

## MAST Test - 100 Questions

1. The typical valve stem-to-valve guide clearance is \_\_\_\_\_.
  - a. 0.030 to 0.045 inches (0.8 to 0.10 millimeters)
  - b. 0.015 to 0.020 inches (0.4 to 0.5 millimeters)
  - c. 0.005 to 0.010 inches (0.13 to 0.25 millimeters)
  - d. 0.001 to 0.003 inches (0.03 to 0.08 millimeters)
  
2. The discharge line from the compressor is hot to the touch. Technician A says that the system is low on refrigerant. Technician B says that the compressor is worn and is not compressing the refrigerant enough for proper operation of the air-conditioning system. Which technician is correct?
  - a. Technician A only
  - b. Technician B only
  - c. Both Technicians A and B
  - d. Neither Technician A nor B
  
3. Two technicians are discussing bearing clearance measurement. Technician A says that the main and rod bearing clearance can be measured with plastic gauging material (Plastigage). Technician B says that the engine crankshaft should be rotated for two complete revolutions when Plastigage is used between the crankshaft and the main or rod bearings. Which technician is correct?
  - a. Technician A only
  - b. Technician B only
  - c. Both Technicians A and B
  - d. Neither Technician A nor B
  
4. After the engine block has been machined, the block should be cleaned with \_\_\_\_\_.
  - a. A stiff brush and soap and water
  - b. A clean cloth and engine oil
  - c. WD-40
  - d. Spray solvent washer
  
5. Two technicians are discussing a compression test. Technician A says that the engine should be cranked over with the pressure gauge installed for "4 puffs." Technician B says that the maximum difference between the highest-reading cylinder and the lowest-reading cylinder should be 20%. Which technician is correct?
  - a. Technician A only
  - b. Technician B only
  - c. Both Technicians A and B
  - d. Neither Technician A nor B

6. An automatic transmission is hard to fill with ATF because the fluid keeps blowing back out of the fill tube. What is the *most likely* cause?
- A clogged or restricted cooler line
  - A worn pressure regulator valve bore
  - A clogged or restricted filter
  - A clogged breather vent
7. A transmission slips when it shifts. Which is the *most likely* cause?
- A defective torque converter
  - A defective one-way clutch
  - Worn planetary gears
  - An open shift solenoid
8. Thickness variation specification for most disc brake rotors is \_\_\_\_\_.
- 0.0005
  - 0.050 inch
  - 0.050 inch
  - 0.500 inch
9. Before road testing a vehicle to determine if the automatic transmission is performing normally, which should be performed?
- Check for any stored diagnostic trouble codes
  - Check the fluid level
  - Check the fluid condition and color
  - All of the above
10. The owner of a vehicle equipped with a manual transaxle complained that gear clash was heard whenever shifting. Which is the *least likely* to be the cause?
- Worn blocking ring
  - Misadjusted clutch linkage
  - Defective output shaft bearing
  - Defective pilot bearing
11. Two technicians discuss the “hot” light on the dash. Technician A says that the light comes on if the cooling system temperature is too high for safe operation of the engine. Technician B says that the light comes on whenever there is a decrease (drop) in cooling system pressure. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B

12. The voltage drop is being tested on a cranking circuit. Technician A says that the voltmeter test leads need to be placed at the battery positive and the other test lead to the starter terminal to measure the voltage drop on the positive part of the circuit. Technician B says that the engine has to be cranked using the starter to measure the voltage drop.

Which technician is correct?

- a. Technician A only
- b. Technician B only
- c. Both Technicians A and B
- d. Neither Technician A nor B

13. After a disc brake pad replacement, the brake pedal went to the floor the first time the brake pedal was depressed. The most likely cause was \_\_\_\_\_.

- a. Air in the lines
- b. Improper disc brake pad installation
- c. Lack of proper lubrication of the caliper slides
- d. Normal operation

14. Leaking antifreeze can be what color?

- a. Green
- b. Orange
- c. Red
- d. Any of the above

15. When replacing an external fuel filter, best practices include \_\_\_\_\_.

- a. Use the same brand as the original as the replacement filter
- b. Reuse the filter after cleaning
- c. Relieve fuel system pressure before removing the fuel line connections
- d. Tighten fasteners as tight as possible

16. A five-speed manual transaxle is noisy in all gears. Which is the *least likely* cause?

- a. A pilot bearing
- b. An input shaft bearing
- c. An output shaft bearing
- d. Final drive side (differential) bearings

17. To flush a hydraulic clutch system, what should be used?

- a. DOT 3 brake fluid or clutch fluid
- b. DOT 5 brake fluid
- c. Solvent
- d. Brake clean

18. A starter is being replaced. What precautions are needed before performing this procedure?
- Disconnect the negative battery cable.
  - Disconnect the positive battery cable
  - Remove the starter fuse
  - Disarm the driver's side airbag for safety
19. Power steering fluid is observed dripping out of the boots of the power rack and pinion steering gear assembly. What is the *most likely* cause?
- A loose or worn inner tire rod end (ball-socket assembly)
  - Leaking control valve seals
  - A leaking inner rack seal
  - A loose stub U-joint
20. A steering dampener looks like a \_\_\_\_\_.
- Bump stop
  - Shock absorber
  - Pulley
  - Straight long steel rod
21. Transfer case fluid is \_\_\_\_\_.
- Engine oil (usually SAE 5W-30 or SAE 10W-30)
  - ATF
  - Gear lube (usually SAE 80W-90)
  - Any of the above are possible
22. Why is a scan tool needed when checking the level of automatic transmission fluid?
- To determine the fluid temperature
  - To check for any stored diagnostic trouble codes
  - To check which solenoids inside the transmission/transaxle are active.
  - To determine the fluid capacity
23. Two technicians are discussing rotor finish. Technician A says to use a sandpaper block on both sides of the rotor while being rotated on the lathe for one minute to achieve the proper surface finish after the rotor has been machined. Technician B says that the rotor should have a non-directional finish. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B

24. Technician A says that a vehicle will pull (or lead) to the side with the most camber (or least negative camber) if the difference exceeds factory specifications. Technician B says that a vehicle will pull (or lead) to the side with the most front toe. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B
25. The low oil pressure warning light usually comes on.
- Whenever an oil change is required
  - Whenever oil pressure drops dangerously low (3 to 7 psi)
  - Whenever the oil filter bypass valve opens
  - Whenever the oil filter anti-drain-back valve opens
26. Accessory drive belts are checked for all *except*.
- Cracks
  - Wear
  - Length
  - Alignment
27. Why does the brake pedal need to be depressed several times after replacing the disc brake pads?
- To seat the pads into the caliper piston assembly
  - To force the pistons outward so that the pads contact the rotor
  - To bed in the brake pads
  - To break in the new pads
28. Which statement is true about springs?
- Torsion bars are often adjustable to control ride height
  - Leaf springs use a center bolt
  - Spring can sag resulting in lower ride height
  - All of the above
29. During a cylinder leakage (leak-down) test, air is noticed coming out of the oil fill opening. Technician A says that the oil filter may be clogged. Technician B says that the piston rings Automotive Maintenance and Light Repair may be worn or defective. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B

30. When jump starting a vehicle, the last connection from another vehicle or a jump box should be \_\_\_\_\_.
- The connection to a good ground on the disabled vehicle away from the battery
  - The connection to the negative terminal of the good vehicle
  - The connection to the positive terminal of the disabled vehicle
  - Any of the above
31. When replacing steering or suspension parts, which precaution is needed to be performed?
- Fasteners tighten to factory specifications
  - Most parts need to be replaced in pair (left and right side)
  - The front wheels should be in the straight-ahead position when the final parts are tighten
  - All of the above
32. What precautions are needed to be performed to help prevent air from getting trapped in the cooling system when replacing coolant?
- Use the proper antifreeze as specified
  - Open bleeder valve(s) during filling
  - Use premixed coolant
  - Wear protective gloves
33. What tool should a technician use to disconnect an outer tie rod end from an aluminum steering knuckle after the retaining nut has been removed?
- A brass hammer
  - An aluminum tapered tool ("pickle fork")
  - A puller
  - A torch using a rosebud tip
34. How many drum brake shoe support pads are located on each backing plate?
- 6
  - 4
  - 2
  - 8 or more depending on make and model of vehicle
35. The tires on an all-wheel- drive vehicle should all be \_\_\_\_\_.
- Same brand and size
  - Same inflation pressure
  - Within 1/16 inch of the same tread depth
  - All of the above

36. The button on the \_\_\_\_\_ valve should be depressed or held out when pressure bleeding the brakes.
- Metering
  - Proportioning
  - Pressure differential
  - Residual check
37. When replacing light bulbs, a wise technician should \_\_\_\_\_.
- use caution working around the high voltage of a HID headlight system
  - not touch the glass part of a halogen bulb
  - use the specified trade number bulb as a replacement
  - all of the above
38. A typical disc brake “loaded caliper” usually includes what parts?
- New or rebuilt (remanufactured) caliper assembly
  - Replacement caliper guide pins
  - Any needed shims and hardware
  - All of the above
39. The letters "DE" on the edge of a disc brake pad indicate \_\_\_\_\_.
- Wear resistance codes
  - Relative noise level codes
  - Coefficient of friction codes
  - Thickness codes
40. The owner of vehicle that is equipped with a supercharger complains that lately the engine is producing lower than normal power. Which is the most likely cause?
- A stuck closed bypass valve
  - A clogged exhaust system
  - A plugged PCV valve
  - Low coolant level
41. Battery voltage reads 10.32 volts on a DMM during engine cranking. Technician A says that the battery could be weak. Technician B says the starter may be defective. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B

42. A vehicle equipped with a vacuum brake booster has no power assist until the engine has run for a minute or two, then the power assist works normally. What is the *most likely* cause?
- Worn front disc brake pads
  - Brake pedal push rod adjusted too short
  - Engine needs a tune-up to produce a higher vacuum at idle speed
  - A defective check valve
43. The rear brakes lock up during a regular brake application. Technician A says a stuck open metering valve could be the cause. Technician B says that stuck front disc brake calipers could be the cause. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B
44. Service information should be checked before replacing/adding manual transmission/transaxle fluid because it can be \_\_\_\_\_.
- Automatic transmission fluid (ATF)
  - Engine oil
  - Gear lube
  - Any of the above
45. Where can the type of power steering fluid be found?
- On the reservoir fill cap
  - In the owner's manual
  - In service information
  - Any of the above
46. The specified tire inflation pressure is found \_\_\_\_\_.
- On the driver's side door placard
  - On the tire sidewall
  - Either a or b
  - None of the above
47. A scan tool is likely to be needed to perform which operation?
- Measure rear toe (total)
  - Calibrate steering angle sensor
  - Center the steering wheel
  - All of the above
48. Typical lug nut torque specifications for a passenger vehicle is usually \_\_\_\_\_.
- 60-70 lb-ft
  - 80-100 lb-ft
  - 110-150 lb-ft
  - 160-180 lb-ft



49. Cabin filters \_\_\_\_\_.
- May be accessed from inside the vehicle on the passenger side behind the glove compartment
  - Under the hood on the passenger side.
  - Should be replaced as part of regular maintenance
  - All of the above
50. The location of a refrigerant leak is often where what is seen?
- A clear liquid leaking or dripping
  - A green mist is seen
  - An oily areas
  - Any of the above
51. A good reading for a cylinder leakage test would be \_\_\_\_\_.
- Within 20% among cylinders
  - All cylinders below 20% leakage
  - All cylinders above 20% leakage
  - All cylinders above 70% leakage and within 7% of each other
52. A vibration is being diagnosed on a rear-wheel drive vehicle. The torque converter was separated from the flexplate and the vibration was eliminated. Which is the most likely cause?
- A worn or damaged pump assembly
  - A defective torque converter
  - A defective U-joint(s)
  - A worn extension housing bushing
53. Two technicians are discussing how to check a vacuum brake booster for proper operation. Technician A says that the brake pedal should be depressed and then the engine started. Technician B says that the vacuum booster is working normally if the booster is able to supply 2 or 3 assisted brake applications before becoming a hard to depress brake pedal. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B
54. What should be performed before adjusting the parking brake on a vehicle using front disc brakes and rear drum brakes?
- Check that the thickness of the front disc brake pads are with factory specifications
  - Check for proper adjustment of the rear drum brake shoes.
  - Check the brake fluid level
  - All of the above

55. Brake lines should be inspected for what faults?
- Leaks
  - Kinks
  - Rust
  - All of the above
56. Drive axle (differential case) fluid is usually \_\_\_\_\_.
- Engine oil (usually SAE 5W-30 or SAE 10W-30)
  - ATF
  - Gear lube (usually SAE 80W-90)
  - Any of the above
57. When checking for vent temperatures, where should the measurement be made?
- At the center outlets
  - At the outlet on the driver's side
  - At the defroster vents
  - At the passenger side AC vent
58. Typical maximum rotor lateral runout specifications are \_\_\_\_\_.
- 0.0003 to 0.0005 in. (0.008 to 0.013 mm)
  - 0.003 to 0.005 in. (0.08 to 0.13 mm)
  - 0.030 to 0.050 in. (0.8 to 1.3 mm)
  - 0.300 to 0.500 in. (8.0 to 13 mm)
59. A coil spring is correctly installed in a SLA-type of suspension system if \_\_\_\_\_.
- The two holes on the lower control arm are covered by the spring
  - The two holes are open in the lower control arm
  - One hole is covered and the other hole is open or just partially open
  - The spring tip shows at the upper spring mount
60. What type of grease should be used to lubricate the slides on a disc brake caliper?
- Wheel bearing grease
  - Chassis grease
  - Silicone grease
  - Any of the above
61. A vehicle equipped with gasoline direct injection (GDI), and an electronic throttle control system has a high idle speed (about 1,200 RPM) and will not accelerate any faster. This condition could be due to \_\_\_\_\_.
- A fault in the electronic throttle control system
  - A fault in the low pressure in-tank electric fuel pump
  - A fault with the high-pressure pump
  - A fault with the fuel pressure regulator

62. Which is the preferred method to bleed air from a power steering system?
- Raise the front wheel off the ground and turn the steering wheel lock to lock
  - Start the engine and allow to idle
  - Use a vacuum pump attached to the reservoir cap
  - Use a bleeding tool
63. Transfer cases use what lubricant?
- Automatic transmission fluid (ATF)
  - Special fluid
  - SAE 80W-90 gear lube
  - Any of the above depending on application
64. Technician A says that memory functions can be kept when disconnecting a battery by connecting a “memory saver” to the lighter plug on many vehicles. Technician B says that memory functions can be kept when disconnecting a battery by connecting a “memory saver” to the 16 pin diagnostic link connector (DLC) on 1996 and newer vehicles. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B
65. Technician A says that a low or zero reading on an ohmmeter indicates continuity. Technician B says that an ohmmeter set on the highest scale and reading infinity means no continuity. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B
66. A reading of 432 shows on the face of the meter set to the millivolt scale. The reading means \_\_\_\_\_.
- 0.432 volts
  - 4.32 volts
  - 43.2 volts
  - 4320 volts
67. When rotating tires/wheels using a modified “X” method on a front-wheel-drive vehicle, where should the right front wheel be placed?
- Right front
  - Right rear
  - Left front
  - Left rear

68. Where is the evaporator drain usually located?
- Behind the glove compartment
  - Under the vehicle on the passenger side
  - Under the hood near the AC compressor
  - Any of the above depending on make, model and year of vehicle
69. Which step is NOT usually done when disarming an airbag system?
- Removing the airbag modules from the vehicle
  - Removing the airbag fuse
  - Disconnecting the electrical connector to the airbag
  - Disconnecting the battery
70. A charging system output test indicates that the alternator is not supplying the specified output. Technician A says that the drive belt could be worn and causing the lower than normal output. Technician B says that the drive belt tensioner could be faulty. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B
71. When using a scan tool to retrieve diagnostic trouble codes (DTCs), the technician should also \_\_\_\_\_.
- Check monitor status
  - Check freeze frame data
  - Record any stored DTCs
  - All of the above
72. When replacing a water pump, be sure to \_\_\_\_\_.
- Torque all fasteners to factory specifications
  - Use a new gasket/ seal
  - Check that the accessory drive belt is properly aligned and adjusted to the proper tension
  - All of the above
73. Automatic transmission cooling lines are located \_\_\_\_\_.
- Between the transmission and the radiator
  - Between the transmission and the rear axle
  - Inside the transmission or transaxle
  - Inside the HVAC module
74. An ohmmeter reads OL. This means that the component or circuit being measured \_\_\_\_\_.
- Is open
  - Is shorted
  - Is grounded
  - Has low resistance

75. A fuel pump should be tested for all of the following *except*:
- Pressure
  - Volume
  - Current draw
  - Resistance
76. A TPMS relearn procedure involves performing the procedure starting with which tire?
- Right front
  - Right rear
  - Left front
  - Left rear
77. Which statement(s) is/are true?
- If the red brake warning light is on, this could indicate a fault with the hydraulic system
  - If the amber ABS warning light is on this indicates a fault with the ABS system
  - If the red brake warning light is on, the vehicle should not be test driven
  - Both a and c are correct
78. A technician performed an automatic transmission fluid service and refilled the unit with the incorrect automatic transmission fluid (friction modified instead of highly friction modified). Technician A says that the transmission will slip. Technician B says that shudder or harsher than normal shifts are likely to occur. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B
79. A squealing sound is heard and the sound changes when the driver exerts force on the clutch pedal. Technician A says the pilot bearing is defective. Technician B says the input shaft bearing is defective. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B
80. Technician A says that the backing plate should be lubricated with chassis grease on the shoe pads. Technician B says that the brakes will squeak when applied if the shoe pads are not lubricated. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B

81. Coolant should be tested for \_\_\_\_\_.
- Proper color
  - Freezing point (temperature)
  - Specific gravity
  - Both b and c
82. The edge code lettering on the side of brake friction material tells the technician \_\_\_\_\_.
- The coefficient of friction code
  - The quality of the friction material
  - The temperature resistance rating
  - All of the above
83. A technician is checking the charging system for low output. A voltage drop of 1.67 volts is found between the alternator output terminal and the battery positive terminal. Technician A says that a corroded connector could be the cause. Technician B says that a defective rectifier diode could be the cause of the voltage drop. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B
84. The air bag warning lamp flashes a few times when the vehicle is started and then stops flashing and goes out. This indicates \_\_\_\_\_.
- A fault has been detected in the air bag system
  - Normal self-test of air bag system
  - the air bag module requires recalibration
  - Any of the above depending on make model and year of vehicle
85. Wear indicator ball joints indicate that they are worn enough to need replacement in what location?
- a line near the attaching nut
  - a raised area around the grease fitting
  - A special type of rubber grease seal
  - Any of the above depending on manufacture
86. Before replacing the filter in an automatic transmission/transaxle, why should service information be checked first?
- The filter may not be replaceable unless the unit is disassembled
  - The filter may be a spin-on type filter
  - The pan may be required to be removed
  - Any of the above

87. A technician wants to check the current flow (amperes) in a circuit. What needs to be done?
- The circuit has to be disconnected and the meter leads connected in series with the circuit being tested
  - An inductive meter could be used to measure the current if attached to a wire in the circuit.
  - Set the meter to read DCA and then connect the meter leads to the positive and negative terminals of the battery.
  - Either a or b

88. CV Joint boots should be carefully inspected during routine service because they are made from \_\_\_\_\_ and can be torn or ripped allowing the grease to escape.
- Steel
  - Rubber or flexible plastic
  - Aluminum
  - Vinyl

89. A blower motor stopped working on all speeds. A technician tested the motor touching a jumper wire from the battery positive (+) terminal to the motor power terminal and the motor did run. Technician A says that the motor should be checked using a fused jumper lead to test for excessive current draw. Technician B says that the resistor pack and/or relay are likely to be defective. Which technician is correct?
- Technician A only
  - Technician B only
  - Both Technicians A and B
  - Neither Technician A nor B

90. The type of brake fluid recommended for use in the master cylinder is \_\_\_\_\_.
- DOT 3
  - DOT 4
  - DOT 4+ or LV
  - Any of the above depending on the vehicle

91. The technician can test for trapped air (non-condensable gases) inside the refrigerant container by \_\_\_\_\_.
- Checking the outside of the container for frost
  - Checking the pressure versus temperature of the container
  - Weighing the container
  - Sending the container to a special laboratory for analysis

92. Two technicians are discussing installation of a tie rod end to the steering knuckle. Technician A says to tighten the nut to specifications if a prevailing torque nut. Technician B says to tighten a cotter key-type nut to specifications and then tighter if necessary if the cotter keyhole does not line up. Which technician is correct?
- Technician A only
  - Technician B only

- c. Both Technicians A and B
- d. Neither Technician A nor B

93. The discharge air temperature is cool with higher than normal low side pressure along with excess high side pressure. Which represents the *most likely* cause?

- a. Low on refrigerant
- b. Clogged condensate drain
- c. Excess refrigerant in the system
- d. Lack of airflow through the condenser

94. Technician A says that during a power balance test, the cylinder that causes the biggest RPM drop is the weak cylinder. Technician B says that if one spark plug wire is grounded out and the engine speed does not drop, a weak or dead cylinder is indicated. Which technician is correct?

- a. Technician A only
- b. Technician B only
- c. Both Technicians A and B
- d. Neither Technician A nor B

95. A disc brake caliper does not move and one of the pads is worn more than the other.

- a. Normal for disc brakes
- b. The caliper piston is likely to be stuck
- c. The caliper slides are likely to be stuck
- d. The caliper dust shield could be leaking and causing this condition

96. An engine produces less than normal power and is slow to accelerate when the throttle is opened. Technician A says that the exhaust system could be restricted. Technician B says the valve timing may be retarded. Which technician is correct?

- a. Technician A only
- b. Technician B only
- c. Both Technicians A and B
- d. Neither Technician A nor B

97. A vehicle being tested has a key-off battery drain that exceeds specifications. Technician A says that the fuses should be removed one at a time until the excessive drain is eliminated thereby pinpointing the circuit. Technician B says a short finder should be used to locate the source of the draw. Which technician is correct?

- a. Technician A only
- b. Technician B only
- c. Both Technicians A and B
- d. Neither Technician A nor B



98. One rear taillight does not work and a test light is being used to check for voltage at a taillight socket. Technician A says that the alligator clip on the test light should be attached to a good ground before testing. Technician B says that the lights should be turned on before testing the socket terminal. Which technician is correct?

- a. Technician A only
- b. Technician B only
- c. Both Technicians A and B
- d. Neither Technician A nor B

99. A customer was concerned about a vibration felt during acceleration only. Technician A says that a defective fuel injector could be the cause. Technician B says that a defective spark plug wire or coil on a coil-on-plug system could be the cause. Which technician is correct?

- a. Technician A only
- b. Technician B only
- c. Both Technicians A and B
- d. Neither Technician A nor B

100. Technician A says that oil should be squirted into all of the cylinders before taking a compression test. Technician B says that if the compression greatly increases when some oil is squirted into the cylinders, it indicates defective or worn piston rings. Which technician is correct?

- a. Technician A only
- b. Technician B only
- c. Both Technicians A and B
- d. Neither Technician A nor B

