

PRACTICE EXAM 16

1. A transit bus builds air slowly. All of these statements are true, but which is the BEST first diagnostic action?

- A. Check for leaks and verify governor and dryer function before condemning the compressor
- B. The compressor is engine-driven and spins continuously
- C. The air dryer removes moisture from the air
- D. The governor controls compressor cut-in and cut-out

2. A compressor keeps building past cut-out until the relief valve vents. Which statement, though true, identifies the actual fault to pursue?

- A. The relief valve protects against over-pressure
- B. The air dryer purges at cut-out
- C. The governor or unloader is failing to unload the compressor
- D. The reservoirs store compressed air

3. A bus loses pressure only when the brakes are applied and held. Which true statement points to the correct leak location?

- A. The supply reservoir stores air for braking
- B. The leak is on the application side, such as chamber diaphragms
- C. The air dryer removes oil aerosols
- D. The governor sets the cut-out pressure

4. A long bus applies its rear brakes a beat late. Which component, correctly, is intended to prevent this?

- A. The rear relay valve and its control signal line
- B. The safety relief valve that vents over-pressure
- C. The low-pressure warning device
- D. The wheel speed sensor that reads the tone ring

5. A bus pulls right when braking with a longer right slack adjuster and a dry, in-spec right lining. The correct cause is:

- A. Mismatched slack adjusters producing unequal force
- B. The treadle valve meters air to both circuits
- C. The air dryer regenerates its desiccant
- D. The governor cuts out at a set pressure

6. A drum brake has weak braking with in-spec thickness and shiny, hard linings. Which true statement explains the weakness?

- A. Linings are attached by rivets or bonding
- B. Drums are measured against a maximum diameter
- C. The linings are glazed, lowering the friction coefficient
- D. The S-cam spreads the shoes apart

7. A wheel with an automatic slack adjuster shows excessive stroke. Which statement gives the correct action?

- A. Diagnose the cause rather than manually back-adjusting
- B. Automatic slack adjusters self-adjust for wear
- C. Pushrod stroke is measured at full application
- D. The chamber type determines the stroke limit

8. A parking brake won't release with the knob in and pressure at 35 psi. Which true statement identifies the cause?

- A. The spring brake is held released by air
- B. System pressure is too low to hold the springs released
- C. Caging holds the power spring released
- D. The dash knob auto-applies at low pressure

9. A seized, corroded spring chamber must be handled how, despite all these being true statements?

- A. Replaced as a complete sealed unit
- B. The power spring stores lethal energy
- C. Caging uses the proper caging bolt
- D. The spring section is held released by air

10. During an ABS event the modulator acts. Which statement, correctly, names what it does?

- A. The wheel speed sensor reads a tone ring
- B. ABS reverts to normal braking on a fault
- C. It reduces, holds, and reapplies brake pressure
- D. The ECU stores diagnostic trouble codes

11. A wheel speed sensor code is stored. Which is the correct FIRST action among these true statements?

- A. Check the air gap, tone ring, and wiring before replacing the sensor
- B. A code indicates the circuit area, not always the part
- C. The sensor reads a rotating tone ring
- D. ABS reverts to normal braking on a fault

12. A hydraulic pedal slowly sinks under steady pressure with no external leak. Which true statement gives the fix?

- A. Brake fluid is hygroscopic
- B. Bleeding removes trapped air
- C. Air in the lines makes the pedal spongy
- D. The master cylinder is bypassing internally and must be replaced

13. A drive wheel spins on ice pulling away. Which system intervenes, correctly?

- A. ABS prevents wheel lockup during braking
- B. ESC uses yaw and steering sensors
- C. ATC brakes the spinning wheel and/or cuts engine torque
- D. The pressure protection valve guards accessory air

14. A wheel end runs hot with minimal end play and no dragging brake. Which true statement identifies the cause?

- A. End play is verified with a dial indicator
- B. Bearings are lubricated by grease or oil
- C. The bearing is over-tight (preloaded) and overheating
- D. Tapered roller bearings carry radial and thrust loads

15. A growling wheel-end noise rises with road speed and changes when cornering. Which statement, correctly, names the fault?

- A. Brake noise changes with application
- B. A worn wheel bearing produces this noise
- C. The air dryer removes moisture

D. The governor controls the compressor

16. Engine oil was added to a hydraulic brake reservoir. Which true statement gives the correct repair?

A. Brake fluid is hygroscopic

B. Bleeding removes trapped air

C. The master cylinder feeds two circuits

D. Affected rubber components must be replaced and the system flushed

17. A bus loses the primary circuit due to a ruptured line. Which true statement describes the result?

A. The treadle valve has two sections

B. The dual-circuit system splits front and rear

C. The intact secondary circuit still provides braking

D. FMVSS 121 requires dual circuits

18. A relay valve won't exhaust on release. Which true statement identifies the symptom?

A. The relay valve uses a fast control signal

B. It draws air from a large supply line

C. It is mounted near the far chambers

D. The served brakes drag because air is trapped

19. A constant leak is heard at the dryer exhaust after full charge. Which true statement names the fault?

A. The dryer purges at cut-out

B. The desiccant adsorbs moisture

C. The purge regenerates the desiccant

D. The purge valve is stuck open

20. A bus's accessories cut out as pressure drops while braking stays normal. Which true statement explains this?

A. The pressure protection valve is preserving brake air

B. The compressor is engine-driven

C. The governor sets cut-out

D. The reservoirs store air

21. Brake pulsation is felt rhythmically with wheel rotation on an air disc brake. Which true statement gives the first measurement?

A. The rotor is squeezed between two pads

B. The caliper floats on guide pins

C. Measure rotor runout and thickness variation first

D. There is no slack adjuster on a disc brake

22. A failed wheel seal causes which two-fold problem, among these true statements?

A. It contaminates the brake and starves the bearing

B. The seal is at the inboard side of the hub

C. Seals are replaced when the hub is disturbed

D. The hub carries the bearing races

23. A safety relief valve vents at 150 psi. Which is the correct response among these true statements?

A. Diagnose the governor or unloader over-pressure cause

B. The relief valve protects the system

- C. Cut-out is normally 120 to 135 psi
- D. The relief valve is on the supply reservoir

24. A spring chamber must never be subjected to which action, though all are statements about chambers?

- A. Caging with the proper bolt
- B. Inspection for external leaks
- C. Disassembly or torching
- D. Replacement as a sealed unit

25. Excessive pushrod stroke is significant because, correctly:

- A. The chamber type sets the stroke limit
- B. Stroke is measured at full application
- C. Larger chambers have larger limits
- D. It is a primary out-of-service brake defect

26. A bus pulls toward the working side when one caliper seizes. Which true statement explains the direction?

- A. Pull reflects unequal braking force
- B. A seized caliper applies only one pad
- C. The working side brakes while the seized side does little
- D. Calipers float on guide pins

27. A leakage test must be done released and applied because, correctly:

- A. The released test checks supply-side leaks

- B. Each condition isolates a different half of the system
- C. The applied test checks application-side leaks
- D. Both tests use a timed pressure drop

28. The first action before servicing a spring-chamber-equipped brake is, correctly:

- A. Spring chambers store lethal energy
- B. Secure the vehicle, chock the wheels, and prepare to cage
- C. Caging uses the proper bolt
- D. Air drains must reach zero before opening fittings

29. A governor cut-out reads 148 psi against a 125 psi spec. Which true statement gives the correct action?

- A. Adjust or replace the governor to correct cut-out
- B. Cut-out is the unload pressure
- C. The relief valve vents near 150 psi
- D. The dash gauge is not accurate enough for specs

30. A bus builds slowly with good compressor output, no leaks, and a dryer that never "pops." Which true statement names the fault?

- A. The air dryer is restricted or its purge has failed
- B. The compressor creates the system's air
- C. The governor controls loading
- D. Reservoirs store the air

31. Air-over-hydraulic weak braking with full air to the actuator but low hydraulic output points to, correctly:

- A. The air supply side
- B. The hydraulic side or actuator's hydraulic section
- C. The governor
- D. The air dryer

32. A dragging brake has blued the drum and glazed the linings. Which true statement names the root issue?

- A. Glazing lowers the friction coefficient
- B. Continuous friction from failure to release generates the heat
- C. Drums are measured against a maximum diameter
- D. Heat checking is fine surface cracking

33. Why must brake chambers on the same axle match, correctly?

- A. The chamber type sets the diaphragm area
- B. Pushrod force equals pressure times area
- C. To produce equal force and prevent pull
- D. Chambers convert air to mechanical force

34. A parking brake popped out by itself at idle. Which true statement gives the first check?

- A. The knob auto-applies at low pressure
- B. The spring brake applies on air loss
- C. Spring chambers store lethal energy
- D. Check for an air leak dropping system pressure

35. A bus on an air disc brake shows uneven pad wear and pull, no slack adjuster present. Which true statement names the cause?

- A. The caliper is seized and not floating on its guide pins
- B. Disc brakes use an internal automatic adjuster
- C. Rotors are measured for runout
- D. Pads clamp both faces of the rotor

36. The spring brake's reversed logic means, correctly:

- A. The service section is air-applied
- B. The foot valve meters air to circuits
- C. Air holds the spring released; loss of air applies it
- D. The compressor builds the system air

37. A wheel seal failure on a brake produces pull because, correctly:

- A. Seals retain bearing lubricant
- B. Seals are at the inboard side
- C. Lubricant escapes when the seal fails
- D. The contaminated lining brakes less than its clean mate

38. A bus with brakes out of adjustment (excessive stroke) is hazardous because, correctly:

- A. Stroke is measured at full application
- B. The chamber type sets the limit
- C. Automatic slack adjusters self-adjust
- D. It has degraded, uneven braking and reduced reserve

39. During the pre-trip, the warning never sounds during draw-down. Which true statement gives the conclusion?

- A. The warning should sound near 60 psi
- B. The low-pressure warning device has failed
- C. Spring brakes auto-apply at a lower threshold
- D. The pre-trip checks build-up first

40. A relay valve sticking closed on apply causes, correctly:

- A. The relay valve speeds release
- B. Slow or weak application at the far chambers
- C. The relay valve exhausts locally
- D. It uses a fast control signal

41. Petroleum contamination of brake fluid requires which action, correctly?

- A. Brake fluid is hygroscopic
- B. Bleeding removes air
- C. Replace affected components and flush the system
- D. The master cylinder feeds two circuits

42. An intermittent ABS lamp over bumps that clears on smooth roads points to, correctly:

- A. A loose or corroded sensor connector or chafed wiring
- B. The sensor reads a tone ring
- C. ABS reverts to normal braking on a fault
- D. A code indicates a circuit area

43. Wheel bearings are adjusted to a small end play rather than preloaded because, correctly:

- A. End play is measured with a dial indicator
- B. To allow for lubrication and thermal expansion
- C. Bearings are tapered roller types
- D. Preload causes zero end play

44. A bus loses pressure overnight with the brakes released. Which true statement names the leak type?

- A. The dryer removes moisture
- B. It is a static supply-side leak
- C. The reservoirs store air
- D. The compressor builds air

45. ESC differs from basic ABS because, correctly:

- A. ABS prevents lockup
- B. ATC prevents drive-wheel spin
- C. Both use wheel speed sensors
- D. ESC adds steering angle, yaw rate, and lateral acceleration sensors

46. A drum exceeding maximum diameter must be, correctly:

- A. Drums are measured against a limit
- B. The limit is stamped on the drum
- C. Replaced because it is too thin for heat
- D. Heat checking indicates overheating

47. Bleeding a hydraulic system is required after opening it because, correctly:

- A. Fluid is incompressible
- B. Air is compressible
- C. The reservoir must stay topped
- D. Opening the system lets air in, which must be removed

48. A combination chamber's service section is applied by, correctly:

- A. The spring section is held released by air
- B. Caging holds the spring released
- C. Pulling the knob applies the parking brake
- D. Air pressure delivered from the foot valve

49. A bus must have ABS on its air system because, correctly:

- A. FMVSS 121 requires it on air-braked vehicles
- B. ABS prevents lockup
- C. ABS uses wheel speed sensors
- D. ABS reverts to normal braking on a fault

50. A compressor never unloads and over-pressurizes the system. Which true statement names the fault location?

- A. The relief valve protects against over-pressure
- B. The compressor has no built-in shut-off
- C. The governor controls unloading
- D. The governor or unloader is faulty

51. A bus drags brakes at all wheels with chambers slow to exhaust. Which true statement names the shared cause?

- A. A single slack adjuster can seize
- B. One lining can be contaminated
- C. A relay valve exhausts locally
- D. The foot valve is not exhausting properly

52. Oil-fouled desiccant requires which action first, correctly?

- A. The desiccant adsorbs moisture
- B. Correct the compressor or oil-feed source first
- C. The dryer purges at cut-out
- D. Cartridges are scheduled replacements

53. A bus pulls toward the side with the working brake when one caliper piston seizes. Which true statement explains why?

- A. Calipers float on guide pins
- B. The seized side does little braking while the working side applies force
- C. Disc brakes use no slack adjuster
- D. Pull reflects unequal force

54. Clearing ABS codes and confirming the self-test passes after a repair, correctly:

- A. Verifies the repair corrected the fault and the system is functional
- B. The lamp warns of a fault
- C. A code indicates a circuit area
- D. The ECU monitors the system

55. A wheel end overheats and a brake is found dragging there. The correct first step is, among these true statements:

- A. Dragging brakes generate heat
- B. Bearings can overheat from preload
- C. Determine whether the heat is from the brake or the bearing
- D. Wheel seals retain lubricant

56. A foot valve leaks at its exhaust port only when applied. Which true statement names the fault location?

- A. Released leaks point to the supply side
- B. The fault is on the application side of the valve
- C. The treadle valve meters air
- D. It controls two circuits

57. Kinetic energy a brake absorbs rises with the square of speed, which means, correctly:

- A. Energy rises in proportion to weight
- B. A bus at 40 mph carries four times the energy it has at 20 mph
- C. Heat must dissipate into the air
- D. Fade is a high-speed phenomenon

58. A combination chamber loses spring-section air through a torn diaphragm. Which true statement names the symptom?

- A. The spring section is held released by air
- B. Air holds the power spring back
- C. Loss of air applies the spring brake
- D. The parking brake drags or applies as air bleeds off

59. Governor cut-out must be verified with which tool, correctly?

- A. The dash gauge reads system pressure
- B. Cut-out is the unload pressure
- C. A dial indicator measures end play
- D. A known-accurate test gauge on the reservoir

60. A bus reaches cut-out, purges, holds pressure, brakes evenly, and passes both leak tests. Which true statement gives the conclusion?

- A. The dryer purges at cut-out
- B. The reservoirs store air
- C. The air supply, dryer, and service systems are functioning properly
- D. The compressor builds the air

Answer Key & Full Answer Explanations

1. A — The best first action for slow build is to check for leaks and verify governor and dryer function before condemning the compressor. The other statements are true facts but do not direct the diagnosis; systematic isolation does.

2. C — The actual fault to pursue is the governor or unloader failing to unload the compressor. The relief valve venting, dryer purge, and reservoir storage are true but do not identify the over-pressure cause.

3. B — Loss only when applied and held means the leak is on the application side, such as chamber diaphragms. The supply reservoir, dryer, and governor statements are true but unrelated to an applied-only leak.

4. A — The rear relay valve and its control signal line are intended to prevent a late rear application by sourcing and venting air locally. The relief valve, warning device, and sensor are true components but do not govern application timing.

5. A — A longer right slack adjuster with a dry, in-spec lining produces unequal force, causing the right pull. The treadle, dryer, and governor statements are true but do not explain the side-to-side imbalance.

6. C — Weak braking with in-spec thickness and shiny, hard linings is explained by glazing, which lowers the friction coefficient. The other statements are true but do not account for the lost friction.

7. A — The correct action for excessive stroke on an automatic slack adjuster is to diagnose the cause rather than manually back-adjusting. The other statements are true but do not give the action.

8. B — At 35 psi the cause is that system pressure is too low to hold the springs released, so the parking brake stays applied. The other statements are true facts but do not identify why it won't release.

9. A — A seized, corroded spring chamber must be replaced as a complete sealed unit because the spring stores lethal energy. The other statements are true but do not give the required handling.

10. C — During an ABS event the modulator reduces, holds, and reapplies brake pressure. The sensor, fault reversion, and code storage statements are true but do not name the modulator's action.

11. A — The correct first action for a sensor code is to check the air gap, tone ring, and wiring before replacing the sensor. The other statements are true but do not give the first step.

12. D — A pedal that slowly sinks under steady pressure with no external leak means the master cylinder is bypassing internally and must be replaced. The hygroscopic, bleeding, and spongy-pedal statements are true but do not give the fix.

13. C — A spinning drive wheel on ice is addressed by ATC, which brakes the spinning wheel and/or cuts engine torque. ABS, ESC, and the protection valve statements are true but do not address drive-wheel spin.

14. C — A hot wheel end with minimal end play and no dragging brake is caused by an over-tight (preloaded) bearing overheating. The dial-indicator, lubrication, and load statements are true but do not name the cause.

15. B — A growl that rises with road speed and changes when cornering is produced by a worn wheel bearing. The brake-noise, dryer, and governor statements are true but do not name this fault.

16. D — Engine oil in a brake reservoir is petroleum contamination, so affected rubber components must be replaced and the system flushed. The hygroscopic, bleeding, and master-cylinder statements are true but do not give the repair.

17. C — Losing the primary circuit leaves the intact secondary circuit still providing braking. The treadle-section, front/rear split, and FMVSS 121 statements are true but do not describe the result.

18. D — A relay valve that won't exhaust traps air, so the served brakes drag. The fast-signal, supply-line, and mounting statements are true but do not name the symptom.

19. D — A constant leak at the dryer exhaust after full charge means the purge valve is stuck open. The cut-out purge, desiccant, and regeneration statements are true but do not name the fault.

20. A — Accessories cutting out as pressure drops while braking stays normal is the pressure protection valve preserving brake air. The compressor, governor, and reservoir statements are true but do not explain the behavior.

21. C — Pulsation felt rhythmically with wheel rotation on an air disc brake calls first for measuring rotor runout and thickness variation. The squeeze, float, and no-slack-adjuster statements are true but do not give the first measurement.

22. A — A failed wheel seal is two-fold because it contaminates the brake and starves the bearing. The location and replacement statements are true but do not name the two-fold problem.

23. A — The correct response to a relief valve venting at 150 psi is to diagnose the governor or unloader over-pressure cause. The protection, cut-out range, and location statements are true but do not give the response.

24. C — A spring chamber must never be disassembled or torched because the spring stores lethal energy. Caging, inspection, and replacement are acceptable, so disassembly/torching is the prohibited action.

25. D — Excessive pushrod stroke is significant because it is a primary out-of-service brake defect. The chamber-type, measurement, and larger-limit statements are true but do not state the significance.

26. C — When one caliper seizes, the working side brakes while the seized side does little, pulling the bus toward the working side. The unequal-force, one-pad, and float statements are true but do not explain the direction.

27. B — Both tests are done because each condition isolates a different half of the system. The supply-side, application-side, and timed-drop statements are true but the isolation principle is the reason.

28. B — The first action before servicing a spring-chamber brake is to secure the vehicle, chock the wheels, and prepare to cage. The lethal-energy, caging-bolt, and drain statements are true but do not give the first step.

29. A — A cut-out reading 148 psi against a 125 psi spec requires adjusting or replacing the governor. The unload, relief, and dash-gauge statements are true but do not give the action.

30. A — Slow build with good compressor output, no leaks, and a dryer that never "pops" means the air dryer is restricted or its purge has failed. The compressor, governor, and reservoir statements are true but do not name the fault.

31. B — 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 options are not implicated.

32. B — A blued drum and glazed linings result from continuous friction because the brake fails to release. The glazing, diameter, and heat-checking statements are true but do not name the root issue.

33. C — Chambers on the same axle must match to produce equal force and prevent pull. The type, force-equation, and conversion statements are true but the equal-force/pull rationale is the reason.

34. D — A parking brake popping out at idle calls first for checking an air leak dropping system pressure. The auto-apply, air-loss, and lethal-energy statements are true but do not give the first check.

35. A — Uneven pad wear and pull with no slack adjuster mean the caliper is seized and not floating on its guide pins. The internal-adjuster, runout, and clamp statements are true but do not name the cause.
36. C — The spring brake's reversed logic is that air holds the spring released and loss of air applies it. The service-section, foot-valve, and compressor statements are true but do not describe the reversed logic.
37. D — A wheel seal failure produces pull because the contaminated lining brakes less than its clean mate. The retain, location, and escape statements are true but the less-braking/pull point is the reason.
38. D — A bus with excessive stroke is hazardous because it has degraded, uneven braking and reduced reserve. The measurement, type-limit, and self-adjust statements are true but do not state the hazard.
39. B — If the warning never sounds during draw-down, the low-pressure warning device has failed. The 60 psi, auto-apply, and build-up statements are true but the conclusion is the failed device.
40. B — A relay valve sticking closed on apply causes slow or weak application at the far chambers. The speed-release, local-exhaust, and fast-signal statements are true but do not name this symptom.
41. C — Petroleum contamination requires replacing affected components and flushing the system. The hygroscopic, bleeding, and master-cylinder statements are true but do not give the action.
42. A — An ABS lamp flickering over bumps and clearing on smooth roads points to a loose or corroded connector or chafed wiring. The tone-ring, fault-reversion, and circuit-area statements are true but do not name the cause.
43. B — Bearings are set to a small end play to allow for lubrication and thermal expansion. The measurement, type, and preload statements are true but the clearance rationale is the reason.
44. B — Losing pressure overnight with the brakes released is a static supply-side leak. The dryer, reservoir, and compressor statements are true but do not name the leak type.

45. D — ESC differs from basic ABS by adding steering angle, yaw rate, and lateral acceleration sensors. The lockup, spin, and shared-sensor statements are true but the added sensors are the difference.

46. C — A drum exceeding maximum diameter must be replaced because it is too thin for heat. The measurement, stamped-limit, and heat-checking statements are true but do not give the action.

47. D — Bleeding is required after opening because opening the system lets air in, which must be removed. The incompressible, compressible, and topped-reservoir statements are true but the air-entry reason is correct.

48. D — The service section is applied by air pressure delivered from the foot valve. The spring-section, caging, and knob statements are true but describe parking-brake behavior, not service application.

49. A — A bus must have ABS on its air system because FMVSS 121 requires it. The lockup, sensor, and fault-reversion statements are true but the regulation is the reason.

50. D — A compressor that never unloads and over-pressurizes the system has a faulty governor or unloader. The relief, no-shut-off, and control statements are true but the fault location is the governor/unloader.

51. D — Dragging at all wheels with slow chamber exhaust means the foot valve is not exhausting properly. A single slack adjuster, one lining, and local relay exhaust would not affect all wheels.

52. B — Oil-fouled desiccant requires correcting the compressor or oil-feed source first. The adsorb, purge, and scheduled-replacement statements are true but the source correction comes first.

53. B — A seized caliper piston means the seized side does little braking while the working side applies force, pulling toward the working side. The float, no-slack-adjuster, and unequal-force statements are true but do not explain the direction.

54. A — Clearing codes and confirming the self-test passes verifies the repair corrected the fault and the system is functional. The lamp, code-area, and ECU statements are true but do not state the verification purpose.

55. C — When a wheel end is hot and a brake is dragging, the correct first step is to determine whether the heat is from the brake or the bearing. The dragging-heat, preload, and seal statements are true but do not give the first step.

56. B — A foot valve leaking at the exhaust port only when applied means the fault is on the application side of the valve. The released-leak, metering, and two-circuit statements are true but do not name the location.

57. B — Because energy rises with the square of speed, a bus at 40 mph carries four times the energy it has at 20 mph. The weight-proportion, dissipation, and fade statements are true but do not state the four-times relationship.

58. D — 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. The held-released, holds-back, and air-loss statements are true but do not name the symptom.

59. D — Governor cut-out must be verified with a known-accurate test gauge on the reservoir. The dash-gauge, unload, and dial-indicator statements are true but do not name the correct tool.

60. C — Reaching cut-out, purging, holding pressure, braking evenly, and passing both leak tests means the air supply, dryer, and service systems are functioning properly. The purge, storage, and build statements are true but do not state the overall conclusion.