

Gas Codes & Installation Exam Sampler

Directions: This is a sample exam for your use as you go through the codes section of this program. The idea is to allow you to find the answers as we go along. To best use this sampler scan the entire sample exam and then as we cover the codes, note the correct answer as we get to them.

List specific Gravity for:

Air: _____
Natural Gas: _____
Propane: _____
Methane: _____
C3H8: _____
CH4: _____

List BTU content for:

1 Cu. Ft. of Natural Gas: _____
1 Cu. Ft. of Propane: _____
1 Cu. Ft. of Methane: _____
1 Gallon of #2 Fuel Oil: _____
1 Cu. Ft. of CH4: _____
1 Cu. Ft. of C3H8: _____

Define a "Therm" _____

What pressure is Natural Gas burned at? _____

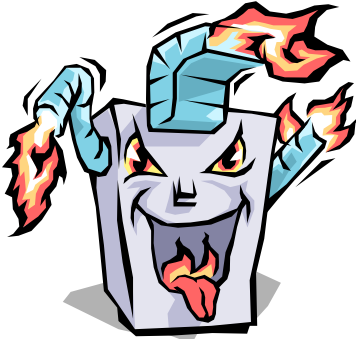
What pressure is Propane burned at? _____

What pressure is Methane burned at? _____

What pressure is CH3 burned at? _____

What pressure is C3H8 burned at? _____

What does LPG stand for? _____



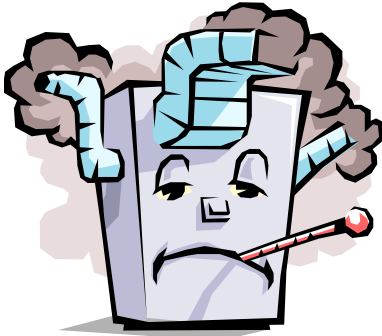
True or False:

Directions: Choose the correct response by circling either T for True or F for False.

- T F 1. An accessible shut off valve may be within 10' of a furnace.
- T F 2. Ground joint unions may be used at meters.
- T F 3. Unlisted appliances require a special permit.
- T F 4. In sizing gas piping, a pressure drop of .05"WC is permissible?
- T F 5. An unsafe condition only needs to be reported to the building department.
- T F 6. The minimum size of gas pipe inlet for a mobile home is $\frac{3}{4}$ ".
- T F 7. Un-vented gas heaters may be used in bedrooms.
- T F 8. The alternate method of venting may be used for category I appliances.
- T F 9. The maximum length of approved flexible duct connectors for dryers is 6'.
- T F 10. Type BW gas vent must terminate 5' from the bottom of a wall furnace.
- T F 11. Return air from one dwelling shall not be discharged into another dwelling.
- T F 12. Return air inlet for a house may be screened with 1" screen.
- T F 13. Purple primer shall be used on CPVC.
- T F 14. Ratings of gas appliances are based on sea-level operation and are good up to 2000' elevation.
- T F 15. Upon start-up a natural draft gas appliance, a draft hood check with a match is done before the primary air is adjusted.

- T F 16. Fan assisted furnaces may be vented into an inside chimney without a draft hood appliance.
- T F 17. Combustion air is not required for a direct vent appliance.
- T F 18. Combustion air from outside the structure requires screening by a ¼ " mesh screen.
- T F 19. Piping from a T&P valve on a hot water tank shall terminate between 6" and 24" from the floor.
- T F 20. The minimum distance from a vent cap and the roof for a 6" vent is 24 inches.
- T F 21. The minimum height from the top of a chimney to the roof is 3'
- T F 22. 30 gauge single wall vent is legal.
- T F 23. A low water cut off is required on a residential boiler only.
- T F 24. All hot water tanks shall be set at 130 degrees F by the installer.
- T F 25. Listed appliance flex connectors shall have an overall length not to exceed 3' for hot water tanks.
- T F 26. Bracket chimneys are an approved venting system.
- T F 27. A type II clothes dryer is a residential clothes dryer.
- T F 28. One therm equals 100,000 BTUs.
- T F 29. Air at sea level is 21% oxygen.
- T F 30. A duct furnace always has a fan for circulation across the heat exchanger.
- T F 31. A manometer is used to measure the pressure of gas or vapors.
- T F 32. 7" of WC equals ½ PSIG.
- T F 33. Mobile homes are regulated by the City building department.
- T F 34. Primary air may be adjusted.
- T F 35. 1 cubic foot of natural gas equals 10,000 BTUs.
- T F 36. A furnace vent shall terminate not less than 12" above the highest point where it passes through the roof.

- T F 37. The minimum size gas piping allowed is 3/8 inch.
- T F 38. Type L vent shall terminate not less than 12 feet above the bottom of wall furnace.
- T F 39. All gas piping below ground shall be buried at least 12 inches.
- T F 40. Pipe dope shall be applied to the female threads of gas piping.



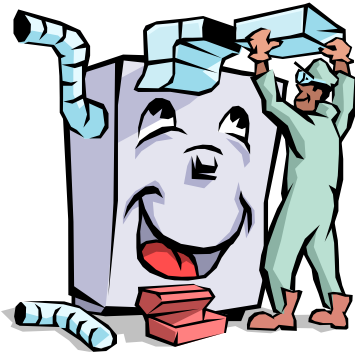
Fill in the blanks:

Directions: Fill in the blank with the correct response considering the proper completion of the sentence.

41. If gas service is discontinued for _____ consecutive months, the piping shall be re-tested.
42. Gas meters shall not be located closer than ____ feet from a mechanical fresh air intake.
43. All welding of gas lines shall be done by a _____ welder.
44. Gas appliances installed in garages must be _____ inches above the floor, measured from the bottom of the furnace.
45. Overhead radiant heaters shall be a minimum of _____ feet above the floor.
46. A _____ inch clearance is required in front of gas appliances.
47. The distance from an attic access opening and the appliance shall not exceed _____ feet.
48. The minimum access opening for a crawl space is _____ inches by _____ inches.

49. Combustion air ducts extending into an attic shall be _____ inches above joists or insulation.
50. Listed flexible gas connectors for dryers or ranges shall not exceed _____ feet.
51. The minimum pressure test for gas piping under $\frac{1}{2}$ PSIG shall hold _____ pressure for _____ minutes.
52. The CO₂ on a conversion burner should be set between _____% and _____%.
53. A commercial dryer is a type _____.
54. The specific gravity of natural gas is _____.
55. Natural gas ignites between and _____ and _____ degrees.
56. Operating instructions shall be left with the _____.
57. Vent terminations shall be _____ inches above the ground.
58. Venting systems shall terminate not less than _____ inches above a window.
59. Screws shall not penetrate the _____ liner of type B or BW vent.
60. Category I appliances operate with _____ pressure.
61. _____ inch clearance to combustibles is required for B vent.
62. Combustion air taken from outside shall be brought to within _____ inches of the floor and ceiling.
63. Required outside air inlets shall be covered with screen having _____ inch openings.
64. Bushings shall not be used in _____ locations.
65. A permanent electric outlet and _____ fixture is required for attic installations.
66. The minimum free area for through the wall combustion air openings is _____ square inches.
67. The minimum vent height listed in the GAMA tables is _____ feet.

68. Clearance to combustibles for single wall pipe is ____ inches.
69. On conversion burners the CO shall not exceed ____%.
70. Two 45° elbows are equal to _____ 90° elbows.
71. Vent connectors shall have a minimum ____ inch per foot slope.
72. The minimum size vent connector allowed is ____ inch.
73. Sealed combustion appliances derive all air from ____ the structure.
74. A sediment ____ is required at all appliances.
75. Less than ____% oxygen or listening to more of these codes may cause sickness or death.



Multiple Choice Questions:

Directions: Choose and circle the one correct response for each question from the choices listed below each question.

76. Exit terminals for forced draft gas appliances at public walkways shall be
- a. 10 feet above grade
 - b. 7 feet above grade
 - c. 6 feet above grade
 - d. 12 inches above grade
77. Vent connectors shall enter ____ inches above the bottom of a chimney.
- a. 24 inches
 - b. 36 inches

- c. 12 inches
- d. 6 inches

78. Allowable gas pressure drop from the meter to the farthest appliances is

- a. 1.5 inches WC
- b. .5 inches WC
- c. 1.0 inches WC
- d. 2.0 inches WC

79. What is the pressure of natural gas normally delivered at the meter outlet?

- a. 5 inches WC
- b. 11 inches WC
- c. 7 inches WC
- d. 2 psig

80. All gas-fired equipment requires at least ____ inches clearance on all sides.

- a. 24 inches
- b. 30 inches
- c. 36 inches
- d. 42 inches

81. Rooftop units (RTU's) require.....

- a. an electric outlet within 25 feet of the TRU
- b. a light fixture at the RTU
- c. two manual shutoff valves
- d. an electric outlet and light fixture within 25 feet of the RTU

82. An approved listed flexible connector may be used to connect a gas appliance provided the connector does not exceed ____, except range or dryer connectors may not exceed_____.

- a. 1 foot / 2 feet
- b. 2 feet / 4 feet
- c. 3 feet / 6 feet
- d. 4 feet / 8 feet

83. All appliances installed in a garage must be elevated ____ above the floor.

- a. 6 inches
- b. 12 inches
- c. 1.5 feet
- d. 24 inches
- e. 18 inches

84. A single wall C-vent connector requires a minimum _____ clearance to combustibles.

- a. 3 inches
- b. 6 inches
- c. 9 inches
- d. 12 inches

85. Combustion air openings shall have corrosion resistant screen of _____ mesh.

- a. 1/8 inch
- b. 1/4 inch
- c. 3/8 inch
- d. 1/2 inch
- e.

86. _____ are allowed in a combustion air duct.

- a. Motorized dampers
- b. Volume dampers
- c. Fire dampers

87. A gas furnace requires a minimum of _____ return air per 1000 BTUs of output.

- a. 1 Sq. In.
- b. 2 Sq. In.
- c. 3 Sq. In.
- d. 4 Sq. In.

88. A heat pump requires a minimum of _____ return air per 1000 BTUs of output.

- a. 2 Sq. In.
- b. 4 Sq. In.
- c. 6 Sq. In.
- d. 8 Sq. In.

89. Return air cannot be taken closer than _____ from the combustion chamber.

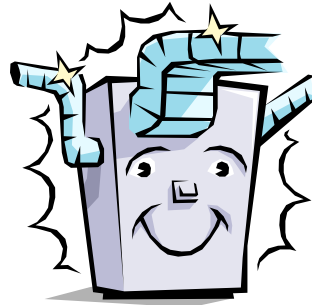
- a. 2 feet
- b. 5 feet
- c. 10 feet
- d. 3 feet

90. An attic furnace shall be within _____ of the access opening.

- a. 10 feet
- b. 20 feet
- c. 30 feet
- d. 40 feet

91. An attic furnace shall be provided with a _____ wide walkway from the access opening to the service side of the furnace.
- 12 inches
 - 18 inches
 - 24 inches
 - 30 inches
 - 36 inches
92. A furnace in a crawlspace must be within _____ of the access opening.
- 5 feet
 - 10 feet
 - 20 feet
 - 30 feet
93. Gas logs require the vent damper of the fireplace to be blocked open _____ per 2000 BTUs input of the gas log.
- 1 Sq. In.
 - 2 Sq. In.
 - 3 Sq. In.
 - 4 Sq. In.
94. Gravity venting systems shall not have offsets greater than _____ except one _____ offset may be allowed.
- 10 degrees / 30 degrees
 - 30 degrees / 45 degrees
 - 45 degrees / 60 degrees
 - 60 degrees / 75 degrees
95. Vent connectors shall have a continuous rise of _____ per foot.
- 1/8 inch
 - 1/4 inch
 - 1/2 inch
 - 1 inch
96. Any gas piping which is disconnected from an appliance shall be _____.
- turned off at the appliance shutoff valve
 - provided with a gas-tight nipple and cap
 - pipede to the outside
 - turned off at the appliance shutoff valve and the end of the valve shall be sealed with a plug, nipple, or cap
97. Specific gravity of natural gas is _____.
- heavier than air
 - lighter than air
 - heavier than propane
 - heavier than butane

98. The heating value of natural gas is _____.
- a. the same as propane
 - b. greater than propane
 - c. less than propane
 - d. greater than butane
99. If the free area through a metal louver is not known it may be assumed to have a free area of _____.
- a. 20% - 25%
 - b. 40% - 50%
 - c. 50% - 60%
 - d. 60% - 75%
100. The heating value of propane is _____ per cubic foot.
- a. 2550 BTUs
 - b. 3000 BTUs
 - c. 3550 BTUs



All done, do you feel better now?