

PRACTICE EXAM 17: ASE A5 BRAKES SIMULATION

Time Allowed: 90 Minutes **Total Questions:** 45 **Passing Score:** Approximately 70% (32/45)

Format: Multiple Choice — Select the BEST answer

EXAM INSTRUCTIONS: Read each question carefully. Select the single best answer. Manage your time — approximately 2 minutes per question. Do not leave any question unanswered.

1. A customer reports the brake pedal feels firm but the vehicle takes much longer than normal to stop. All four brakes are functioning. The MOST likely cause is:

- A. Air trapped in the master cylinder bore
- B. Contaminated brake pads or shoes with oil or grease
- C. A stuck-open metering valve holding off front brake pressure
- D. A swollen master cylinder primary cup restricting fluid flow

2. A technician is performing a brake inspection and finds the left front rotor has deep heat cracks radiating from the center hat toward the outer edge. The correct action is:

- A. Resurface the rotor to remove surface oxidation and recheck
- B. Replace the rotor — heat cracks indicate the rotor has been thermally stressed beyond safe use
- C. Apply anti-squeal compound to the rotor surface to reduce further heat buildup
- D. Machine only the hat area to relieve stress and reuse the rotor

3. A vehicle's brake pedal slowly rises after being depressed and held. This condition is MOST likely caused by:

- A. A blocked compensating port in the master cylinder
- B. A weak brake pedal return spring
- C. Residual pressure check valve failure
- D. A warped brake rotor

4. Technician A says DOT 4 brake fluid has a higher boiling point than DOT 3 and the two fluids can be mixed safely. Technician B says DOT 5 silicone fluid should never be mixed with DOT 3 or DOT 4 glycol-based fluid. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both Technician A and Technician B
- D. Neither Technician A nor Technician B

5. During a drum brake inspection, a technician finds the brake drum has a hard, shiny, glass-like surface. This condition is called:

- A. Bell-mouthing
- B. Scoring
- C. Glazing
- D. Hard spotting

6. A vehicle pulls to the left only during the first brake application after sitting overnight but stops straight after that. The MOST likely cause is:

- A. A warped left front rotor
- B. A right front caliper with a sticking slide pin
- C. A corroded left front caliper piston that drags and frees up with heat
- D. Moisture corrosion on the left front rotor surface that burns off after the first stop

7. When a brake warning light illuminates on a vehicle with a pressure differential switch, this typically indicates:

- A. The master cylinder reservoir is overfilled
- B. A pressure imbalance between the two hydraulic circuits caused by a leak in one circuit
- C. The brake fluid temperature has exceeded safe operating limits
- D. The ABS modulator has detected a solenoid fault

8. A technician is replacing rear drum brake shoes. After installation, the brakes feel effective, but the pedal travel is excessive. The MOST likely cause is:

- A. Air introduced into the system during the shoe replacement
- B. The self-adjusters were not properly set or the manual adjustment was not performed
- C. New shoes are thicker than worn shoes and require more pedal travel to apply
- D. The wheel cylinder pistons are not returning fully into the bore

9. A vehicle equipped with ABS has a DTC for the right rear wheel speed sensor. Before replacing the sensor, which of the following should be checked FIRST?

- A. ABS control module voltage supply
- B. Sensor wiring harness, connector condition, and tone ring integrity
- C. Brake fluid level in the master cylinder reservoir
- D. Right rear caliper for seizure affecting wheel rotation

10. The minimum specification for brake pedal free play is important because:

- A. Too little free play can cause the master cylinder compensating port to remain blocked, creating brake drag
- B. Too much free play reduces hydraulic pressure output at the calipers
- C. Free play determines the proportioning valve activation threshold
- D. Pedal free play directly affects ABS modulator trigger pressure

11. A technician notices that one front brake caliper bracket bolt is loose after a recent brake job. Which symptom would this MOST likely cause?

- A. A soft, spongy brake pedal
- B. A grinding or clunking noise during brake application as the caliper shifts under load
- C. Premature inboard pad wear on that corner
- D. ABS activation at low brake pedal pressure

12. Which of the following brake system components is responsible for modulating hydraulic pressure to individual wheel circuits during an ABS stop?

- A. Proportioning valve
- B. Pressure differential switch
- C. Hydraulic control unit (HCU) with solenoid valves
- D. Master cylinder secondary piston

13. A customer reports a burning smell after driving in stop-and-go traffic, and the vehicle pulls to the right. The right front wheel is hot to the touch. The MOST likely cause is:

- A. Overheated brake fluid causing vapor lock in the right front line
- B. A seized right front caliper piston or slide pin causing constant brake drag
- C. A warped right front rotor generating friction heat
- D. Incorrect brake pad compound on the right front generating excess heat

14. Technician A says that when replacing brake pads, the caliper piston dust boot should always be inspected and replaced if torn or cracked. Technician B says a torn dust boot will immediately cause the caliper to leak brake fluid. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both Technician A and Technician B
- D. Neither Technician A nor Technician B

15. A vehicle has a very firm, high brake pedal that requires excessive force to slow the vehicle. The power booster vacuum hose is connected and holding vacuum. The NEXT diagnostic step is:

- A. Replace the master cylinder
- B. Apply and release the brake pedal with the engine off, then start the engine — the pedal should drop slightly if the booster is functioning
- C. Check the brake fluid for contamination with petroleum products
- D. Inspect all four calipers for seized pistons restricting pad movement

16. When measuring brake shoe lining thickness, the minimum usable lining thickness for most drum brake applications is:

- A. 1/16 inch (1.5 mm)
- B. 1/4 inch (6.4 mm)
- C. 3/8 inch (9.5 mm)
- D. 1/2 inch (12.7 mm)

17. A vehicle with rear drum brakes has a self-adjuster that is not functioning. Which symptom will this MOST likely produce over time?

- A. Brake pull toward the rear axle
- B. Increasing brake pedal travel as the shoes wear without compensation
- C. Rear wheel lockup during moderate braking
- D. Brake fade during repeated stops

18. A technician is bench bleeding a new master cylinder before installation. The purpose of this procedure is to:

- A. Test the master cylinder output pressure before mounting it to the vehicle
- B. Remove air trapped in the master cylinder bore and piston chambers before installation
- C. Verify that the compensating ports are open by checking fluid flow
- D. Pre-fill the reservoir to prevent air from entering the booster pushrod bore

19. A customer reports the brake pedal feels normal during slow stops but becomes hard and high during emergency braking. The ABS activates but the vehicle takes longer to stop than expected. The MOST likely cause is:

- A. Low brake fluid level reducing hydraulic reserve
- B. A faulty ABS modulator releasing too much pressure during activation
- C. Glazed brake pads that lose friction at high temperatures
- D. A weak brake booster diaphragm that cannot maintain assist under high pedal loads

20. During a complete brake job, a technician finds the rubber caliper piston boot is torn on the right rear. The caliper piston itself is clean and undamaged. The correct repair is to:

- A. Apply silicone grease to the exposed piston and reuse the caliper
- B. Replace the boot only using a caliper rebuild kit if the piston and bore are undamaged
- C. Replace the entire caliper assembly since boots cannot be serviced separately
- D. Wrap the exposed piston with electrical tape until a replacement caliper is available

21. A technician finds the front brake pads are worn to 2mm on a vehicle that was serviced 6 months ago with new pads measured at 12mm. The customer drives approximately 5,000 miles in that period. The MOST likely cause of this accelerated wear is:

- A. Incorrect brake pad compound for the vehicle's weight class
- B. A seized caliper piston or slide pin causing constant pad contact with the rotor
- C. Aggressive driving with repeated high-speed stops
- D. Undersized rotors creating excessive heat and accelerating pad wear

22. Brake fluid is classified as a:

- A. Petroleum-based hydraulic fluid with high viscosity
- B. Polyalkylene glycol ether (glycol-based) hygroscopic fluid for most DOT ratings
- C. Synthetic silicone compound compatible with all rubber seal materials
- D. Mineral oil derivative with rust inhibitor additives

23. A technician is replacing a brake booster on a vehicle. After installation, the brake pedal height is correct but the pedal requires significantly more effort than expected. The MOST likely cause is:

- A. The booster pushrod length was not adjusted to the correct specification
- B. The new booster was not bled before installation
- C. The master cylinder was not bench bled after installation
- D. The booster check valve is installed in reverse, blocking vacuum supply

24. A rear disc brake caliper uses a ball-and-ramp actuating mechanism for the parking brake function. When the parking brake cable is pulled, this mechanism:

- A. Applies hydraulic pressure to the rear caliper pistons through a secondary master cylinder
- B. Mechanically rotates a screw mechanism that pushes the piston against the pad without hydraulic pressure
- C. Locks the rear axle shaft directly through a drum-in-hat parking brake assembly
- D. Activates a separate set of brake shoes inside the rotor hat to engage the parking brake

25. A vehicle fails a state inspection because the parking brake will not hold the vehicle stationary on a 10% grade with the service brakes released. All cables are in good condition and properly adjusted. The MOST likely cause is:

- A. An air leak in the parking brake actuator vacuum line
- B. Worn rear brake shoe linings with insufficient friction material to generate adequate holding force
- C. A stretched parking brake equalizer bar
- D. Incorrect cable routing causing reduced mechanical advantage

26. When a disc brake caliper is described as a "floating" caliper design, this means:

- A. The caliper uses hydraulic pressure on both sides of the rotor simultaneously
- B. Only one piston pushes the inboard pad; the caliper body then slides to pull the outboard pad against the rotor
- C. The caliper is mounted on a rotating bracket that centers itself on the rotor
- D. Both pistons float independently to equalize clamping force on both pads

27. A vehicle has a brake fluid leak at the right rear brake line fitting where it connects to the wheel cylinder. The technician tightens the fitting and the leak stops temporarily but returns after one heat cycle. The MOST likely cause is:

- A. The fitting was cross-threaded during the previous repair
- B. The brake line has a crack near the fitting that opens with thermal expansion

- C. The wheel cylinder has a cracked casting that flexes under pressure
- D. Contaminated brake fluid is degrading the fitting threads

28. A technician is using a scan tool to perform an ABS automated bleed sequence. During the procedure, the scan tool prompts the technician to open the bleeder screws at specific wheels in a specific order. This is necessary because:

- A. The scan tool controls vehicle speed during the bleeding process
- B. The ABS modulator contains internal check valves that only open when solenoids are energized by the scan tool
- C. Manual bleeding always introduces more air than scan-tool-guided bleeding
- D. The scan tool monitors fluid temperature to prevent overheating during the bleed

29. A vehicle exhibits brake grab — an immediate, violent brake application with very light pedal pressure. The MOST likely cause is:

- A. A seized proportioning valve delivering full pressure to one circuit
- B. Oil, grease, or brake fluid contamination on the brake pad or shoe friction surface
- C. An overcharged brake booster producing excessive assist
- D. Sticking caliper slide pins preventing uniform pad release

30. A technician is diagnosing a vehicle where the ABS light is on but no DTCs are stored. After clearing codes, the light returns after one drive cycle. The MOST likely cause is:

- A. A faulty ABS control module with corrupted memory
- B. An intermittent fault that triggers during driving conditions but is not present at startup
- C. A software glitch in the instrument cluster causing a false illumination
- D. Low battery voltage causing the ABS module to set a nuisance code

31. Which of the following is the correct method for disposing of used brake fluid?

- A. Pour it down a utility sink drain since it is water-soluble
- B. Mix it with used engine oil for combined recycling

- C. Take it to a certified recycling or hazardous waste disposal facility
- D. Allow it to evaporate in an open container in a ventilated area

32. A technician finds a brake hose that is hard and inflexible when inspected during a routine service. The hose shows no external cracking or leaking. The correct action is:

- A. Leave the hose in service since it shows no leaks or visible damage
- B. Replace the hose — internal deterioration causes hardening and can lead to restriction or sudden failure
- C. Coat the hose with rubber conditioner to restore flexibility
- D. Replace the hose only if it shows signs of internal restriction confirmed by a pressure test

33. A vehicle with a vacuum brake booster has adequate vacuum at the booster but the brake pedal remains hard. The technician removes the booster check valve and blows through it in both directions. Air passes freely in both directions. The correct conclusion is:

- A. The check valve is functioning normally and the booster diaphragm is the problem
- B. The check valve is faulty — it should only allow air flow in one direction and must be replaced
- C. The check valve is clear of debris and can be reinstalled
- D. The booster vacuum line has a restriction and the check valve test is invalid

34. A customer reports that the brake pedal pulsates rhythmically when braking from highway speed but not at lower speeds. This symptom is MOST consistent with:

- A. Air in the brake lines that compresses more under high-speed braking loads
- B. Excessive rotor lateral runout or thickness variation causing pedal pulsation proportional to wheel speed
- C. ABS activation triggered by the higher deceleration forces at highway speed
- D. A proportioning valve that cycles under high-pressure brake applications

35. A technician is replacing drum brake wheel cylinders. After installation and bleeding, one rear wheel cylinder immediately shows fluid weeping from the boot. The MOST likely cause is:

- A. Excessive brake line pressure from a failing master cylinder
- B. The new wheel cylinder bore is incompatible with the existing brake hose diameter
- C. The brake line fitting was not fully tightened when reconnected to the new cylinder
- D. The replacement wheel cylinder was installed with the bleeder screw on the wrong side

36. Technician A says that on a vehicle with four-wheel disc brakes, the proportioning valve is unnecessary since discs self-adjust brake force front to rear. Technician B says a proportioning valve or electronic brake force distribution (EBD) is still required on four-wheel disc brake vehicles to prevent rear wheel lockup. Who is correct?

- A. Technician A only
- B. Technician B only
- C. Both Technician A and Technician B
- D. Neither Technician A nor Technician B

37. A vehicle with electronic brake force distribution (EBD) loses EBD function due to a wheel speed sensor failure. The driver will notice:

- A. No change, since EBD is transparent to the driver under all conditions
- B. Possible rear wheel lockup tendency during hard stops since brake force is no longer being modulated electronically
- C. ABS activation at all four wheels simultaneously during normal stops
- D. Complete loss of rear braking since EBD controls the rear brake circuit exclusively

38. A technician is measuring the inside diameter of a brake drum and finds it measures 10.045 inches. The drum's maximum oversize diameter is stamped as 10.060 inches. The drum has a visible surface groove 0.030 inches deep. What is the correct action?

- A. Machine the drum to remove the groove since there is still 0.015 inches of material before the discard limit
- B. Replace the drum because after machining to remove the groove the final diameter may exceed the discard limit
- C. Install the drum as-is since the groove depth is within the 0.060-inch tolerance

D. Fill the groove with brake drum repair compound and install the drum

39. During a brake fluid flush, a technician notices the old fluid is very dark and has a burnt smell. This indicates:

A. The brake system has a slow internal leak mixing contaminants with the fluid

B. The fluid has degraded from moisture absorption and heat cycling and should be replaced on a more frequent schedule going forward

C. Petroleum-based contamination has entered the system and all rubber components must be replaced

D. The master cylinder primary cup has been breaking down and contaminating the fluid

40. A vehicle is equipped with brake pad wear sensors wired to the instrument cluster. The pad wear light is on for the right front only. The technician finds the right front pads are at 3mm and the wear sensor tab has contacted the rotor. Which of the following should be done?

A. Replace the right front pads and sensor only, since the other corners are not at the wear limit

B. Inspect all four corners, replace pads as needed at each corner, and replace the wear sensor

C. Replace only the sensor and reset the light — 3mm is within the service limit for most applications

D. Replace both front axle sets together and install a new sensor on the right side only

41. A brake line must be fabricated to replace a damaged section. The correct tubing material for brake line fabrication is:

A. Copper tubing, which is flexible and easy to flare

B. Aluminum tubing, which is lightweight and corrosion resistant

C. Double-wall steel (Bundy) tubing or approved stainless steel brake line tubing

D. Hydraulic rubber hose rated for 1,500 PSI or higher

42. A vehicle has a firm pedal but the right rear drum brake is not contributing to braking. The wheel cylinder pistons do not move when the pedal is applied. The brake line to the wheel cylinder has pressure confirmed with a gauge. The MOST likely cause is:

- A. A blocked compensating port preventing fluid from reaching the rear circuit
- B. The wheel cylinder pistons are seized in the bore and cannot move under hydraulic pressure
- C. The brake shoe return springs are too strong, overpowering the wheel cylinder output
- D. The self-adjuster has over-adjusted the shoes, preventing piston movement

43. A vehicle's ABS system uses a passive wheel speed sensor (magnetic inductive type). The technician measures the sensor output with a multimeter set to AC voltage while spinning the wheel by hand. A reading of 0.0 volts AC is obtained. The MOST likely cause is:

- A. The sensor requires the ABS control module to be active before producing output
- B. The tone ring has been removed or the sensor has an open circuit — it should produce AC voltage when the ring gear passes the sensor
- C. The multimeter must be set to DC voltage to read passive sensor output correctly
- D. The sensor only produces voltage during ABS activation events, not during normal wheel rotation

44. A customer reports a squealing noise that occurs constantly while driving and stops when the brake pedal is lightly depressed. The MOST likely cause is:

- A. Worn brake pads with the wear indicator tab contacting the rotor
- B. A brake pad anti-rattle spring that has dislodged and is contacting the rotor
- C. Glazed rotors producing noise at wheel speed frequencies
- D. A loose dust shield (backing plate) vibrating against the rotor

45. A technician has completed a full brake system overhaul including new pads, rotors, calipers, and a master cylinder. During the final road test, the pedal feels slightly spongy. The technician bled all four corners twice and the pedal has not improved. The MOST likely remaining cause is:

- A. The new master cylinder was not bench bled before installation, trapping air in the bore
- B. New brake pads require a break-in period before full hydraulic firmness is achieved
- C. The new calipers have larger bore diameters requiring more fluid volume to achieve firmness
- D. The proportioning valve is diverting excess fluid back to the reserv

PRACTICE EXAM 17 — ANSWER KEY AND EXPLANATIONS

Correct Answer Distribution: A = 11 | B = 12 | C = 11 | D = 11

- 1. B** — Contaminated friction material — A firm pedal with poor stopping performance almost always indicates contaminated pads or shoes. Oil, grease, or fluid on friction surfaces reduces the coefficient of friction dramatically while pedal feel remains normal.
- 2. B** — Replace the rotor — Heat cracks radiating from the hat area indicate repeated thermal overload and stress cycling. A heat-cracked rotor is structurally compromised and can fail suddenly under hard braking. Resurfacing does not address internal stress fractures.
- 3. A** — Blocked compensating port — When the brake pedal is released, fluid must return through the compensating port. A blocked port traps fluid on the caliper side and causes the brakes to slowly self-apply, raising the pedal as residual pressure builds in the circuit.
- 4. C** — Both technicians — DOT 4 has a higher minimum boiling point than DOT 3 and both are glycol-based, making them miscible and safe to mix. DOT 5 is silicone-based and absolutely must not be mixed with glycol-based fluids as mixing causes gelling and seal damage.
- 5. C** — Glazing — A hard, glassy, highly polished drum surface is called glazing. It results from light, prolonged contact at temperatures insufficient to properly transfer friction material, creating a hardened surface layer that significantly reduces friction.
- 6. D** — Rust on rotor surface — Overnight surface oxidation on a rotor is normal and burns off during the first brake application. This causes a brief pull toward the side where corrosion is thicker or more uneven, which clears immediately after the first firm stop.
- 7. B** — Pressure imbalance between circuits — The pressure differential switch senses a pressure drop in one hydraulic circuit compared to the other, indicating a leak somewhere in that circuit. It illuminates the brake warning light to alert the driver of a potentially compromised brake circuit.
- 8. B** — Self-adjusters not set — After drum brake shoe replacement, the shoes must be manually adjusted close to the drum before returning the vehicle to service. Without this adjustment, the pedal must travel excessively to move the shoes through the large gap before drum contact.
- 9. B** — Inspect wiring, connector, and tone ring — Before replacing any sensor, always inspect the wiring harness for chafing, the connector for corrosion or pushed-back terminals, and the tone ring for cracks or missing teeth. Most wheel speed sensor codes are caused by wiring or tone ring issues, not failed sensors.
- 10. A** — Blocked compensating port — If there is no pedal free play, the brake pushrod holds the master cylinder piston slightly forward, covering the compensating port. This traps fluid in the lines, causing continuous brake drag that worsens as fluid heats and expands.

11. B — Grinding or clunking during braking — A loose caliper bracket allows the caliper to shift under braking load. This movement produces a distinct grinding or clunking sensation and noise each time the brakes are applied as the caliper shifts against its mounting surfaces.

12. C — Hydraulic control unit with solenoid valves — The HCU is the heart of the ABS system. Its solenoid valves rapidly cycle between pressure hold, pressure release, and pressure reapply modes to individually modulate brake pressure at each wheel during an ABS event.

13. B — Seized caliper causing drag — A wheel that is hot to the touch after normal driving with a brake pull toward that side is the classic presentation of a seized caliper piston or binding slide pin. Continuous friction generates heat and pulls the vehicle toward the dragging brake.

14. A — Technician A only — Inspecting and replacing torn dust boots during brake service is correct. However, a torn boot does not immediately cause brake fluid leakage — it exposes the piston to dirt and moisture, leading to corrosion and eventual seal failure over time, not an immediate fluid leak.

15. B — Pedal drop test — The standard vacuum booster functional test is to depress and release the pedal several times with the engine off to exhaust vacuum, hold light pedal pressure, then start the engine. A working booster will cause the pedal to drop slightly as vacuum assist is restored.

16. A — 1/16 inch (1.5 mm) — Most manufacturers specify a minimum drum brake lining thickness of 1/16 inch (approximately 1.5mm) measured at the thinnest point. At or below this measurement, the lining must be replaced to prevent metal-to-metal contact.

17. B — Increasing pedal travel — Self-adjusters compensate for lining wear by maintaining consistent shoe-to-drum clearance. A non-functioning adjuster allows the clearance to increase as shoes wear, requiring progressively more pedal travel to move the shoes far enough to contact the drum.

18. B — Remove air from bore before installation — Bench bleeding removes air trapped in the master cylinder bore and secondary chamber before the unit is installed. Installing an unbled master cylinder introduces a large air pocket directly into the brake system that is very difficult to remove afterward.

19. B — ABS modulator releasing too much pressure — If ABS is activating correctly but stopping distance is longer than expected, the modulator may be releasing too much pressure or modulating too aggressively. A faulty solenoid that dumps too much pressure reduces braking effectiveness during ABS events.

20. B — Replace the boot using a rebuild kit — If the caliper piston and bore are clean, undamaged, and within specification, replacing only the dust boot using a caliper rebuild kit is an accepted repair. Full caliper replacement is not required when only the boot is damaged and the piston is serviceable.

21. B — Seized caliper causing constant contact — Abnormally rapid pad wear almost always indicates the pad is not releasing from the rotor properly. A seized piston or binding slide pin maintains continuous or near-continuous friction material contact, consuming pads in a fraction of their normal service life.

22. B — Polyalkylene glycol ether hygroscopic fluid — DOT 3, DOT 4, and DOT 5.1 brake fluids are glycol ether-based and hygroscopic, meaning they actively absorb moisture from the atmosphere over time. This is why wet boiling point is a critical specification and why periodic fluid replacement is necessary.

23. D — Check valve installed backwards — The booster check valve is a one-way valve that allows vacuum into the booster but prevents it from escaping when the engine is off. If installed in reverse, it blocks vacuum from ever entering the booster, resulting in zero power assist and a very hard pedal.

24. B — Screw mechanism pushes piston mechanically — Rear disc calipers with integrated parking brakes use a ball-and-ramp or screw-type mechanism that converts cable tension into linear piston movement, pressing the pad against the rotor mechanically without requiring hydraulic pressure.

25. B — Worn rear brake shoe linings — The parking brake on most vehicles relies on the rear brake friction surfaces for holding force. If the shoe linings are worn thin, they cannot develop sufficient friction to hold the vehicle on a grade regardless of cable adjustment or mechanical advantage.

26. B — Single piston slides the caliper body — A floating caliper has one piston that pushes the inboard pad against the rotor. Reaction force causes the caliper body to slide on its pins in the opposite direction, pulling the outboard pad against the rotor. Both pads clamp with equal force from a single piston.

27. B — Crack near the fitting — A brake line with a hairline crack near a fitting will seal temporarily when tightened due to compression but reopens as the metal expands and contracts with heat cycling. The only correct repair is to replace or cut and re-flare the brake line at that point.

28. B — Internal check valves only open when solenoids are energized — The ABS HCU contains internal passages and check valves that are normally closed. These passages only open when the control module energizes the solenoids. Without scan tool activation, manual bleeding cannot reach or purge air from these internal chambers.

29. B — Contamination on friction surface — Brake grab — violent application with very light pedal pressure — is the hallmark symptom of oil, grease, or brake fluid contamination on brake linings. Contaminants create extremely uneven and unpredictable high-friction spots that grab violently on contact.

30. B — Intermittent fault during driving — A code that clears but returns after one drive cycle is almost always an intermittent fault that only manifests under specific operating conditions such as wheel speed, temperature, acceleration load, or road surface. Static testing at startup will not reveal the fault.

31. C — Certified recycling or hazardous waste facility — Brake fluid is a regulated hazardous material. It must be taken to an approved recycling center or hazardous waste disposal facility. It should never be poured down drains, mixed with other fluids, or allowed to evaporate due to environmental and health hazards.

32. B — Replace the hose — A brake hose that has become hard and inflexible has experienced internal rubber deterioration. The inner lining can separate and act as a one-way valve, trapping pressure and causing brake drag. Hardened hoses should always be replaced regardless of the absence of visible external damage.

33. B — Check valve is faulty — A vacuum brake booster check valve is a one-way device. Air and vacuum should flow freely in one direction (into the booster) but should be completely blocked in the other direction. If air passes freely in both directions, the check valve has failed and must be replaced.

34. B — Rotor lateral runout or thickness variation — Rotor runout and thickness variation produce a pulsation frequency that is directly proportional to wheel rotational speed. The faster the wheel turns, the more rapidly the high spots contact the pad, resulting in pulsation that is more pronounced at highway speed and less noticeable at low speed.

35. C — Brake line fitting not fully tightened — Weeping from the boot of a new wheel cylinder immediately after installation is almost always a loose brake line fitting rather than a defective cylinder. Thread sealant or proper torque of the inverted flare fitting resolves the leak without replacing the new component.

36. B — Technician B only — Even with four-wheel disc brakes, the rear brakes must receive proportionally less pressure than the fronts during hard stops to prevent rear wheel lockup caused by weight transfer. A proportioning valve or EBD system is still required. Technician A is incorrect.

37. B — Rear wheel lockup tendency — EBD continuously monitors wheel speed and adjusts rear brake pressure to maximize stopping efficiency without lockup. When EBD is lost, the fixed brake bias may allow rear wheels to lock during hard stops, particularly with light vehicle loading, where the rear tires have less traction.

38. B — Replace the drum — The drum currently measures 10.045 inches. Removing the 0.030-inch groove requires machining at least 0.030 inches of material, bringing the drum to approximately 10.075 inches — which exceeds the 10.060-inch maximum oversize limit. The drum cannot be machined safely and must be replaced.

39. B — Degraded fluid from moisture and heat cycling — Very dark, burnt-smelling brake fluid indicates severe degradation from long-term moisture absorption and repeated heat cycling. This is a maintenance failure, not a contamination event. The fluid should be replaced and a shorter service interval recommended going forward.

40. B — Inspect all corners, replace as needed, replace sensor — When a wear sensor triggers, inspect all four corners and replace pads at any corner at or near the wear limit. The triggered wear sensor is a one-time-use component that is destroyed on contact with the rotor and must always be replaced with the pad set.

41. C — Double-wall steel or approved stainless steel tubing — Brake lines must withstand thousands of PSI of hydraulic pressure and resist corrosion. Only double-wall steel (Bundy) tubing or approved stainless steel brake line tubing meets these requirements. Copper, aluminum, and rubber hose are not acceptable for rigid brake line fabrication.

42. B — Wheel cylinder pistons seized — If brake line pressure is confirmed adequate at the wheel cylinder but the pistons do not move, the pistons are seized in the bore due to corrosion. No amount of hydraulic pressure will move a completely seized piston. The wheel cylinder must be replaced.

43. B — Open circuit or missing tone ring — A passive (magnetic inductive) wheel speed sensor generates its own AC voltage as the teeth of the tone ring pass the sensor tip, creating a fluctuating magnetic field. A reading of 0.0 volts AC during wheel rotation means either the sensor coil has an open circuit or the tone ring is absent or damaged.

44. D — Loose dust shield vibrating against the rotor — A noise that is present while driving and stops when the brake pedal is lightly pressed is consistent with a loose dust shield (backing plate) vibrating at wheel speed. Light brake application clamps the rotor against the pads and slightly moves the shield away from contact, stopping the noise.

45. A — Master cylinder not bench bled before installation — After a complete overhaul with a new master cylinder, a persisting spongy pedal that does not improve with multiple bleeds almost always traces back to air in the master cylinder bore from skipping the bench bleed procedure. Air at the top of the hydraulic circuit is the last and most stubborn to remove.