

MAINTENANCE SKILLS TEST

AIR CONDITIONING/REFRIGERATION

1. The Condenser is part of the:
 - a. High side
 - b. Low side
 - c. Neither one
2. How many BTU's are in a "ton"?
 - a. 16,000
 - b. 10,000
 - c. 12,000
3. Taking heat out of the air will _____ the air temperature?
 - a. Raise
 - b. Lower
 - c. Stabilize
4. A fan (or cooling) relay is used in an electric furnace to change the blower speed to the _____ speed for cooling.
 - a. High
 - b. Medium
 - c. Low
5. Why is an electric furnace insulated?
 - a. Fire protection
 - b. Prevent ambient temperature infiltration
 - c. Sound proofing
6. Why do we use capacitors on fan motors or blowers?
 - a. To raise efficiency and lower cost
 - b. To protect unit from overload
 - c. To reduce electric shock
7. How would you access control stage 1 and stage 2 of a two staged electric furnace?
 - a. Manually
 - b. Sequencer
 - c. 2 stage thermostat
8. A heat anticipator should be set to match the amp draw of all the heat relay controls in the control circuit.
 - a. True
 - b. False
9. What kind of head pressure would you experience if the condenser fan motor became inoperative?
 - a. No effect
 - b. Very low
 - c. Very high
10. Why is there a delay in re-starting a compressor that has kicked off an internal overload?
 - a. Breaker tripped
 - b. Unit must cool off
 - c. Sequencer out of sequence
11. What is the function of a crankcase heater?
 - a. To prevent crankcase from cracking in freezing temperatures
 - b. To preheat freon making heating cycle ore efficient
 - c. To heat the refrigerant oil and keep liquid freon out of the oil
12. Three Letters on the compressor terminal blocks are:
(List on answer sheet)

13. When charging, liquid should be added to the _____ side of the compressor.
 - a. High
 - b. Low
 - c. Suction
14. When charging, vapor should be added to the _____ side of the compressor.
 - a. Low
 - b. High
 - c. Liquid
15. What is one purpose of shut-off valves on the compressor during installation and when servicing.
 - a. To allow you to overheat the compressor to check for leaks
 - b. To allow the freon to be saved when service work is being done on the unit.
 - c. To regulate or shut off electric current to condenser
16. A normal air flow temperature from an air conditioning unit is from 25 to 30 degrees difference in the air temperature from the inside vent and the outside ambient temperature.
 - a. True
 - b. False
17. What is an air diffuser?
 - a. Part of a heat strip
 - b. Part of a dishwasher
 - c. The control for an outside lighting system
 - d. A vent with an open / shut control
 - e. Non of the above
18. If the suction side of a condensing unit has ice on it, what does this usually mean?
 - a. The compressor isn't running
 - b. The unit is undercharged
 - c. The unit is overcharged
 - d. None of the above
19. What is a squirrel cage blower used for?
 - a. To move air through air handler
 - b. To cool circulation pumps
 - c. To exhaust hot air from a dishwasher
 - d. To keep the compressor on a refrigerator cool
 - e. None of the above
20. Which side of the compressor would you charge?
 - a. The low side
 - b. The high side
 - c. None of the above
21. The start contractor's basic shape is:
 - a. Round
 - b. Square
 - c. Oval
 - d. None of the above
22. A run capacitor's basic shape is:
 - a. Round
 - b. Square
 - c. Oval
 - d. None of the above

23. How long should you pull a vacuum on normal change-out of compressor or condenser.
- 12 days
 - 1 day
 - 1 hour
 - None of the above
24. If a unit runs low head and high back pressure, what is the matter?
- Dirty
 - Overcharged
 - Bad compressor
 - None of the above
25. What instrument is used to check the full load amps of a compressor?
- Set gauges
 - Volt meter
 - Ohm meter
 - None of the above
26. What kind of freon is used in a central air conditioning system?
- R-12
 - R-11
 - R-22
27. What is the approximate pressure of an air conditioning unit on a 90 degree day?
- | <u>Suction</u> | <u>Head</u> |
|----------------|-------------|
| a. 80 | 120 |
| b. 65 | 270 |
| c. 60 | 300 |
| d. 50 | 265 |
28. Why do you use a vacuum pump on an air conditioning unit?
- To remove the freon
 - To remove the impurities
 - To remove the gas
 - To remove the oil
29. Why should you pull a vacuum?
- Check for leaks
 - Remove impurities
 - Extend the life of the unit
 - All of the above
30. What is the purpose of a cap (capillary) tube?
- To vent excess air out of conditioned space
 - To meter refrigerant to the evaporator
 - To keep the condenser from becoming overcharged
 - All of the above
31. The central (split system) a/c unit has been in for many years. The condenser unit is on the ground, outside the apartment. A pressure check has indicated an excessively high head pressure. What is usually the problem?
- Dirty condenser coil
 - Possible partial line restriction
 - Overcharged with refrigerant
 - All of the above
 - None of the above
32. What kind of freon would you suggest we use in an apartment food freezer/refrigerator (electric)?
- No 12
 - No. 22
 - No. 302

33. Ice up evaporator is usually a sign of insufficient air through evaporator coils or:
 - a. Low charge
 - b. High charge
 - c. None of the above

34. What are the two purposes of the drier?
 - a. Remove moisture/trap debris
 - b. Evaporate water from outside compressor during rain
 - c. Heat air and gas to increase efficiency

35. On a day of 95 degrees what will be approximate gauge pressure on low side if uit is proerly gassed on a central system?
 - a. 60-65
 - b. 160-165
 - c. 80-90

36. What color is the high side gauge?
 - a. Red
 - b. Blue
 - c. Green
 - d. White

APPLIANCES

1. On which appliance would a hot wire relay be used?
 - a. Stove
 - b. Refrigerator
 - c. Dishwasher
 - d. Water heater
 - e. None of the above

2. Where are most reset buttons located for a garbage disposal?
 - a. In the breaker box
 - b. On the outlet nearest to the disposal
 - c. Under the sink near the disposal
 - d. On the disposal
 - e. None of the above

3. If a dishwasher hums, but will not run, the probable cause of this will be:
 - a. The fill valve solenoid is malfunctioning
 - b. The seal is frozen
 - c. The oscillator is broken
 - d. The timer is malfunctioning
 - e. None of the above

4. A refrigerator requires what type of gas?
 - a. Freon 22
 - b. Freon 12
 - c. Freon 13
 - d. None of the above

5. You have a complaint from an apartment that is about five years old. Water is running out from under the dishwasher. The water continually runs. You have checked the pipes and one of them is leaking. What is NOT the problem?
 - a. Bad door gasket
 - b. Bad pump
 - c. Water control valve malfunction
 - d. Bad timer

6. The heat in an oven cannot be controlled. Possible problem:
 - a. Electricity off
 - b. Bad switch
 - c. Bad thermostat
7. How would you check a burner that would not come on?
 - a. Ohm out
 - b. Check breaker
 - c. Change with new burner
 - d. All of the above

PLUMBING

1. Where would you find a flapper?
 - a. In a heating unit
 - b. In a dishwasher
 - c. In a commode
 - d. In a water heater
 - e. None of the above
2. An apartment is a 40-gallon water heater has hot water, but not enough even if unused all day. Which element being broken would you give those symptoms?
 - a. Top
 - b. Bottom
3. Water is continually running out for under the wall behind the commode. What could be the problem?
 - a. Cut off valve leaking
 - b. Break or leak in the supply line
 - c. Ballcock damaged
4. Apartment #2 is under apartment #12. The occupants in #2 say that water is coming into their bathroom through the overhead vent every time the people upstairs take a shower. What is the probable cause, and how would you repair it?
 - a. Shower drain pipe is leaking – repair through downstairs ceiling
 - b. No shower curtain – speak to resident
 - c. Leak in pipe between director and shower head – access through back side of shower wall and repair
 - d. All of the above
5. Which thing would NOT cause a commode to continually run?
 - a. Poor float adjustment
 - b. Broken flapper chan
 - c. Cain too long and caught under flapper
6. Where is a “P” trap located?
 - a. High side line on A/C
 - b. Under the sink
 - c. Behind refrigerator
7. Where is the bibb seat located?
 - a. In a faucet
 - b. On a commode
 - c. No such thing
8. How would you remove an obstruction lodged in a commode?
 - a. Plunger
 - b. Toilet auger
 - c. Both of the above

ELECTRICAL

1. On a 110 volt circuit, where the white wire is common; the black wire would normally be:
 - a. 24 volts
 - b. 110 volts
 - c. 220 volts
 - d. 440 volts
 - e. None of the above
2. On a 220 volt circuit, where the white wire is common, the red wire would normally be:
 - a. 24 volts
 - b. 110 volts
 - c. 220 volts
 - d. 440 volts
 - e. None of the above
3. What is the first thing you do when working on an apparently defective breaker?
 - a. Remove breaker
 - b. Shut off breaker
 - c. Turn off main breaker
4. What is a breakers purpose in an electric circuit?
 - a. Route electric current
 - b. Overload protection
5. What is the purpose of a 3-way switch?
 - a. No such thing
 - b. Can control switch 1 location
 - c. Can control switch 2 locations
6. In which process is pentrox solution used?
 - a. Aluminum to copper connections
 - b. PVC pipe connections
 - c. Cleaning condensing coils
 - d. None of the above

POOLS

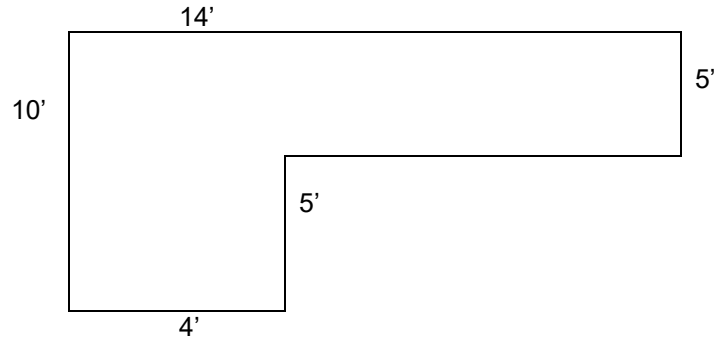
1. Safety equipment must be in place at all times?
 - a. True
 - b. False
2. Never mix two chemicals
 - a. True
 - b. False
3. Algae is a microscopic plant life.
 - a. True
 - b. False
4. When expecting more swimmers than normal, a high dosage of _____ is required.
 - a. Soda
 - b. Ash
 - c. Chlorine
 - d. Muriatic acid
5. To raise your PH you would add what chemical to the water?
 - a. Soda
 - b. Ash
 - c. Chlorine
 - d. Muriatic acid

6. When should a pool filter be backwashed?
 - a. Every day
 - b. Every other day
 - c. According to pressure
 - d. When the water turns milky or changes color
 - e. None of the above
7. How often should a pool be shocked, according to health regulations?
 - a. Once a week
 - b. Once every other week
 - c. Once a month
 - d. Once a year
 - e. None of the above
8. The chlorine level in a pool should be maintained at:
 - a. 2.0
 - b. 3.0
 - c. 1.0
 - d. None of the above
9. The pH level in a pool should be maintained at:
 - a. 7.8 to 8.2
 - b. 7.0 to 7.2
 - c. 7.2 to 7.6
 - d. None of the above
10. Mutiacic acid is used to _____ the pH level in the pool.
 - a. Raise
 - b. Lower
 - c. None of the above
11. A sand filter on a pool should be dismantled and cleaned how often?
 - a. The start of summer
 - b. The end of summer
 - c. None of the above

GENERAL

1. In BTU's, which of the following is a one (1) ton unit?
 - a. 12,000 BTU
 - b. 18,000 BTU
 - c. 2,000 BTU
 - d. 8,000 BTU
 - e. None of the above
2. Where would a ballcock be used?
 - a. In a dishwasher
 - b. In a commode
 - c. On a water heater
 - d. None of the above
3. Where is a fuse link located?
 - a. In a breaker box
 - b. On a heat coil
 - c. On a stove element
 - d. None of the above
4. A sequencer is used in:
 - a. Heating and air conditioning
 - b. Plumbing
 - c. Outside lighting
 - d. None of the above

5. What is a swaging tool used for?
 - a. Enlarging copper tubing
 - b. Connecting PVP pipe joints together
 - c. Joining electrical wires together
 - d. None of the above
6. Below is a floor plan for a single room. How many 1'x1' tiles do you think you would need to re-tile the room? _____



7. What would you do if you saw a trash can contents on fire in a unit?
 - a. Call Fire department
 - b. Get extinguisher and try to put out fire
 - c. Call maintenance supervisor
 - d. Tell resident to call Fire department
8. Work orders should be filled out and signed before returning them to the manager.
 - a. True
 - b. False
9. A copy of the work order or "hello" card must be left in each apartment the maintenance man enters.
 - a. True
 - b. False
10. A neat appearance is not really important for a maintenance man because no one cares.
 - a. True
 - b. False
11. Good maintenance service is just as important to an apartment community as a good manager or a good property manager.
 - a. True
 - b. False
12. Picking up litter is everyone's business; there are no exceptions
 - a. True
 - b. False
13. Tools should be left where used last, eventually they may be needed there again.
 - a. True
 - b. False
14. Quality of tools may reflect quality of work.
 - a. True
 - b. False
15. What is the best and cheapest thing to use to thin or clean up latex paint?
 - a. Varsal
 - b. Water
 - c. Paint thinner

16. What is a striker plate?
- a. Part of a door lock assembly
 - b. Like an anvil to hammer on
17. A joist is found in:
- a. A floor
 - b. A wall
 - c. Stairs