

APPLICATION FOR PLUMBER/HVAC TECHNICIAN CERTIFICATE

**LIQUIFIED COMPRESSED GAS DIVISION
MISSISSIPPI STATE FIRE MARSHAL OFFICE
P.O. BOX 79
JACKSON, MS 39205-0079**

DATE _____

APPLICANT			BUISSINESS		
ADDRESS			ADDRESS		
CITY	STATE	ZIP	CITY	STATE	ZIP

LC Gas Inspector Administering Test _____

PASSED _____ FAILED _____ SCORE _____

PLUMBER _____ HVAC TECHNICIAN _____

1. Which of the following is an important characteristic of LP-Gas? _____
 - A. It vaporizes into gases when container pressure drops
 - B. It boils at 44 degrees Fahrenheit
 - C. It has an odor
 - D. It is lighter than air

2. Propane's volume, pressure, and physical state depends on: _____
 - A. The atmospheric pressure.
 - B. How it is stored.
 - C. The temperature of the surrounding environment.
 - D. A and C
 - E. B and C

3. If you suspect a gas leak: _____
 - A. Leave the area immediately
 - B. Get the system checked by the gas company
 - C. Shut the gas off
 - D. All of the above

4. One way to identify when a gas piping system is not sized properly is to conduct a system flow pressure and lock up test. _____
- A. True
 - B. False
5. When planning the installation of HVAC equipment, you should consider specific distance requirements of propane containers from: _____
- A. Appliance vents.
 - B. Sources of ignition.
 - C. The type of siding on the structure.
 - D. The type of LP Gas Tank.
 - E. A and B
 - F. A and D
6. Type B-vents and type L-vents must have the following clearance: _____
- A. 6 inches
 - B. 3 inches
 - C. 1 inch
 - D. 8 inches
7. Install an appliance in a residential garage so that all burners and burner ignition devices are at least how many inches above the floor? _____
- A. 6 inches
 - B. 9 inches
 - C. 18 inches
 - D. 24 inches
8. Check the nameplate on each dedicated propane appliance to be sure it says the appliance is to be used with: _____
- A. Any type of Gas
 - B. Natural Gas or LP Gas
 - C. Propane or Butane
 - D. Propane or LP Gas
9. A dedicated appliance can be used with either propane or natural gas. _____
- A. True
 - B. False

10. To ensure that an appliance has been converted for use with propane, look at the appliance name plate and look for a conversion sticker with the letters "P," "LP," or the word "propane" on the: _____
- A. Back of the nameplate
 - B. Appliance gas control or regulator
 - C. Manufactures' instructions
 - D. Propane tank
11. Some common interior piping materials include: _____
- A. Steel, copper, CSST
 - B. Steel, polyethylene, copper
 - C. CSST, polyethylene, cast-iron
 - D. Steel, copper, cast-iron
12. Piping supports must be _____ to prevent undue strains on connected appliances and equipment, and cannot be supported by other piping. _____
- A. Painted
 - B. Anchored
 - C. Tied
 - D. Protected
13. Automatically operated appliances do not require a sediment trap. _____
- A. True
 - B. False
14. Appliance connectors come in an array of materials and styles, including: _____
- A. CSST
 - B. Semi-rigid metallic tubing and fittings
 - C. Rigid metallic pipes and fittings
 - D. All of the above
15. With a limited number of exceptions, what is the maximum design operating pressure for piping systems located inside buildings? _____
- A. 20 psi
 - B. 10 psi
 - C. 5 psi
 - D. 2 psi

16. What is the main purpose of flexible appliance connectors? _____
- A. To help the flow of gas to the appliance
 - B. To prevent damage to the appliance
 - C. It is more economical for the consumer
 - D. To prevent breakage of the connection from the ridged piping
17. A _____ checks for propane leaks at the exterior portion of the piping. _____
- A. Pressure Test
 - B. Regulator Test
 - C. Water Manometer Test
 - D. Appliance Test
18. When conducting a pressure test on a new system, only _____ can be used. _____
- A. Natural Gas
 - B. Inert Gases or Air
 - C. Propane
 - D. Water
19. When is a leak test performed? _____
- A. When a regulator is replaced
 - B. When an appliance is replaced
 - C. Every time gas is delivered to the customer
 - D. B and C
 - E. A and B
20. It is not necessary to remove or purge the air or inert gas from the piping system after performing a pressure test in order to place the appliances in service with propane. _____
- A. True
 - B. False
21. There are two basic forms of burner ignition devices or pilots: _____
- A. Manual ignition and performance ignition
 - B. Electronic ignition and manual ignition
 - C. Standing pilot and Electronic ignition
 - D. Standing pilot and manual ignition

22. What is connected to the pressure tap on the outlet side of the appliance to check the manifold pressure? _____

- A. Manometer
- B. Pressure Gauge
- C. Regulator
- D. Sediment Gauge

23. Although a flame that is burning properly is typically blue, some appliances are designed to burn yellow flames for decorative purposes. _____

- A. True
- B. False

24. What can be formed by incomplete combustion or flame impingement? _____

- A. Carbon dioxide
- B. Carbon monoxide
- C. Aldehydes
- D. None of the above
- E. A and C
- F. B and C

25. Name three (3) types of safety devices designed to shut off an appliance if unsafe conditions exist:

1. _____
2. _____
3. _____

26. What is the final test before placing an appliance into operation? _____

- A. Pressure test
- B. Leak test
- C. Spillage test
- D. Manifold test

27. What is the smallest metallic piping that can be used if there is 11" W.C., 65' total run and a 175,000 BTU total load? _____

- A. ½"
- B. ¾"
- C. 1"
- D. 1 ½"

28. What is the smallest CSST that can be used if there is 245' total run, 2 PSI and a 425,000 BTU total load? _____
- A. $\frac{3}{4}$ " (25 EHD)
 - B. $\frac{1}{2}$ " (18 EHD)
 - C. 1" (30 EHD)
 - D. 1" (31 EHD)
29. What is the smallest copper tubing that can be used if there is 2 PSI, 85' total run and a 510,000 BTU total load? _____
- A. $\frac{3}{4}$ "
 - B. $\frac{1}{2}$ "
 - C. $\frac{5}{8}$ "
 - D. $\frac{3}{8}$ "
30. How many feet from the appliance must the manual shut off valve be located? _____
- A. 3'
 - B. 6'
 - C. 9'
 - D. 12'

The following questions are fill in the blank and will reference NFPA 54 – National Fuel Gas Code:

31. CSST piping systems shall be installed in accordance with NFPA 54 codes and _____ . *Reference NFPA 54 (7.2.7).*
32. CSST gas piping systems, and gas piping systems containing one or more segments of CSST, shall be _____ and bonded to the electrical service grounding electrode system or, where provided, lightning protection grounding electrode system. *Reference NFPA 54 (7.12.2).*
33. Arc-resistant jacketed CSST shall be considered to be _____ when it is connected to appliances that are connected to the appliance grounding conductor of the circuit supplying that appliance. *Reference NFPA 54 (7.12.3).*

34. Piping installed aboveground shall be _____ and located where it will be _____ from physical damage. Where passing through an exterior wall, the piping shall be protected from _____ by _____ with an inert material approved for such applications. The piping shall be sealed around its _____ at the point of the exterior penetration to prevent the entry of water, insects, and rodents. Where piping is encased in a _____, the annular spaces between the gas piping and the sleeve and between the sleeve and the wall opening shall be sealed. *Reference NFPA 54 (7.2.1).*

35. Piping shall be _____ with metal pipe hooks, metal pipe straps, metal bands, metal brackets, metal hangers, or building structural components suitable for the size of piping, of adequate strength and quality, and located at intervals so as to prevent or damp out _____. Spacing of supports of CSST shall be in accordance with the _____. *Reference NFPA 54 (7.2.6.1 and 7.2.6.2).*