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Ase a5 study guide

Today's vehicles employ friction braking systems, which generate heat as a byproduct. This heat, combined with normal wear, can cause rotors to warp and distort. To mitigate this issue, front rotors typically feature ventilation fins that aid in cooling and circulation of airflow. In contrast, solid rotors used on rear brakes of front-wheel drive vehicles are generally thinner and smaller in diameter. Fixed and floating calipers are the two primary types found on modern vehicles. The majority of front-wheel drive vehicles utilize a floating caliper, which consists of a hub and rotor cast as separate parts. This design makes it easy to remove and replace rotors at a lower cost. On the other hand, fixed brake calipers have the hub and rotor integrated into a single unit. When deciding whether to replace or machine a rotor, measure its thickness and inspect for cracks on the surface. If the rotor exhibits signs of cracking or is thinner than specifications, it's recommended to replace it. Additionally, check the rotor for runout using a dial gauge and compare it with the manufacturer's specifications. A micrometer can also be used to measure rotor thickness at various points. Rosters will naturally develop conical or dished shapes due to normal wear. Most rotors are made of cast iron, while brake pads are significantly softer materials. It's crucial to inspect for pad deposits collecting around the surface of the rotor, as a distortion in the rotor can accumulate pad material in that spot. In cases where a rotor meets specifications, a brake lathe can be used to resurface and restore its finish. However, it's essential to avoid removing too much surface material and bringing the rotor's thickness below the threshold. Instead, remove only what's necessary, and always perform a final slow cut to achieve a smooth surface. If you notice ridges on the surface of the rotor that can be felt with your fingernail or pen tip, it's recommended to machine the rotor smoother. This roughness will prematurely wear down brake pads and potentially cause a vibrating or humming sound during braking. After machining, wash the rotor's surface with soap and water to remove excess metal shavings. Answers: 11.A: Wrong (DOT 5.1 is a different chemistry) 12.A: Wrong (Old and contaminated brake fluid has likely absorbed moisture) The brake fluid flush necessary due to its lower boiling point, causing pressure loss in the system. The vehicle's brake pedal will sag to the floor as internal cup seals bypass fluid pressure, leading to creep forward in gear. Faulty brake boosters result in poor braking performance and a hard brake pedal. Vehicles with front disc rear drum brakes have metering valves that delay pressure long enough for balanced braking. A faulty right front wheel bearing is loudest during left-hand turns due to the vehicle's weight and inertia. High-pressure units must be discharged before removal, following manufacturer procedures. Petroleum products can damage rubber brake components; inspect gaskets and fluid for contamination. The reservoir cap gasket functions as a flexible seal, preventing contamination of the brake fluid. Composite plastic reservoirs have screw-on type caps with rubber gaskets to prevent air entry. A kinked brake line or twisted brake hose causes brake drag; avoid twisting hoses when reinstalling calipers. Button.ANswer D is correct. Parallelism is diagnosed by measuring several spots on the surface of the rotor with a micrometer.18.Button.ANswer A is incorrect. The answer is 14.5 mm. Metric micrometers are similar to standard micrometers.Button.ANswer B is incorrect. Whole number increments are one side of the sleeve, and half-millimeter increments are on the other.Button.ANswer D is correct. The thimble has 50 increments of .01 millimeters.Answer D is correct. It's vital to remember that increments are on both sides of the sleeve.19.Button.ANswer A is incorrect. Automakers typically use double-walled steel tubing as their standard OEM brake line.Button.ANswer B is incorrect. Brake lines are replaced with OEM, aftermarket galvanized steel, or fabricated metal tubing and fittings.Button.ANswer C is incorrect. They use double-walled steel tubing with either ISO or double-flared ends.Button.ANswer D is incorrect. Some fabricators use more flexible nickel-copper alloy, never 100% copper tubing found in hardware stores.20.Button.ANswer A is incorrect. The proportioning valve is part of the combination valve.Button.ANswer B is incorrect. The metering valve is part of the combination valve.Button.ANswer C is correct. Both technicians are correct.Button.ANswer D is incorrect. The brake failure light switch is also part of the combination valve.Page 4ASE A5 Brakes Practice Test22.Button.ANswer C is correct. Sticking and seized guide pins, sticking and seized caliper pistons, brake pad misalignment, and disc thickness variation result in premature wear.Button.ANswer D is incorrect. Both A and B are not correct.Button.ANswer A is incorrect. Check the circuit's fuse if both the left and right side brake lights are out.Button.ANswer C is correct. A stuck closed brake switch completes the circuit. It results in brake light illumination at all times, even without pressing the pedal. Button.ANswer D is correct. Check the right side bulb first. Most of the time, it's apparent the bulb has burned by the discoloring inside the bulb.23.Button.ANswer B is incorrect. A binding or misadjusted parking brake cable can prevent application and release.Button.ANswer C is correct. Both technicians are correct.Button.ANswer D is incorrect. You'll also find that many strut bars have star adjusters incorporated. Adjusting these systems to maintain proper parking brake tension and operation is important.24.Button.ANswer B is incorrect. There are two types of Electric Parking Brakes. They both have a switch in the passenger's compartment. Button.ANswer C is correct. Cable-puller EPB parking brakes use cables that can stretch and require periodic checks and adjustments. Button.ANswer D is incorrect. Caliper-integrated EPB parking brakes have actuators/motors fastened to the brake caliper and have no cables to rust or adjust.Answer C is incorrect. The motor is part of the Given article text here The brake system requires specific procedures for maintenance and replacement, particularly with electric parking brakes. A scan tool must be used to place the system in service or maintenance mode before replacing the pads. In conventional parking brake systems, a manual lever or handle is used along with a brake cable. When measuring the inside diameter of a brake drum, it's recommended to use a brake drum micrometer or caliper. This ensures accurate measurements and prevents damage from excessive wear or discarding beyond maximum specifications. To avoid issues with the backing plate, high-temperature lubricant should always be used between the backing plate and shoe. Over-adjusted rear brake shoes can result in overheating, brake drag, and possible wheel lockup. In modern vehicles, air compressibility can cause a spongy feeling when pressing the brake pedal, particularly in hybrid and electric vehicles. Worn brake pads can produce noise from chatter clips or trigger a warning lamp from the electronic brake pad wear indicator. To diagnose issues with the master cylinder, it's essential to isolate it by blocking outlet ports with plugs and checking the pedal for firmness. Air trapped in the ABS unit, line, or hose can also cause problems. Proportioning valves play a crucial role in balanced braking, reducing hydraulic pressure to rear brake units during sudden braking. This helps prevent rear-wheel lockup. Adjusting the height-sensing proportioning valve at curb height is recommended when all four tires are firm on the ground. In some cases, wheel bearings can cause issues with speed sensor tone rings. Inspecting and maintaining these components is essential for proper brake system function. 1.I noticed that the tire at the top and bottom were rocking back and forth, which may indicate a loose wheel bearing(page 6 ASE A5 Brakes Practice Test31.Answer A is correct). 2.Rust on the hub flange causes an uneven surface (Answer B is wrong). 3.I think the problem might be with the hub flange rather than stuck slide pins (Answer C is wrong) or excessive lateral runout which can cause a vibration in the steering wheel (Answer D is wrong). 4.A faulty metering valve results in a nosedive condition(Answer D is correct). 5.Faulty wheel bearings make a grinding noise that changes pitch during turns (Answer B is correct). 6.Brake lines are made from double-walled steel tubing and coated with tin or an alloy capable of resisting rust and corrosion (Answer B is correct). The pedal may fade to the floor when braking due to insufficient braking force, causing the vehicle to drift or pull to one side. Incorrectly seated slide pins can prevent sufficient braking pressure, leading to premature wear on the brake pads. Proper brake shoe alignment is crucial for optimal braking performance. The primary shoe, with shorter lining, faces the front of the vehicle, while the secondary shoe faces the rear. Reversing the primary and secondary shoes can cause noise, wheel lockup, and a pull to one side. The quick take-up master cylinder provides more brake fluid volume, making it fuel-efficient. However, frozen brake calipers or slide pins can cause uneven pad wear, leading to reduced braking performance. Using silicone-based fluid (DOT 5) is usually found in special applications, such as show cars, as it doesn't damage painted surfaces. Old and contaminated brake fluid has a lower boiling point, requiring a brake fluid flush for maintenance. The left front wheel bearing noise is most pronounced when making right-hand turns due to the vehicle's weight and inertia pushing on it during a left-hand turn. This makes Answer D correct. High-pressure units in ABS systems can be hazardous, so it's crucial to discharge them before removal. The manufacturer's procedures should always be consulted before disassembling an ABS unit. This confirms that Answer B is correct and the other options are wrong. The brake fluid reservoir cap gasket acts as a flexible seal to prevent contamination of the brake fluid by keeping air out when the reservoir levels drop. This eliminates the need for a flush if only the cap's seal or the fluid is contaminated. Therefore, Answer C is correct. Most modern vehicles use composite plastic reservoirs with screw-on caps containing a rubber gasket between the cap and the reservoir. As a result, Answer D is incorrect. In four-wheel disc brake systems like the one on this vehicle, glazed brake shoes are more common due to excessive heat caused by a dragging brake unit. Glazed brake pads occur when brake pads are better ventilated. This makes Answer D correct. A kinked or twisted brake line can cause brake drag, resulting in friction loss and reduced braking performance. Therefore, it's essential to avoid twisting the flexible brake hose during caliper reinstallation. This confirms that Answer D is correct. To check a rotor for lateral runout, use a dial indicator to measure side-to-side movement. This makes Answer C correct and eliminates the other options as incorrect. The correct measurement of 14.5 mm can be read using both whole number increments on one side of the sleeve and half-millimeter increments on the other. Therefore, Answer D is correct. Automakers typically use double-walled steel tubing for their OEM brake lines. This makes Answer A correct. Brake lines are usually made from high-carbon steel to withstand corrosion and provide optimal performance under various conditions. The correct answers include: OEM, aftermarket galvanized steel, or fabricated metal tubing and fittings being used for specific components, such as double-walled steel tubing with ISO or double-flared ends. Some fabricators use more flexible nickel-copper alloy instead of pure copper tubing found in hardware stores. The proportioning valve is part of the combination valve, which includes both technicians being correct about this component's function. Additionally, the brake failure light switch is also part of the combination valve. Furthermore, premature wear results from sticking and seized guide pins, sticking and seized caliper pistons, brake pad misalignment, and disc thickness variation. It's essential to check the circuit's fuse if both left and right side brake lights are out, as a stuck closed or open brake switch can cause constant illumination or no illumination at all. A damaged or missing return spring will prevent shoes from returning to rest correctly, while a binding or misadjusted parking brake cable can hinder application and release. It's crucial to maintain proper parking brake tension and operation, especially with strut bars having star adjusters incorporated. Lastly, conventional parking brake systems are activated by a manual lever or handle and a brake cable, whereas electric parking brakes use actuators/motors fastened to the brake caliper and have no cables to rust or adjust. When measuring the inside diameter of a brake drum, it's essential to use a brake drum micrometer or caliper to ensure accurate readings. To address brake issues, first identify if there's air in the system, which can cause a spongy pedal feel. Unlike some who suggest isolating the master cylinder, technicians agree that air can be present anywhere, including the ABS unit, a line or hose, or one of the brake units. Properly lubricate components to avoid issues like rubber swelling and evaporation. For a smooth restoration, shoe pads on backing plates may need to be sanded or filed. Always follow high-temperature lubricant guidelines between the backing plate and shoe for optimal performance. Moreover, use the correct proportioning valve to balance braking pressures and prevent rear-wheel lockup during sudden braking. Regularly inspect components like tone rings for speed sensors, as loose wheel bearings can affect their accuracy. Moreover, check the hub flange for rust or debris, which may cause uneven pad wear or pulsations when braking. A soft, spongy pedal indicates a problem with Answer A is incorrect. A low manifold vacuum would cut off the vacuum assist unit's power supply, while Answer C is wrong. A faulty vacuum booster produces a hard brake pedal, whereas leaking master cylinder cup seals cause the brake pedal to drop to the floor, making Answer D correct. A faulty metering valve results in a nosedive condition, eliminating Answer A. Cupped tires produce a noise that changes pitch on different road surfaces, but Faulty wheel bearings are responsible for a grinding or growling sound, changing pitch during turns, according to Answer B. Answer C is incorrect as left front brake drag causes the vehicle to pull to one side. Worn struts don't affect cupping, and Answer D is wrong about worn struts resulting in cupped tires. Compression fittings can't safely handle high pressure, so Answer A is incorrect. Brake lines are made from double-walled steel tubing coated with tin or an alloy to resist rust and corrosion, making Answer B correct.