PRACTICE EXAM 15

1. A spring brake chamber is dangerous to service because it contains a:

A. Reservoir of compressed brake fluid

B. Coil power spring under enormous compression

C. Live electrical capacitor

D. Pressurized hydraulic accumulator

2. Before opening any air-system fitting, the technician must first:

A. Apply and hold the service brakes

B. Start the engine to maintain pressure

C. Drain system air to zero and verify on the gauge

D. Increase pressure to maximum

3. A technician must NEVER perform which action on a spring brake chamber?

A. Cage it with the proper bolt

B. Inspect it for external leaks

C. Replace it as a sealed unit

D. Cut it open with a torch

4. The single most important first step before servicing a brake equipped with a spring chamber is to:

A. Secure the vehicle and chock the wheels

B. Retrieve the ABS codes

C. Measure the rotor runout

D. Drain the brake fluid

5. Caging a spring brake chamber is required before service because it:

A. Increases the spring's applied force

B. Tests the diaphragm for leaks

C. Permanently disables the brake

D. Mechanically holds the lethal power spring released

6. A continuously dragging brake is a serious hazard primarily because it:

A. Improves braking efficiency

B. Lowers the air dryer purge frequency

C. Generates extreme heat that can cause fade and fire

D. Raises the governor cut-out pressure

7. The reason a technician must treat every spring brake as loaded, even one that appears released, is that:

A. The spring is always fully extended

B. Air currently holding it back can be lost

C. The chamber contains hydraulic fluid

D. The parking brake is hydraulically applied

8. Lockout/tagout before brake service is intended to:

A. Increase the governor cut-out

B. Speed the air dryer purge

C. Cage the spring brakes automatically

D. Prevent accidental re-energizing of energy sources

9. Three stored-energy hazards a technician must neutralize before brake service are compressed air, vehicle movement, and:

A. Brake fluid moisture

B. Governor cut-out pressure

C. Spring brake force

D. Wheel speed signals

10. An applied parking brake does NOT make a spring chamber safe to disassemble because:

A. The chamber is still loaded with spring force

B. The chamber is now empty of all energy

C. The spring has been removed

D. The hydraulic pressure is relieved

11. Personal protective equipment around air discharge should include eye protection because compressed air can:

A. Lower the governor cut-out

B. Cage the spring brakes

C. Drive contaminants into the eyes

D. Purge the air dryer

12. Before moving a disabled bus that has lost air and applied its spring brakes, the technician must:

A. Increase the governor cut-out

B. Replace the air dryer

C. Cage the spring brakes

D. Drain the reservoirs

13. A safety relief valve venting at high pressure is a hazard signal that the technician must respond to by:

A. Diagnosing the over-pressure cause such as the governor

B. Capping the relief valve

C. Ignoring it if braking works

D. Increasing the cut-out setting

14. Wheel chocks are placed before brake service to prevent:

A. The air dryer from purging

B. Vehicle movement

C. The governor from cutting out

D. The spring brakes from caging

15. A damaged or seized spring brake chamber must be:

A. Heated to free the mechanism

B. Disassembled and rebuilt

C. Replaced as a complete sealed unit

D. Pried open to inspect the spring

16. A dragging brake can damage which adjacent components from its heat?

A. The governor and air dryer

B. The ABS control unit and reservoirs

C. The wheel seals and bearings

D. The compressor and treadle valve

17. The correct sequence places caging the spring brake:

A. After securing the vehicle, when service requires releasing the spring

B. Before chocking the wheels

C. After opening the chamber clamp band

D. Only at maximum system pressure

18. A technician finds a chamber clamp band corroded and seized. Attempting to remove it on an uncaged chamber risks:

A. Slow air build-up

B. Explosive release of the power spring

C. A governor fault

D. A saturated air dryer

19. Why is verifying zero energy (gauges at zero, springs caged, engine locked out) the final pre-service confirmation?

A. It raises the governor cut-out

B. It confirms stored energy is neutralized before work begins

C. It speeds the air dryer purge

D. It repacks the wheel bearings

20. A bus with a dragging brake on a long downgrade poses the danger of:

A. Faster air dryer purging

B. A higher governor cut-out

C. Reduced wheel bearing end play

D. Total brake fade from accumulated heat

21. The reason a technician never applies a torch to a spring chamber is that heat can:

A. Cause the compressed power spring to release violently

B. Improve the spring's holding force

C. Speed the air dryer purge

D. Raise the governor cut-out

22. When a parking brake won't release, the safest first step is to:

A. Cut open the chamber

B. Apply a torch to the clamp

C. Verify system pressure is adequate

D. Pry off the clamp band

23. A technician should drain reservoir air before opening a fitting to prevent a:

A. Higher governor cut-out

B. Saturated air dryer

C. Slower compressor build

D. Component being launched by stored pressure

24. The spring brake's fail-safe design means a catastrophic air loss results in:

A. Total release of all brakes

B. Conversion to hydraulic braking

C. A higher governor cut-out

D. Automatic application of the brakes

25. A technician must confirm the engine cannot be started during brake service to prevent:

A. The system from re-pressurizing or the bus from moving

B. The air dryer from purging

C. The governor from cutting in

D. The wheel bearings from cooling

26. Anti-compounding protects components by preventing the dangerous condition where:

A. The air dryer over-purges

B. Spring and service forces stack on one foundation brake

C. The governor reaches cut-in

D. The wheel bearings overheat

27. A bus arrives with the ABS lamp on. It must not be released with antilock inoperative beyond allowed limits because ABS is:

A. The only braking system on the bus

B. A safety-critical system requiring repair

C. The compressor's control circuit

D. The spring brake's power source

28. The hazard of moisture freezing in an air brake system is most acute because frozen water can:

A. Improve valve lubrication

B. Raise the governor cut-out

C. Speed the dryer purge

D. Jam valves and block lines, disabling braking

29. Before any hands-on spring-chamber service, the technician returns to which fundamental rule?

A. Cage the spring and never disassemble or heat the chamber

B. Increase the governor cut-out first

C. Replace the air dryer cartridge first

D. Adjust the wheel bearings first

30. A technician must never substitute improvised tools for the proper caging tool because improper caging can:

A. Allow the power spring to release uncontrolled

B. Raise the governor cut-out

C. Speed the air dryer purge

D. Lower the brake fluid boiling point

31. The safest response to finding a relief valve venting is to:

A. Replace the relief valve immediately

B. Cap the valve to stop the noise

C. Continue operating the bus

D. Diagnose and correct the over-pressure cause

32. A dragging brake left in service can lead to a wheel-end fire because continuous friction:

A. Lowers the lining temperature

B. Generates heat that can ignite contamination and grease

C. Improves the coefficient of friction

D. Cages the spring brakes

33. The lethal energy in a spring chamber comes from the:

A. Compressed power spring

B. Brake fluid pressure

C. Wheel speed sensor circuit

D. Governor signal line

34. A bus that loses air while unsecured can roll because:

A. The compressor keeps building pressure

B. Releasing the parking brakes for a test removes the only hold

C. The air dryer purges

D. The governor cuts out

35. The correct understanding of an applied parking brake is that the spring is:

A. Removed from the chamber

B. Drained of all energy

C. Held released by air

D. Doing its job, but the chamber is still loaded

36. Hearing protection is recommended around brake service because:

A. Air discharge and purge bursts are loud

B. The governor emits a high-pitched tone

C. The wheel bearings hum loudly

D. The brake fluid boils audibly

37. A technician must secure the vehicle, neutralize stored energy, and lock out sources before:

A. Reading the governor cut-out

B. Opening any brake component

C. Measuring the brake fluid level

D. Checking the tire pressure

38. The reason damaged spring chambers are replaced rather than repaired is that opening them:

A. Lowers the governor cut-out

B. Speeds the air dryer purge

C. Risks releasing the lethal power spring

D. Improves the brake fluid boiling point

39. A wheel end overheating from a dragging brake can ruin the wheel seal, which then:

A. Raises the governor cut-out

B. Speeds the air dryer purge

C. Contaminates the brake and starves the bearing

D. Increases reservoir capacity

40. The first action when a spring-chamber service is required is always to:

A. Apply a torch to the clamp

B. Pry off the clamp band

C. Disassemble the chamber

D. Secure the vehicle, chock the wheels, and cage the spring

41. A bus must not be returned to service with stability or antilock functions inoperative because these systems:

A. Are safety-critical and protect against skids and lockup

B. Power the compressor

C. Cage the spring brakes

D. Set the governor cut-out

42. The reason a technician verifies gauges read zero before opening the service side is to confirm:

A. The governor is set correctly

B. The wheel bearings are adjusted

C. The air dryer has purged

D. Stored air pressure has been fully released

43. A dragging disc brake generates dangerous heat that can:

A. Improve fade resistance

B. Lower the rotor temperature

C. Crack the rotor and glaze the pads

D. Raise the governor cut-out

44. The fail-safe behavior of spring brakes means that a technician should expect a parked bus with no air to have its brakes:

A. Fully released and free to roll

B. In their last commanded position

C. Operated only by the dash knob

D. Firmly applied by spring force

45. A spring chamber that cannot be safely caged should be:

A. Handled per the manufacturer's safe procedure as a loaded unit

B. Forced open with a pry bar

C. Heated to soften the housing

D. Drilled to release the spring

46. The danger of misdiagnosing a dragging-brake heat complaint as a bearing fault is that:

A. The real dragging-brake problem stays in service

B. The governor cut-out rises

C. The air dryer over-purges

D. The reservoir capacity increases

47. A technician must drain the service side of the air system before removing a brake component to avoid:

A. A slower compressor build

B. A component being launched by pressure

C. A governor fault

D. A saturated air dryer

48. The spring brake stores enough force to:

A. Improve braking efficiency

B. Cause serious or fatal injury if released uncontrolled

C. Lower the governor cut-out

D. Speed the air dryer purge

49. When a parking brake "popped out" at a stop, the safest interpretation is that:

A. System pressure dropped to the auto-apply point from a leak

B. The spring chamber must be disassembled

C. The governor cut-out is too high

D. The wheel bearings are over-tight

50. A technician must never remove a chamber clamp band on a non-caged chamber because:

A. It raises the governor cut-out

B. It speeds the air dryer purge

C. It lowers the brake fluid boiling point

D. The power spring can release with lethal force

51. The reason the parking control knob auto-applies at low pressure is a safety feature ensuring the bus:

A. Builds air faster

B. Purges the dryer more often

C. Cannot operate with dangerously low air

D. Raises its governor cut-out

52. A bus with brakes out of adjustment (excessive stroke) is a safety hazard because it has:

A. Faster air dryer purging

B. Degraded, uneven braking and reduced reserve

C. A higher governor cut-out

D. Increased reservoir capacity

53. The reason lining contamination is a safety concern is that contaminated friction material:

A. Improves braking force

B. Speeds the air dryer purge

C. Loses friction and can cause pull

D. Raises the governor cut-out

54. A dragging brake's heat can boil moisture-laden brake fluid in a hydraulic system, causing:

A. Fluid fade and loss of pedal

B. A higher governor cut-out

C. Faster air dryer purging

D. Increased reservoir capacity

55. Before performing work that affects braking, wheels must be chocked because the:

A. Air dryer needs to purge

B. Vehicle could roll if the brakes are released

C. Governor must cut out first

D. Wheel bearings must cool

56. A spring chamber's caging bolt is used to:

A. Increase the spring's applied force

B. Test the chamber for leaks

C. Raise the governor cut-out

D. Mechanically draw back and lock the power spring

57. The greatest risk of working on a charged air system without draining it is:

A. A slower compressor build

B. A governor fault

C. Sudden release of pressurized air or components

D. A saturated air dryer

58. A bus left with a known dragging brake risks not only fade but also:

A. A higher governor cut-out

B. Cracked drums and damaged bearings from heat

C. Faster air dryer purging

D. Increased reservoir capacity

59. The reason a technician confirms springs are caged before beginning a repair is to:

A. Raise the governor cut-out

B. Speed the air dryer purge

C. Repack the wheel bearings

D. Ensure the lethal stored energy is neutralized

60. PPE protects against mistakes but does not replace procedure, meaning the technician must still:

A. Skip caging if wearing gloves

B. Open charged systems while wearing goggles

C. Secure the vehicle and neutralize energy before touching components

D. Disassemble spring chambers with eye protection

Answer Key & Full Answer Explanations

1. B — A spring brake chamber is dangerous because it contains a coil power spring under enormous compression that can release with lethal force. It does not hold brake fluid, a capacitor, or a hydraulic accumulator.

2. C — Before opening any fitting, the technician must drain system air to zero and verify it on the gauge so stored pressure cannot launch a component. Holding the brakes, running the engine, or raising pressure leave dangerous stored energy.

3. D — A technician must never cut a spring chamber open with a torch, because the compressed spring can release fatally. Caging, inspecting for leaks, and replacing it as a sealed unit are acceptable.

4. A — The single most important first step is to secure the vehicle and chock the wheels, since safety precedes service. Pulling codes, measuring runout, or draining fluid do not neutralize the movement and stored-energy hazards.

5. D — Caging mechanically holds the lethal power spring released so the brake can be serviced without air. It does not increase applied force, test the diaphragm, or permanently disable the brake.

6. C — A continuously dragging brake generates extreme heat that can cause fade and even fire. It does not improve efficiency, lower purge frequency, or raise cut-out.

7. B — Every spring brake must be treated as loaded because the air currently holding it back can be lost, leaving the spring loaded. The spring is not always fully extended, and the chamber holds no hydraulic fluid.

8. D — Lockout/tagout prevents accidental re-energizing of energy sources while the technician works. It does not raise cut-out, speed purging, or cage springs.

9. C — The three stored-energy hazards are compressed air, vehicle movement, and spring brake force. Fluid moisture, cut-out pressure, and wheel speed signals are not stored-energy hazards.

10. A — An applied parking brake does not make the chamber safe to disassemble because it is still loaded with spring force. The chamber is not empty of energy, the spring is not removed, and no hydraulic pressure is involved.

11. C — Eye protection is needed because compressed air can drive contaminants into the eyes during discharge. Air discharge does not lower cut-out, cage springs, or purge the dryer.

12. C — Before moving a disabled bus whose spring brakes are applied from air loss, the technician must cage the spring brakes to release them safely. Raising cut-out, replacing the dryer, or draining reservoirs would not release the springs.

13. A — A venting relief valve signals over-pressure, so the technician must diagnose the cause such as the governor or unloader. Capping it, ignoring it, or raising cut-out leaves the dangerous over-pressure uncorrected.

14. B — Wheel chocks are placed to prevent vehicle movement during service. They do not affect purging, cut-out, or caging.

15. C — A damaged or seized spring chamber must be replaced as a complete sealed unit because the power spring stores lethal energy. Heating, disassembling, or prying it open can release the spring fatally.

16. C — A dragging brake's heat can damage the adjacent wheel seals and bearings. The governor, dryer, ABS unit, compressor, and treadle valve are not at the wheel end where the heat concentrates.

17. A — Caging is done after securing the vehicle, when service requires releasing the spring. Caging before chocking, after opening the clamp band, or only at maximum pressure are unsafe sequences.

18. B — Removing a seized clamp band on an uncaged chamber risks explosive release of the power spring. It does not cause slow build, a governor fault, or a saturated dryer.

19. B — Verifying zero energy confirms stored energy is neutralized before work begins, the final safety check. It does not raise cut-out, speed purging, or repack bearings.

20. D — A dragging brake on a long downgrade risks total brake fade from accumulated heat, a runaway hazard. It does not speed purging, raise cut-out, or reduce bearing end play.

21. A — A torch is never applied to a spring chamber because heat can cause the compressed power spring to release violently. It does not improve holding force, speed purging, or raise cut-out.

22. C — When a parking brake won't release, the safest first step is to verify system pressure is adequate, since low pressure is the common cause. Cutting, torching, or prying the chamber are dangerous.

23. D — Reservoir air is drained before opening a fitting to prevent a component being launched by stored pressure. It does not raise cut-out, saturate the dryer, or slow build.

24. D — The spring brake's fail-safe design means a catastrophic air loss results in automatic application of the brakes. It does not release all brakes, convert to hydraulic, or raise cut-out.

25. A — Confirming the engine cannot start prevents the system from re-pressurizing or the bus from moving during service. It does not affect purging, cut-in, or bearing cooling.

26. B — Anti-compounding prevents the dangerous condition where spring and service forces stack on one foundation brake, which could damage components. It is unrelated to over-purging, cut-in, or bearing temperature.

27. B — A bus must not be released with antilock inoperative beyond limits because ABS is a safety-critical system requiring repair. It is not the only braking system, the compressor's circuit, or the spring brake's power source.

28. D — Frozen moisture is most dangerous because it can jam valves and block lines, disabling braking. It does not improve lubrication, raise cut-out, or speed purging.

29. A — Before hands-on spring-chamber service, the technician returns to the fundamental rule: cage the spring and never disassemble or heat the chamber. Raising cut-out, replacing the cartridge, or adjusting bearings are not the safety rule.

30. A — Improvised tools must never replace the proper caging tool because improper caging can allow the power spring to release uncontrolled. It does not raise cut-out, speed purging, or lower fluid boiling point.

31. D — The safest response to a venting relief valve is to diagnose and correct the over-pressure cause. Replacing the valve, capping it, or continuing to operate leaves the hazard uncorrected.

32. B — A dragging brake can cause a wheel-end fire because continuous friction generates heat that can ignite contamination and grease. It does not lower temperature, improve friction, or cage springs.

33. A — The lethal energy in a spring chamber comes from the compressed power spring. It is not brake fluid pressure, the sensor circuit, or the governor signal line.

34. B — A bus that loses air while unsecured can roll because releasing the parking brakes for a test removes the only hold. The compressor, dryer, and governor do not cause rolling.

35. D — The correct understanding is that an applied parking brake means the spring is doing its job, but the chamber is still loaded with spring force. The spring is not removed, drained of energy, or held released.

36. A — Hearing protection is recommended because air discharge and purge bursts are loud. The governor, bearings, and brake fluid do not produce hazardous noise.

37. B — The technician must secure the vehicle, neutralize stored energy, and lock out sources before opening any brake component. These steps are not prerequisites for reading cut-out, checking fluid level, or tire pressure.

38. C — Damaged spring chambers are replaced rather than repaired because opening them risks releasing the lethal power spring. It does not lower cut-out, speed purging, or improve fluid boiling point.

39. C — A dragging brake's heat can ruin the wheel seal, which then contaminates the brake and starves the bearing. It does not raise cut-out, speed purging, or increase capacity.

40. D — The first action when spring-chamber service is required is to secure the vehicle, chock the wheels, and cage the spring. Torching, prying, or disassembling are dangerous.

41. A — A bus must not run with stability or antilock inoperative because these systems are safety-critical and protect against skids and lockup. They do not power the compressor, cage springs, or set cut-out.

42. D — Verifying gauges read zero confirms stored air pressure has been fully released before opening the service side. It does not confirm the governor setting, bearing adjustment, or dryer purge.

43. C — A dragging disc brake generates heat that can crack the rotor and glaze the pads. It does not improve fade resistance, lower temperature, or raise cut-out.

44. D — A parked bus with no air has its brakes firmly applied by spring force, the fail-safe behavior. They are not released, in their last position, or dash-knob-only operated.

45. A — A spring chamber that cannot be safely caged must be handled per the manufacturer's safe procedure as a loaded unit. Prying, heating, or drilling it can release the spring fatally.

46. A — Misdiagnosing a dragging-brake heat complaint as a bearing fault leaves the real dragging-brake problem in service, a continuing hazard. It does not raise cut-out, over-purge the dryer, or increase capacity.

47. B — The service side must be drained before removing a component to avoid a component being launched by pressure. It does not slow build, cause a governor fault, or saturate the dryer.

48. B — The spring brake stores enough force to cause serious or fatal injury if released uncontrolled. It does not improve efficiency, lower cut-out, or speed purging.

49. A — A parking brake that "popped out" at a stop most safely indicates system pressure dropped to the auto-apply point from a leak. It does not call for disassembling the chamber, and a high cut-out or over-tight bearing is unrelated.

50. D — A chamber clamp band must never be removed on a non-caged chamber because the power spring can release with lethal force. It does not raise cut-out, speed purging, or lower fluid boiling point.

51. C — The auto-apply at low pressure is a safety feature ensuring the bus cannot operate with dangerously low air. It does not build air faster, purge more, or raise cut-out.

52. B — A bus with excessive stroke has degraded, uneven braking and reduced reserve, a safety hazard. It does not speed purging, raise cut-out, or increase capacity.

53. C — Lining contamination is a safety concern because contaminated friction material loses friction and can cause pull. It does not improve braking, speed purging, or raise cut-out.

54. A — A dragging brake's heat can boil moisture-laden brake fluid, causing fluid fade and loss of pedal. It does not raise cut-out, speed purging, or increase capacity.

55. B — Wheels must be chocked because the vehicle could roll if the brakes are released during work. Chocking is not for purging, cut-out, or bearing cooling.

56. D — The caging bolt mechanically draws back and locks the power spring so the brake is held released. It does not increase applied force, test for leaks, or raise cut-out.

57. C — The greatest risk of working on a charged air system without draining it is sudden release of pressurized air or components. It is not slow build, a governor fault, or a saturated dryer.

58. B — A known dragging brake risks not only fade but cracked drums and damaged bearings from heat. It does not raise cut-out, speed purging, or increase capacity.

59. D — Confirming springs are caged before a repair ensures the lethal stored energy is neutralized. It does not raise cut-out, speed purging, or repack bearings.

60. C — Because PPE protects against mistakes but does not replace procedure, the technician must still secure the vehicle and neutralize energy before touching components. Skipping caging, opening charged systems, or disassembling chambers are unsafe regardless of PPE.