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Quiz 1

1. An indirect waste pipe _____ connect directly into a plumbing fixture, interceptor, or receptacle that is _____ connected to the drainage system.
 - does – directly
 - does not – directly
 - does – never
 - does not – never
2. Chapter 8 shall follow the provisions for discharge and disposal of _____.
 - condensate wastes
 - chemical wastes
 - industrial wastes
 - clear water wastes
 - all of the answers provided
3. An air gap is _____.
 - the distance between the crown of a P trap and the flood rim of the receptor
 - the vertical distance between the lowest opening of a pipe and the flood rim of the receptor
 - the horizontal distance between the cold water inlet on a water heater and the hot water outlet
 - the distance between the roof vent termination and the building drain outlet
4. The minimum distance of an air gap is _____.
 - none is required
 - 1 inch
 - 2 inches
 - 12 inches
 - none of the answers provided

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5. An air break is similar to an air gap except that the waste flows _____.
 - into a receptor from a fixture
 - onto the floor from the drain
 - directly into the building sewer
 - into a water closet
 - none of the answers provided
6. The purpose of an indirect drain on food handling equipment is _____.
 - to increase the storage capacity of the kitchen apparatus
 - to make it easier for the kitchen help to adequately clean the floor
 - to prevent food from being contaminated if there are any sewer backups
 - to allow easy rearrangement of kitchen equipment
 - all of the answers provided
7. A(n) _____ when used in a food handling establishment, must be installed with an indirect drain system.
 - refrigerator
 - walk-in cooler
 - ice machine
 - egg boiler
 - all of the answers provided
8. Except for refrigeration coils and ice-making machines, the size of the indirect waste pipe shall not be smaller than the drain on the unit, and shall not be smaller than _____.
 - 1/2 inch
 - 3/4 inch
 - 1 inch
 - 2 inches
 - none of the answers provided
9. Except for refrigeration coils and ice-making machines, the length of the indirect waste pipe shall not exceed _____.
 - 1 foot
 - 5 feet
 - 10 feet
 - 15 feet
 - none of the answers provided
10. The indirect drain line from an ice machine can exceed _____.
 - 1 foot
 - 5 feet
 - 10 feet
 - 15 feet
 - none of the answers provided
11. The minimum size of an indirect drain line for an ice machine is _____ as long as it is not smaller than the drain on the unit.
 - 1/2 inch
 - 3/4 inch
 - 1 inch
 - 2 inches
 - none of the answers provided
12. A walk-in cooler may drain to an outdoor receptor as long as the receptor is at least _____ lower than the lowest floor drain.
 - 6 inches
 - 12 inches
 - 16 inches
 - 18 inches
 - none of the answers provided
13. For a walk-in cooler that drains through a floor drain into an outdoor receptor, the floor drain must _____.
 - be trapped
 - be individually vented
 - have cleanouts at all 90 degree turns
 - be accessible
 - all of the answers provided
14. Waste from walk-in coolers shall discharge through _____ into a trapped and vented receptor.
 - an air gap
 - an air break
 - either an air gap or air break
15. A food handling fixture such as a _____ must be indirectly connected to a drainage system with an air gap.
 - food-preparation sink
 - steam kettle
 - potato peeler
 - ice cream dipper well
 - all of the answers provided

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16. The storage of unpackaged ice used for human ingestion such as a _____ must be indirectly connected to a drainage system with an air gap.

- bin
- sink
- either of the answers provided

17. Indirect waste pipes from food-handling fixtures _____ be combined when entering into an indirect waste receptor.

- can (no restrictions on usage or number of fixtures)
- can (if the waste pipe is at least 1 inch in diameter)
- can (if there are no more than 3 food-handling fixtures)
- can never
- none of the answers provided

18. Five steaming kettles would require _____ indirect waste pipes.

- 1
- 3
- 5
- 10
- none of the answers provided

19. The size of an indirect waste pipe shall be _____.

- at least 1/2" in diameter
- at least 3/4" in diameter
- no small than the diameter of the drain of the unit
- no small than the diameter of the drain of the unit and at least 1/2" in diameter
- none of the answers provided

20. Given that a bar sink trap is not vented, the sink drain is then being discharged into an approved vented receptor, as long as the length of the fixture outlet to the receptor is _____ or less.

- 3 feet
- 5 feet
- 10 feet
- 15 feet

Quiz 2

1. The pressure relief valve from a water heater must _____.

- use a cooper drain line
- be at least 1" in diameter
- be directly connected to the waste drainage system
- drain into a 2" deep drip pan
- none of the answers provided

Water Heater - 3/4" PTR valve



2. The minimum sized drain line is _____ in diameter.

- 1/2 inch
- 3/4 inch
- 1 inch
- 1-1/2 inches
- 2 inches

3. The maximum length of the drain line is _____.

- 5 feet
- 10 feet
- 15 feet
- 20 feet
- unlimited

4. The discharge of the indirect drain must be through _____.

- an air gap
- an air break
- either an air gap or air break

5. The minimum sized air gap for this water heater containing a discharge pipe with a 3/4" PTR valve is _____.

- 1 inch
- 1-1/2 inches
- 2 inches
- 3 inches
- none of the answers provided

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6. The minimum air gap for a water heater with discharge pipe with a 1" PTR valve is _____.
 - 1 inch
 - 1-1/2 inches
 - 2 inches
 - 3 inches
 - none of the answers provided
7. The waste drain of a sterilizer must _____.
 - be an indirect drain
 - be no more than 15 feet in length
 - use an air gap before discharging into a receptor
 - have the receptor in the same room
 - all of the answers provided
8. The overflow drain of a drum-type humidifier must _____.
 - discharge into an open receptor through an air gap or air break
 - be no more than 15 feet in length
 - a "plastic" or vinyl tubing
 - all of the answers provided
 - none of the answers provided
9. A plumbing fixture may be installed using indirect waste pipe when _____.
 - the pipe diameter is less than 2 inches
 - the slope of the pipe is between 1% and 2%
 - the waste only contains liquids, and no solids
 - all of the answers provided
 - none of the answers provided
10. An indirect waste pipe vent _____.
 - may use an air admittance valve
 - may be directly connected to a sewer-connected vent
 - must be at least 1-1/4 inches in diameter
 - extends separately to the outside air
 - all of the answers provided
11. An indirect waste pipe less than 5 feet in length shall have _____.
 - no trap
 - vented waste pipe
 - a trap
 - a vented trap
 - none of the answers provided
12. An indirect waste pipe more than 5 feet and less than 15 feet in length shall have _____.
 - no trap
 - vented waste pipe
 - a trap
 - a vented trap
 - none of the answers provided
13. An indirect waste pipe more than 15 feet in length shall have _____.
 - no trap
 - vented waste pipe
 - a trap
 - a vented trap
 - none of the answers provided
14. An indirect waste pipe less than 15 feet in length shall have a drain line of _____ in diameter or larger, and not smaller than the equipment drain.
 - 1/2 inch
 - 3/4 inch
 - 1 inch
 - 1-1/2 inches
 - 2 inches
15. A cleanout on an indirect drain line is required _____.
 - at every change in direction
 - only if the change of direction is 45 degrees or greater
 - only if the change of direction is 75 degrees or greater
 - only if the change of direction is 90 degrees or greater
 - none of the answers provided
16. A receptor shall be _____.
 - designed to prevent splashing
 - designed to prevent flooding
 - located for accessible inspection
 - located for cleaning
 - all of the answers provided
17. The maximum length for a clothes washer receptor is _____ above its trap.
 - 12 inches
 - 18 inches
 - 24 inches
 - 30 inches
 - 36 inches

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18. The minimum length for a clothes washer receptor is _____ above its trap.
- 12 inches
 - 18 inches
 - 24 inches
 - 30 inches
 - 36 inches
19. A trap for a clothes washer standpipe shall be installed _____.
- below the floor
 - on the floor
 - at least 6 inches above the floor
 - at least 12 inches above the floor
 - anywhere
20. A trap for a clothes washer standpipe may be installed no more than _____ above the floor.
- 12 inches
 - 18 inches
 - 24 inches
 - 30 inches
 - 36 inches
21. A trap for a clothes washer standpipe may be installed under the floor when _____.
- the homeowner requires it
 - the architect requires it
 - the general contractor requires it
 - it is easier for the plumber to install it there
 - it may never be installed under the floor
22. A direct waste receptor is permitted to be installed in a toilet room.
- True – under all circumstances
 - True – only if it is from a clothes washer
 - True – only if the toilet room is not used
 - none of the answers provided

Quiz 3

1. Pressurized wastes can be directly discharged into a drainage system.
- True – if the pressure is lower than 10 psi
 - True – if the piping is galvanized steel or copper
 - True – under all circumstances
 - False – no exceptions
 - False – unless the AHJ has approved the design of the drainage system to accept pressurized waste
2. Sterilizers shall discharge through a(n) _____.
- air gap
 - P trap
 - S trap
 - direct drainage connection
 - sanitary tee
3. The maximum length of an indirect drain for a sterilizer is _____ feet.
- 5
 - 10
 - 15
 - 20
 - unlimited, if drain is 1 inch or larger
4. Equipment other than plumbing fixtures which have waste water shall discharge into a(n) _____.
- approved open receptor
 - P trap
 - S trap
 - direct drainage connection
 - sanitary tee
5. Condensate from a condensing furnace is allowed to be discharged into a pipe made from _____.
- cast-iron
 - galvanized iron
 - plastic
 - all of the answers provided
 - none of the answers provided

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6. Condensate from a condensing furnace is allowed to be discharged into an exposed fixture tailpiece and trap, if it is made from _____.
 - cast-iron
 - galvanized iron
 - plastic
 - copper alloy
 - all of the answers provided
7. A domestic dishwashing machine may be directly connected to a drainage system or food waste disposer without the use of an approved dishwasher air gap fitting on the discharge side of the dishwashing machine.
 - True
 - False
8. The abbreviation FL on a dishwasher air gap fitting means _____.
 - flood level
 - fluid level
 - false level
 - final load
 - Florida (where the device was invented)
9. The purpose of an air gap on a dishwasher is to avoid cross-contamination of potable water, by avoiding direct contact with the waste water from the dishwasher discharge.
 - True
 - False
10. The cooling water from a refrigeration system must be discharged into the _____ side of an approved fixture trap.
 - inlet
 - outlet
 - inlet or outlet
11. Cooling water from a refrigeration system must be discharged into a funnel-shaped receptacle located at least _____ above the overflow rim of the fixture.
 - 1 inch
 - 6 inches
 - 12 inches
 - 18 inches
 - 24 inches
12. Drinking fountains shall be permitted to be installed with _____ wastes.
 - direct
 - indirect
 - semi-direct
 - non-water
 - all of the answers provided
13. A steam pipe _____ be directly connected to a plumbing or drainage system.
 - shall
 - shall not
14. Water above 140°F and under pressure _____ be directly discharged into a drainage system.
 - shall
 - shall not
15. Typical steam temperatures range from _____ degrees.
 - 120 to 160
 - 140 to 180
 - 160 to 200
 - 220 to 275
 - none of the answers provided
16. Typical condensate temperatures range from _____ degrees.
 - 120 to 160
 - 140 to 180
 - 160 to 200
 - 220 to 275
 - none of the answers provided
17. Boilers can discharge into a drain system if discharged _____.
 - into an open condenser
 - into a closed condenser
 - into an approved intercepting sump
 - all of the answers provided
 - none of the answers provided
18. An open or closed condenser or intercepting pump will prevent _____ from entering the system.
 - steam
 - water under pressure
 - either of the answers provided
 - neither of the answers provided

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19. A closed condenser shall have a _____ taken off the _____ unit.
- drain – side
 - vent – top
 - vent – bottom
 - drain – top
 - none of the answers provided
20. A closed condenser shall have a _____ extending to within _____ of the bottom of the tank.
- deep seal trap – 6 inches
 - drain line – 12 inches
 - vent – 48 inches
 - blow down line – 6 inches
 - none of the answers provided
21. A deep seal trap _____.
- shall have a 3/4 inch opening located at the highest point of the trap
 - is made of steel
 - is located on the incoming blow down line to the condenser
 - all of the answers provided
 - none of the answers provided

Quiz 4

1. A boiler that has a 2 inch blowoff will need to have a water outlet of _____ and a vent size of _____.
- 1 inch – 2-1/2 inches
 - 1-1/4 inches – 3 inches
 - 1-1/2 inches – 4 inches
 - 2 inches – 5 inches
 - 2-1/2 inches – 6 inches
2. A boiler that has a 2-1/2 inch blowoff will need to have a water outlet of _____ and a vent size of _____.
- 1 inch – 2-1/2 inches
 - 1-1/4 inches – 3 inches
 - 1-1/2 inches – 4 inches
 - 2 inches – 5 inches
 - 2-1/2 inches – 6 inches
3. Water that may be under pressure in an open condenser will need to pass through an open sump before entering a drainage system.
- True
 - False
4. Sumps, condensers, or intercepting tanks that are constructed of concrete shall have walls and bottoms not less than _____ in thickness, and the insides shall be cement plastered not less than _____ in thickness.
- 4 inches – 1/2 inch
 - 6 inches – 1 inch
 - 8 inches – 1 inch
 - 12 inches – 2 inches
 - none of the answers provided
5. Condensers constructed of metal shall be not less than No. _____ U.S. standard gauge.
- 8
 - 10
 - 12
 - 18
 - 22
6. Metal condensers shall be protected from external corrosion by an approved _____ coating.
- bituminous
 - galvanized
 - plastic impregnated
 - zinc electro-plated
 - all of the answers provided
7. A condenser needs to have access for cleaning.
- True
 - False
8. A strainer is required on an indirect waste interceptor when _____.
- the pipe to the drain is 2 inches or smaller
 - discharge waste water has particles that would clog the drain
 - the discharge is less than 5 gpm
 - the discharge is more than 5 gpm
 - none of the answers provided

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9. There are several steps in the pretreatment of chemical waste. Step 1 is to _____.
 - discharge pre-treated wastes into a drainage system
 - pump chemical wastes to a chemical waste pre-treatment plant
 - treat chemical wastes until no longer harmful
 - submit chemical waste treatment plans to the AJH
10. There are several steps in the pretreatment of chemical waste. Step 2 is to _____.
 - discharge pre-treated wastes into a drainage system
 - pump chemical wastes to a chemical waste pre-treatment plant
 - treat chemical wastes until no longer harmful
 - submit chemical waste treatment plans to the AJH
11. There are several steps in the pretreatment of a chemical waste. Step 3 is to _____.
 - discharge pre-treated wastes into a drainage system
 - pump chemical wastes to a chemical waste pre-treatment plant
 - treat chemical wastes until no longer harmful
 - submit chemical waste treatment plans to the AJH
12. There are several steps in the pretreatment of a chemical waste. Step 4 is to _____.
 - discharge pre-treated wastes into a drainage system
 - pump chemical wastes to a chemical waste pre-treatment plant
 - treat chemical wastes until no longer harmful
 - submit chemical waste treatment plans to the AJH
13. Which pipe material MUST NOT be used in the pretreatment of chemical waste?
 - CPVC
 - PP
 - PVDF
 - copper tube
 - none of the answers provided
14. Which vent pipe material may be used in the pretreatment of chemical waste?
 - chemical-resistant glass
 - high-silicon iron pipe
 - lead pipe (at least 1/8" wall)
 - vitrified clay
 - all of the answers provided
15. Where practicable, piping shall be _____ and installed with maximum clearance from other services.
 - readily accessible
 - within 8 feet of the floor
 - hidden
 - behind walls
 - on the roof
16. The owner shall make and keep a permanent record of the location of piping and venting carrying chemical waste.
 - True
 - False
17. A chemical waste vent _____ intersect vents for other services.
 - is allowed to
 - shall
 - shall not
 - not addressed in the code
 - none of the answers provided
18. Methods of chemical waste pretreatment do not apply to _____.
 - photographic dark rooms
 - x-ray dark rooms
 - research laboratories
 - control laboratories
 - all of the answers provided
19. An indirect waste drain is required for _____ that discharge clear waste water.
 - water lifts
 - expansion tanks
 - cooling jackets
 - drip or overflow pans
 - all of the answers provided

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20. Where a pump is used to discharge waste pool water to the drainage system, the pump discharge shall be installed as a(n) _____.
- direct waste
 - indirect waste
 - chemical waste
 - neutral waste
 - all of the answers provided

Quiz 5

1. Which of the following require condensate to be discharged through an indirect waste pipe?
- air washers
 - air-cooling coils
 - overflow from evaporative coolers
 - all of the answers provided
2. The minimum slope of a condensate drain is _____ inch per foot.
- 1/8
 - 5/16
 - 3/8
 - 1/4
 - none of the answers provided
3. Condensate or wastewater _____ drain over a public way.
- shall
 - shall not
4. Condensate pump discharge shall rise _____ to a point where it is possible to connect to a gravity condensate drain.
- 2 inches
 - horizontally
 - away
 - vertically
5. Separate condensate pumps shall be connected to a single gravity indirect waste where equipped with check valves.
- True
 - False
6. When protecting from condensate overflow, a water level detecting device would work perfect in the event of the primary drain being blocked off.
- True
 - False

7. When protecting from condensate overflow, an additional watertight pan _____ to catch the overflow condensate, due to the primary drain being clogged.
- is corrosion-resistant
 - will need a separate drain line
 - is installed beneath the appliance
 - all of the answers provided
8. An additional drain line at a level that is higher than the primary drain line connection of the pan is the third method for protecting from condensate overflow.
- True
 - False
9. _____ due to a clogged primary condensate, an additional watertight pan with a water level detection device will be installed beneath the appliance.
- To catch the overflow condensate
 - To shutoff the equipment
 - both of the answers provided
 - neither of the answers provided
10. The additional pan or the additional drain line connection shall be at least _____ nominal pipe size.
- 1/2 inch
 - 3/4 inch
 - 1 inch
 - 1-1/4 inch
 - 2 inch
11. An air conditioning system rated at 5 tons of refrigeration will need to have a condensate pipe at least _____ in diameter.
- 3/4 inch
 - 1 inch
 - 1-1/4 inches
 - 1-1/2 inches
 - 2 inches
12. An air conditioning system rated at 15 tons of refrigeration will need to have a condensate pipe at least _____ in diameter.
- 3/4 inch
 - 1 inch
 - 1-1/4 inches
 - 1-1/2 inches
 - 2 inches

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13. An air conditioning system rated at 50 tons of refrigeration will need to have a condensate pipe at least _____ in diameter.
- 3/4 inch
 - 1 inch
 - 1-1/4 inches
 - 1-1/2 inches
 - 2 inches
14. An air conditioning system rated at 175 tons of refrigeration will need to have a condensate pipe at least _____ in diameter.
- 3/4 inch
 - 1 inch
 - 1-1/4 inches
 - 1-1/2 inches
 - 2 inches
15. A cleanout shall be installed on a condensate drain line for _____.
- clearing any blockages
 - maintenance without requiring the drain line to be cut
 - both of the answers provided
 - neither of the answers provided
16. Air-conditioning condensate waste pipes shall connect indirectly to the drainage system through an _____ to properly trapped and vented receptors, dry wells, leach pits, or the tailpieces of plumbing fixtures.
- air gap
 - air break
 - either of the answers provided
 - neither of the answers provided
17. The air-conditioning coil condensate waste shall discharge by direct connection to a(n) _____.
- lavatory tailpiece
 - accessible inlet on a bathtub overflow
 - either of the answers provided
 - neither of the answers provided
18. Female plastic screwed fittings shall only be used with male plastic threaded fittings.
- True
 - False