The driver reports it still slows with a longer stop and a warning light. This confirms:

A. The secondary circuit still provides braking

B. Total loss of all service braking

C. The parking brake is the only braking left

D. The ABS modulator is stopping the bus

31. A constant air leak is heard at the dryer exhaust after full charge while holding pressure. The cause is most likely a:

A. Worn compressor ring

B. Saturated supply reservoir

C. Purge valve stuck open

D. Failed wheel speed sensor

32. A bus's brakes apply and release too slowly at the far axle to meet timing requirements. The component designed to fix this is the:

A. Safety relief valve

B. Low-pressure warning device

C. Wheel speed sensor

D. Relay valve sourcing and venting air locally

33. An air disc brake shows uneven inboard/outboard pad wear and slight pull, with no slack adjuster present. The cause is a:

A. Mismatched slack adjuster

B. Saturated air dryer

C. Over-tight wheel bearing

D. Caliper seized on its guide pins, not floating

34. A modern air-braked bus arrives with the ABS lamp on. It must not be released with antilock inoperative beyond limits because these systems are:

A. Safety-critical and must be repaired

B. The compressor's control circuit

C. The spring brake's power source

D. The only braking on the bus

35. A bus pulls right on a hydraulic disc system; the right caliper piston is seized. The bus pulls right because the:

A. Right brake grips harder

B. Seized piston increases right braking

C. Working left brake applies force while the seized right does little

D. Pull is unrelated to the seized caliper

36. A rumble worsens loaded and in turns but is silent coasting straight and light. The source is most likely a:

A. Glazed lining

B. Leaking relay valve

C. Saturated air dryer

D. Worn wheel bearing under load

37. A bus is found with one brake chamber a different type than its axle mate. The technician should:

A. Replace it with the matching type to restore equal braking

B. Adjust the governor to compensate

C. Replace the air dryer cartridge

D. Increase the larger chamber's pressure

38. A technician confirms a brake is held applied by trapped air, not a mechanical bind. The first component to check is the:

A. Wheel bearing adjustment

B. Brake drum diameter

C. Relay or quick-release valve exhaust path

D. Lining coefficient of friction

39. A compressor never unloads and pressure climbs until the relief valve vents. The fault is in the:

A. Relief valve, which should be replaced

B. Brake chamber diaphragm

C. Wheel speed sensor circuit

D. Governor or compressor unloader

40. A technician explains why high-speed stops generate far more heat. The correct principle is that kinetic energy rises with the:

A. Cube of the vehicle's weight

B. Square of the speed

C. Square root of the speed

D. Governor cut-out pressure

41. A bus equipped with ABS faults and reverts to normal braking. A driver asks if it is unsafe to stop. The accurate answer is:

A. Yes, all braking is lost

B. Yes, only the parking brake works

C. No, because ABS doubled the pressure

D. No, full normal braking remains; only antilock is lost

42. A wet-tank drain releases significant water daily despite a good compressor. The cause is most likely a:

A. Glazed brake lining

B. Over-tight wheel bearing

C. Failed wheel speed sensor

D. Saturated or failing air dryer

43. A combination chamber loses spring-section air through a torn diaphragm. The expected symptom is:

A. Faster air dryer purging

B. A parking brake that drags or applies as air bleeds off

C. Higher governor cut-out

D. Reduced rotor runout

44. Brake pulsation felt rhythmically with wheel rotation on an air disc brake should first prompt measuring:

A. Pushrod stroke

B. Governor cut-out pressure

C. Rotor runout and thickness variation

D. Brake fluid moisture content

45. After a brake job, clearing ABS codes and confirming the self-test passes with a normal lamp is important because it:

A. Raises the governor cut-out

B. Repacks the wheel bearings

C. Increases reservoir capacity

D. Verifies the repair corrected the fault and the system is functional

46. A technician about to service a foundation brake with a spring chamber must FIRST:

A. Retrieve the ABS trouble codes

B. Secure the vehicle, chock the wheels, and prepare to cage

C. Measure the rotor runout

D. Drain the brake fluid reservoir

47. A bus drags brakes at all wheels and chambers exhaust slowly on release. The most likely shared cause is the:

A. A single seized slack adjuster

B. One contaminated lining

C. A worn wheel bearing

D. Foot valve not exhausting properly

48. Oil-fouled desiccant must have which corrected before the cartridge is replaced?

A. The compressor or its oil-feed source

B. The governor cut-in setting

C. The wheel bearing end play

D. The ABS modulator wiring

49. A governor verified at 145 psi cut-out against a 125 psi spec should prompt the technician to:

A. Adjust or replace the governor to correct cut-out

B. Replace the safety relief valve

C. Replace the air dryer cartridge

D. Adjust the wheel bearings

50. A bus with adequate pressure drags its brakes at all wheels; the knob is in and a shared spring-circuit valve is restricted. The cause is a:

A. Single wheel's seized foundation brake

B. Glazed lining on one wheel

C. Restriction in the shared spring-brake supply

D. Worn wheel bearing

51. A drum's inside diameter exceeds the stamped maximum. The correct action is to:

A. Machine it oversize and reuse it

B. Continue using it until linings wear

C. Reverse it and reuse the other side

D. Replace the drum

52. A bus builds slowly with good compressor output, no leaks, and a dryer that never "pops." The cause is most likely a:

A. Worn brake drum

B. Restricted air dryer or failed purge

C. Glazed brake lining

D. Failed wheel speed sensor

53. A failed wheel seal is a two-fold failure because it:

A. Raises cut-out and lowers cut-in

B. Speeds purging and increases capacity

C. Contaminates the brake and starves the bearing

D. Cages the spring and applies the parking brake

54. A bus loses pressure rapidly only when the brakes are applied and held. Technician A says check the supply reservoir. Technician B says check the chamber diaphragms and relay delivery seals. Who is correct?

A. Technician A only

B. Technician B only

C. Both technicians

D. Neither technician

55. A wheel bearing adjusted too loose will exhibit:

A. Rapid overheating from preload

B. Constant air dryer purging

C. A higher governor cut-out

D. Excessive end play and a wandering brake

56. A bus reaches cut-out, purges, holds pressure, brakes evenly, and passes both leak tests. The technician concludes the:

A. Air supply, dryer, and service systems are functioning properly

B. Wheel bearings are over-tight

C. Linings are glazed

D. ABS modulator has failed

57. A foot valve leaks at its exhaust port only when the brakes are released. This points to a fault in the:

A. Application side of the valve

B. Relay valve delivery seal

C. Inlet/seat seal on the supply side

D. Spring brake circuit

58. The spring brake's reversed logic means that any loss of system air will:

A. Release the parking brake fully

B. Have no effect on the parking brake

C. Convert it to hydraulic operation

D. Apply the parking/emergency brake automatically

59. A bus with a Type 24 chamber on one side and a Type 30 on the other will:

A. Pull during braking from unequal force

B. Build air more slowly

C. Purge the dryer continuously

D. Overheat the wheel bearings

60. A technician completes the H4-relevant service, documents each reading against its limit, corrects every out-of-limit condition, and clears the codes. This continuous discipline reflects the principle that brake maintenance is:

A. Best done by feel without measurements

B. Complete after a single visual check

C. Inspect, measure, compare to limits, correct, and record

D. Unnecessary once the bus passes once

## Answer Key & Full Answer Explanations

1. A — With good compressor output, a good governor, and a clean inlet filter, slow build and no purge point to a restricted air dryer or stuck purge valve. A chamber, bearing, or lining would not affect air build.

2. B — Technician B is correct: the relief valve venting at 150 psi protects against over-pressure caused by a governor or unloader fault. Technician A is wrong; replacing the relief valve ignores the real cause.

3. D — Failing the applied test but passing static isolates the leak to application-side components — the brake chamber diaphragm or relay valve delivery seal. Supply fittings, the governor signal line, and the intake filter are not the suspects.

4. C — A late rear application on a long bus calls for inspecting the rear relay valve and its control signal line, which speed far-axle response. The relief valve, warning device, and sensor do not affect timing.

5. D — An oil-soaked right lining from a leaking wheel seal causes the pull, so the root cause to correct is the failed wheel seal. The chamber type, governor, and slack adjuster are not the source here.

6. A — In-spec thickness with weak, shiny, hard linings indicates glazing reducing the friction coefficient. A below-minimum drum, over-tight bearing, or saturated dryer would not produce this.

7. B — Technician B is correct: excessive stroke on an automatic slack adjuster is a symptom to diagnose. Technician A is wrong; manually back-adjusting an ASA masks the fault and can damage it.

8. D — At 35 psi the cause is low pressure, so the first action is to restore adequate system pressure and recheck. Replacing the chamber or valve, or caging, skips the likeliest and safest check.

9. C — A seized, corroded spring chamber is replaced as a complete sealed unit because the spring stores lethal energy. Heating, disassembling, or prying it open can release the spring fatally.

10. B — Anti-compounding via a double check valve prevents the spring and service forces from stacking during the test. The warning device, purge cycle, and sensor have no such role.

11. B — A parking knob popping out at idle indicates a system air leak dropping pressure to the auto-apply point. A lining, rotor, or sensor fault is unrelated.

12. A — A parking brake that drags with adequate pressure and a free foundation brake points to a leak or restriction in the spring-brake circuit. A dryer, lining, or bearing is unrelated.

13. A — An ABS fault appearing only over rough pavement and clearing on smooth roads points to a loose or corroded connector or chafed wiring disturbed by vibration. A dryer, lining, or drum would not cause an intermittent electronic fault.

14. B — With a good sensor but an excessive air gap, the fix is to set the sensor air gap to specification. Replacing the good sensor or clearing the code without correction would not fix the gap.

15. B — Drive-wheel grip loss pulling away is addressed by ATC braking the spinning wheel and/or cutting engine torque. ABS, ESC, and the protection valve do not address drive-wheel spin.

16. A — Skidding off the intended path corrected by selective braking is Electronic Stability Control using yaw and steering input. ATC addresses acceleration, not directional stability.

17. A — A pedal that slowly sinks under steady pressure with no external leak and no air is internal master-cylinder bypass, requiring replacement. Bleeding cannot fix internal seal bypass.

18. C — A spongy pedal that improves after pumping indicates trapped air, corrected by bleeding the hydraulic system. A master cylinder, bearing, or rotor fault would not firm up with pumping.

19. C — Dark, moisture-laden fluid with a soft pedal on downgrades that recovers when cool is fluid fade from moisture-contaminated fluid. A bearing, guide pin, or dryer is unrelated.

20. B — Engine oil in a brake reservoir is petroleum contamination, so affected rubber components must be replaced and the system flushed. Bleeding, conditioner, or driving cannot reverse it.

21. C — Full air to the actuator but low hydraulic output places the fault on the hydraulic side or the actuator's hydraulic section. The air side, governor, and dryer are not implicated.

22. D — A hot wheel end with no dragging brake and minimal end play indicates an over-tight (preloaded) bearing. A loose bearing would show excessive play, and a lining or dryer is unrelated.

23. B — End play far above spec means the bearing is under-adjusted (too loose) and must be reset to the specified small end play. Excessive play hammers the bearing and damages the seal.

24. A — A growl that rises with road speed and changes when cornering, unaffected by braking, is a worn wheel bearing. Brake noise changes with application; a foot valve leak or dryer would not produce this.

25. A — If the warning never sounds during draw-down, the low-pressure warning device has failed. A purging dryer, adjusted bearing, or lining would not affect the warning.

26. B — To localize a leak, the technician performs timed pressure-drop tests with the brakes released and applied, since each isolates a different half of the system. Replacing components blindly is not diagnosis.

27. C — Governor cut-out must be verified with a known-accurate test gauge on the reservoir, because the dashboard gauge is not accurate enough for specifications. A feeler gauge or dial indicator measures other things.

28. C — Weak braking with full air and no leaks means a break in the mechanical force-multiplication chain, so the technician checks chamber size, slack adjuster length/adjustment, and pushrod stroke. Fluid moisture, ABS wiring, and the dryer are unrelated.

29. B — A blued, heat-checked drum with glazed linings results from continuous friction because the brake fails to release (dragging). A healthy dryer, accurate gauge, or correct slack adjuster would not cause this.

30. A — Reduced but present braking with a longer stop and a warning light after losing the primary circuit confirms the secondary circuit still provides braking. It is not total loss or parking-brake-only.

31. C — A constant leak at the dryer exhaust after full charge while holding pressure indicates a purge valve stuck open. A worn ring, saturated tank, or failed sensor would not produce a steady exhaust leak.

32. D — The relay valve sources and vents air locally at the far axle so the brakes apply and release fast enough to meet timing. The relief valve, warning device, and sensor do not affect timing.

33. D — Uneven pad wear and pull with no slack adjuster present point to a caliper seized on its guide pins and not floating. There is no slack adjuster on a disc brake, and a dryer or bearing is unrelated.

34. A — A bus cannot be released with antilock inoperative beyond limits because these systems are safety-critical and must be repaired. They are not the compressor's circuit, the spring brake's power source, or the only braking.

35. C — A seized right caliper means the right brake does little, so the working left brake's force pulls the bus toward the right. Pull always reflects unequal force, never increased braking on the seized side.

36. D — A rumble that worsens loaded and in turns but is silent coasting light is a worn wheel bearing under load. A lining, relay valve, or dryer would not behave this way.

37. A — A mismatched chamber must be replaced with the matching type to restore equal braking force and prevent pull. Adjusting the governor, replacing the dryer, or raising pressure does not fix the mismatch.

38. C — When a brake is held applied by trapped air rather than a mechanical bind, the first component to check is the relay or quick-release valve exhaust path. Bearing, drum, and lining are not air-release components.

39. D — A compressor that never unloads until the relief valve vents has a fault in the governor or compressor unloader, not the relief valve. The diaphragm and sensor are unrelated.

40. B — High-speed stops generate far more heat because kinetic energy rises with the square of the speed, so doubling speed quadruples the energy. It is not the cube of weight, square root of speed, or cut-out.

41. D — When ABS faults it reverts to normal braking, so full normal braking remains and only the antilock function is lost. The bus is not unsafe to stop, and ABS does not double pressure.

42. D — Recurring daily water in the wet tank despite a good compressor points to a saturated or failing air dryer no longer removing moisture. A lining, bearing, or sensor fault is unrelated.

43. B — A torn spring-section diaphragm cannot hold the air that keeps the spring released, so the parking brake drags or applies as air bleeds off. It does not affect purge timing, cut-out, or rotor runout.

44. C — Pulsation felt rhythmically with wheel rotation on an air disc brake should first prompt measuring rotor runout and thickness variation. It is not a stroke, governor, or fluid issue.

45. D — Clearing codes and confirming the self-test passes with a normal lamp verifies the repair corrected the fault and the system is functional. It does not raise cut-out, repack bearings, or add reservoir capacity.

46. B — Safety comes before service, so the first action is to secure the vehicle, chock the wheels, and prepare to cage. Pulling codes, measuring runout, or draining fluid do not neutralize the stored energy.

47. D — Dragging at all wheels with slow chamber exhaust on release points to the foot valve not exhausting properly. A single seized slack adjuster, one contaminated lining, or one worn bearing would affect only one wheel.

48. A — Oil-fouled desiccant requires correcting the compressor or its oil-feed source first, or the new cartridge will foul again. The governor, bearings, and ABS wiring are unrelated to oil contamination.

49. A — A cut-out reading 145 psi against a 125 psi spec means the governor is out of adjustment and must be adjusted or replaced. Replacing the relief valve, dryer cartridge, or adjusting bearings does not fix the governor.

50. C — Dragging at all wheels with the knob in and a restricted shared spring-circuit valve points to a restriction in the shared spring-brake supply. A single wheel's bind, one glazed lining, or a bearing would not affect all wheels.

51. D — A drum exceeding its stamped maximum diameter must be replaced because it is too thin to handle braking heat. Machining oversize, continuing use, or reversing it are unsafe.

52. B — Slow build with good compressor output, no leaks, and a dryer that never "pops" points to a restricted air dryer or failed purge. A worn drum, glazed lining, or failed sensor would not affect build.

53. C — A failed wheel seal is two-fold because it contaminates the brake friction surface and starves the bearing of lubricant. It does not change cut-out/cut-in, speed purging, or cage the spring.

54. B — Technician B is correct: rapid loss only when applied and held is an application-side leak, so the chamber diaphragms and relay delivery seals are the suspects. Technician A is wrong because the supply reservoir leaks with the brakes released.

55. D — A bearing adjusted too loose exhibits excessive end play and a wandering brake. Rapid overheating comes from preload, not looseness, and the dryer/cut-out are unrelated.

56. A — Reaching cut-out, purging, holding pressure, braking evenly, and passing both leak tests means the air supply, dryer, and service systems are functioning properly. It does not indicate over-tight bearings, glazed linings, or a failed modulator.

57. C — A foot valve leaking at the exhaust port only when released points to the inlet/seat seal on the supply side, pressurized at rest. An applied leak would implicate the application side; the relay valve and spring circuit are not involved.

58. D — The spring brake's reversed logic means any loss of system air applies the parking/emergency brake automatically. It does not release the brake, have no effect, or convert to hydraulic.

59. A — A Type 24 on one side and a Type 30 on the other produce unequal pushrod force at the same pressure, so the bus pulls during braking. It does not slow air build, purge continuously, or overheat bearings.

60. C — The continuous discipline of brake maintenance is to inspect, measure, compare to limits, correct, and record. It is not done by feel, completed after one visual check, or unnecessary after passing once.