

Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

1. When using a torch to braze a fitting, the technician should use the proper size ____, wear ____, and always have a ____ nearby.
 - a. copper pipe, insulated boots, fire extinguisher
 - b. torch tip, insulated boots, protective fire shield
 - c. torch tip, safety glasses, fire extinguisher
 - d. acetylene tank, safety glasses, bucket of water

2. All air characteristics charts and tables are based on a sea level pressure of ____.
 - a. 29.41" Hg
 - b. 29.69" Hg
 - c. 29.86" Hg
 - d. 29.92" Hg

3. Air conditioning and refrigeration reversible ratchet wrenches are used to ____.
 - a. tighten hex head sheet metal screws
 - b. tighten flare nuts
 - c. open and close refrigerant service valves
 - d. tighten nuts that cannot be reached with other wrenches

4. A fusible plug is a metal fitting that has a hole drilled through it and the hole is filled with ____.
 - a. material with a low melting point
 - b. plastic
 - c. copper fused with brass
 - d. a metal alloy that will burn when overheated



5. A gauge and manifold assembly used in refrigeration work may include ____.
 - a. compound gauge, standard gauge, manifold, valves and hoses
 - b. either two or four valves
 - c. a four-way valve design using a shutoff valve for each hose
 - d. all of the above

6. The halide leak detector ____.
 - a. detects nitrogen leaks in the refrigeration system
 - b. is used to detect water leaks in a chilled water system
 - c. detects refrigerant leaks in a refrigeration system
 - d. detects air leaks in duct systems

7. A sling psychrometer ____.
 - a. measures the dry-bulb and wet-bulb temperatures of air
 - b. measures the air velocity through a duct
 - c. uses a microprocessor to provide information for proper air balance
 - d. measures the quantity of air, in cfm, flowing through a duct

8. Comfort can be described as the gentle balance between ____.
 - a. air cleanliness, air movement, temperature, and humidity
 - b. air velocity, air cleanliness, humidity, and air movement
 - c. air speed, air velocity, temperature, and humidity
 - d. acceleration, air cleanliness, filtration, and humidity



9. Which of the following statements is correct when referring to large refrigerant or nitrogen tanks?
 - a. The protective cap must be on when the tank is not in use.
 - b. Safety goggles or glasses must be worn when moving the tank.
 - c. Large tanks should not be carried, they should be secured to an approved cart.
 - d. All of the above are correct.

10. When it is necessary to perform electrical work in an area that has a damp or wet floor, which of the following can be done to minimize the chance of electrical shock?
 - a. Place a rubber mat on the floor.
 - b. Use a wooden ladder.
 - c. Wear insulated boots and gloves.
 - d. All of the above

11. A fresh air intake is necessary to keep the indoor air from becoming ____.
 - a. too humid
 - b. superheated
 - c. oxygen starved and stagnant
 - d. too dry

12. The dry-bulb temperature is the ____.
 - a. same as the wet-bulb temperature
 - b. total of the sensible and latent heat
 - c. sensible heat level of the air
 - d. sensible heat less the humidity



13. The density of air is the ____.
 - a. amount of moisture in the air
 - b. amount of movement in the air per cubic foot
 - c. weight of the air per cubic foot
 - d. combination of the temperature and pressure of the air

14. An R-22 cylinder containing enough refrigerant to have liquid refrigerant in it, is in a truck with a temperature of 120°F. What would be the psig pressure in the cylinder?
 - a. 255.7 psig
 - b. 259.9 psig
 - c. 267.0 psig
 - d. 271.5 psig

15. A wiring and crimping tool is used to ____.
 - a. crimp tubing
 - b. cut and strip wire
 - c. staple low voltage wire
 - d. fasten insulation to duct



REFRIGERANT					REFRIGERANT					REFRIGERANT				
TEMP					TEMP					TEMP				
°F	12	22	134a	502	°F	12	22	134a	502	°F	12	22	134a	502
-60	19.0	12.0		7.2	12	15.8	34.7	13.2	43.2	42	38.8	71.4	37.0	83.8
-55	17.3	9.2		3.8	13	16.4	35.7	13.8	44.3	43	39.8	73.0	38.0	85.4
-50	15.4	6.2		0.2	14	17.1	36.7	14.4	45.4	44	40.7	74.5	39.0	87.0
-45	13.3	2.7		1.9	15	17.7	37.7	15.1	46.5	45	41.7	76.0	40.1	88.7
-40	11.0	0.5	14.7	4.1	16	18.4	38.7	15.7	47.7	46	42.6	77.6	41.1	90.4
-35	8.4	2.6	12.4	6.5	17	19.0	39.8	16.4	48.8	47	43.6	79.2	42.2	92.1
-30	5.5	4.9	9.7	9.2	18	19.7	40.8	17.1	50.0	48	44.6	80.8	43.3	93.9
-25	2.3	7.4	6.8	12.1	19	20.4	41.9	17.7	51.2	49	45.7	82.4	44.4	95.6
-20	0.6	10.1	3.6	15.3	20	21.0	43.0	18.4	52.4	50	46.7	84.0	45.5	97.4
-18	1.3	11.3	2.2	16.7	21	21.7	44.1	19.2	53.7	55	52.0	92.6	51.3	106.6
-16	2.0	12.5	0.7	18.1	22	22.4	45.3	19.9	54.9	60	57.7	101.6	57.3	116.4
-14	2.8	13.8	0.3	19.5	23	23.2	46.4	20.6	56.2	65	63.8	111.2	64.1	126.7
-12	3.6	15.1	1.2	21.0	24	23.9	47.6	21.4	57.5	70	70.2	121.4	71.2	137.6
-10	4.5	16.5	2.0	22.6	25	24.6	48.8	22.0	58.8	75	77.0	132.2	78.7	149.1
-8	5.4	17.9	2.8	24.2	26	25.4	49.9	22.9	60.1	80	84.2	143.6	86.8	161.2
-6	6.3	19.3	3.7	25.8	27	26.1	51.2	23.7	61.5	85	91.8	155.7	95.3	174.0
-4	7.2	20.8	4.6	27.5	28	26.9	52.4	24.5	62.8	90	99.8	168.4	104.4	187.4
-2	8.2	22.4	5.5	29.3	29	27.7	53.6	25.3	64.2	95	108.2	181.8	114.0	201.4
0	9.2	24.0	6.5	31.1	30	28.4	54.9	26.1	65.6	100	117.2	195.9	124.2	216.2
1	9.7	24.8	7.0	32.0	31	29.2	56.2	26.9	67.0	105	126.6	210.8	135.0	231.7
2	10.2	25.6	7.5	32.9	32	30.1	57.5	27.8	68.4	110	136.4	226.4	146.4	247.9
3	10.7	26.4	8.0	33.9	33	30.9	58.8	28.7	69.9	115	146.8	242.7	158.5	264.9
4	11.2	27.3	8.6	34.9	34	31.7	60.1	29.5	71.3	120	157.6	259.9	171.2	282.7
5	11.8	28.2	9.1	35.8	35	32.6	61.5	30.4	72.8	125	169.1	277.9	184.6	301.4
6	12.3	29.1	9.7	36.8	36	33.4	62.8	31.3	74.3	130	181.0	296.8	198.7	320.8
7	12.9	30.0	10.2	37.9	37	34.3	64.2	32.2	75.8	135	193.5	316.6	213.5	341.2
8	13.5	30.9	10.8	38.9	38	35.2	65.6	33.2	77.4	140	206.6	337.2	229.1	362.6
9	14.0	31.8	11.4	39.9	39	36.1	67.1	34.1	79.0	145	220.3	358.9	245.5	385.0
10	14.6	32.8	11.9	41.0	40	37.0	68.5	35.1	80.5	150	234.6	381.5	262.7	408.4
11	15.2	33.7	12.5	42.1	41	37.9	70.0	36.0	82.1	155	249.5	405.1	280.7	432.9



Answer Section

MULTIPLE CHOICE

1. C
2. D
3. C
4. A
5. D
6. C
7. A
8. A
9. D
10. D
11. C
12. C
13. C
14. B
15. B