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Quiz 1

1. Each plumbing fixture shall be provided with potable running water piped arranged to flush and kept in a clean and sanitary condition without danger of backflow or cross-connection.

- True
- False

2. Water closets and urinals shall be flushed by means of an approved _____.

- flush tank
- flushometer valve
- either of the answers provided
- none of the answers provided

3. In occupancies where plumbing fixtures are installed for private use, hot water shall be required for bathing, washing, doing laundry, cooking, dish washing or maintenance.

- True
- False

4. Potable water systems need to be marked with _____.

- Green background with white lettering
- Yellow background with black lettering
- White background with orange lettering
- Orange background with red lettering

5. Non-potable water systems need to be marked with _____.

- Green background with white lettering
- Yellow background with black lettering
- White background with orange lettering
- Orange background with red lettering

6. Which of the following must be shown on the liquid being conveyed?

- a. colored band
- b. normal direction of flow
- c. pressure of liquid
- d. all of the answers provided
- e. only a and b

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7. The colored identification band shall be indicated every _____ feet.

- 5
- 10
- 15
- 20

8. The colored identification band shall be visible at least _____ per room.

- once
- twice
- three times
- four times

9. The colored identification band shall be visible from the floor level.

- True
- False

10. The marking on non-potable water systems needs to include the following words: _____.

- Contaminated water – Do not drink.
- Contaminated water – Do not touch.
- Danger – Contaminated water
- Caution: Non-potable water, do not drink

11. Faucets should be connected so that the hot water is on the _____ side of the fittings.

- right
- left
- either

12. Faucets must be labeled “Hot,” “Cold.”

- True
- False

13. It is unlawful for a potable water supply piping system to be installed that could allow used or polluted water to enter the system from any receptor or fixture by reason of back-siphon age.

- True
- False

14. It is unlawful for a potable water supply piping system to be installed that could allow used or polluted water to enter the system from any receptor when the receptor is subject to pressure in excess of operating pressure to hot or cold water piping.

- True
- False

15. It is unlawful to make a connection between pipes in a potable water system and chemical

piping unless there is a backflow prevention device.

- True
- False

16. Each connection between potable water and chemical piping shall have a separate backflow prevention device.

- True
- False

17. A private water supply system can be connected to another source of supply _____.

- when the AHJ gives approval
- when the other source of supply is a private system
- when the other source of supply is a public system
- never is allowed

18. Such equipment or mechanism _____ permitted only when equipment with an approved backflow prevention device or assembly.

- may
- may be
- may not be
- can

19. A homemade backflow prevention device may be installed _____.

- after it has been approved by the AHJ
- before it has been approved by the AHJ
- at no time. Home made devices are never allowed
- if it has been constructed using UL approved components

20. _____ will be tested for conformity with a set of standards.

- A device
- An assembly
- either of the answers provided
- none of the answers provided

21. The person responsible for maintaining a backflow device is _____.

- a plumber
- a field technician
- the person having control of the device
- none of the answers provided

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22. A cross-connection control must be tested _____.

- when installed
- when repaired
- when relocated
- all of the answers provided

23. The minimum schedule to test backflow devices is _____.

- weekly
- monthly
- semi-annually
- annually
- bi-annually

24. No device or assembly shall be removed from use or relocated, or other device or assembly substituted, without the approval of the Authority Having Jurisdiction.

- True
- False

25. Testing of a backflow device shall be preformed by _____.

- a backflow assembly tester
- a field technician
- a plumber
- a facilities engineer
- the owner

Quiz 2

1. The minimum airgap for backflow protection for a fixture with an effective opening less than $\frac{3}{4}$ " and not affected by sidewalls is _____.

- 1 inch
- 1 $\frac{1}{2}$ inches
- 2 inches
- 3 inches

2. An atmospheric vacuum breaker consists of _____.

- a body
- a checking member
- an atmospheric opening
- all of the answers provided

3. A hose connection backflow preventer consists of _____ independent check valve(s).

- a single
- two
- three
- none – no check valves are used in this device

4. A double check valve backflow prevention assembly has _____.

- two independently acting internally loaded check valves
- eight properly located test cocks
- four isolation valves
- none of the answers provided

5. A pressure vacuum breaker backflow shall be installed indoors only if provisions for spillage are provided.

- True
- False

6. A pressure-type vacuum breaker backflow prevention assembly consists of _____.

- one (1) check valve force-loaded closed
- an air inlet vent valve force-loaded open to atmosphere
- 2 tightly closing shut-off valves and test cocks
- all of the answers provided

7. A reduced-pressure principle backflow prevention assembly consists of _____.

- two independently acting internally loaded check valves
- a differential pressure-relief valve
- four properly located test cocks
- two isolation valves
- all of the answers provided

8. When more than one backflow prevention valve is installed in one location on a premise, each valve shall be permanently identified in a way to satisfactory the AHJ.

- True
- False

9. A backflow preventer must be tested at the time of installation or repair.

- True
- False

10. A minimum of _____ of clearance is required between the floor and the lowest part of a backflow assembly for testing.

- 6 inches
- 12 inches
- 18 inches
- 24 inches
- 36 inches

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11. Backflow assemblies that are installed more than _____ above the floor shall be provided with a permanent platform.

- 36 inches
- 48 inches
- 60 inches
- 72 inches

12. In areas where the temperature may be below 32 degrees, backflow assemblies shall be protected with an outdoor enclosure.

- True
- False

13. Backflow drain-line devices shall be sized based on Chapters 7 and 8 of the UPC.

- True
- False

14. Urinal flushometer valves shall be equipped with an atmospheric vacuum breaker that is installed on the _____ side of the valve.

- discharge
- supply
- neutral

15. For water closet and urinal flushometers, the critical level of the flushometer is at least _____ above the overflow rim of the highest part of a urinal.

- 1 inch
- 6 inches
- 12 inches
- 18 inches

16. Water closets equipped with a ballcock shall be installed with the critical level at least _____ above the full opening of the overflow pipe.

- 1 inch
- 6 inches
- 12 inches
- 18 inches

17. Heat exchangers for potable water _____.

- a. may be single walled
- b. may be single walled only when used with an indirect fired water heater
- c. must be double walled
- d. all of the answers provided
- e. only b and c

18. A water supply to a swimming pool uses a vacuum breaker on the discharge side of the last

valve. The vacuum breaker must be at least _____ critical level.

- 1 inch
- 6 inches
- 12 inches
- 18 inches

Quiz 3

1. A potable water supply to irrigation systems having no pumps or connections for pumping equipment, and no chemical injection or provisions for chemical injection, shall be protected by _____.

- atmospheric vacuum breaker
- pressure vacuum breaker
- spill-resistant pressure vacuum breaker
- reduced-pressure backflow preventer
- all of the answers provided

2. Where sprinkler systems have connections for pumps or are otherwise capable of creating back-pressure, the potable water supply shall be protected by the following type of device if the backflow device is located upstream from the source of back-pressure:

- atmospheric vacuum breaker
- pressure vacuum breaker
- spill-resistant pressure vacuum breaker
- reduced-pressure backflow preventer
- all of the answers provided

3. Where irrigation systems include a chemical injector or any provisions for chemical injection, the potable water supply shall be protected by the following:

- atmospheric vacuum breaker
- pressure vacuum breaker
- spill-resistant pressure vacuum breaker
- reduced-pressure backflow preventer
- all of the answers provided

4. Potable water makeup connections to steam or hot water boilers shall be provided by an air gap or reduced pressure principle backflow preventer.

- True
- False

5. Backflow prevention devices are required on fire protection systems in a single-family residence.

- True
- False

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6. Where antifreeze, corrosion inhibitors, or other chemicals are added to a fire protection system supplied from a potable water supply, the potable water system shall be protected by one of the following:

- atmospheric vacuum breaker
- pressure vacuum breaker
- spill-resistant pressure vacuum breaker
- reduced-pressure backflow preventer
- all of the answers provided

7. Vacuum breakers for washer-hose bedpans shall be located not less than _____ feet above the floor.

- three
- four
- five
- six

8. The water supply to a dialysis water system shall be protected from back-pressure and back-siphonage by a reduced-pressure principle backflow preventer.

- True
- False

9. On the job, an installer ran short of copper pipe to finish the job. (S)He may use some plastic pipe to finish.

- True
- False

10. Type _____ is the minimum weight piping that can be used in a building.

- K
- L
- M
- N

11. Type _____ copper piping is labeled with a green color.

- K
- L
- M
- N

12. Type _____ copper piping is labeled with a red color.

- K
- L
- M
- N

13. Type _____ copper piping is labeled with a blue color.

- K
- L
- M
- N

14. Listed flexible copper water connectors may be installed inside of a wall.

- True
- False

15. A one-inch black iron fitting can be used in a water supply system.

- True
- False

16. If a malleable iron water fitting of less than 2 inches is used in a water supply, it must be galvanized.

- True because all sizes of malleable fittings must be galvanized.
- False because malleable fittings are not required to be galvanized.
- False because only cast iron fittings are to be used and they are not malleable.
- False because only copper is to be used for systems of less than 2 inches.

17. Used piping from an apartment building water system was salvaged. Can the pipe be used for a water system in another project?

- Yes
- No

Quiz 4

1. Plastic pipe can be used to replace a metal water service pipe if a blue tracer wire _____.

- is installed adjacent to the piping
- is terminated above ground on each end of the piping
- both of the answers provided
- none of the answers provided

2. The tracer wire must _____.

- be a single strand wire
- be not less than 16 AWG
- have a crimp terminal on each end
- all of the answers provided
- none of the answers provided

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3. The maximum allowable lead in fittings and pipe is _____.

- 5 %
- 7 %
- 8 %
- 12 %
- 15 %

4. PEX tubing shall not be installed within the first _____ of piping connected to a water heater.

- 12 inches
- 18 inches
- 24 inches
- never use PEX for hot water

5. The maximum length for a flexible corrugated connector for water heaters is _____.

- 18 inches
- 24 inches
- 30 inches
- 36 inches
- 48 inches

6. The maximum length for a flexible corrugated connector for fixture connectors is _____.

- 18 inches
- 30 inches
- 36 inches
- 48 inches
- 56 inches

7. The maximum length for a flexible corrugated connector for washing machine connectors is _____.

- 36 inches
- 48 inches
- 60 inches
- 72 inches
- 96 inches

8. The maximum length for a flexible corrugated connector for a dishwasher is _____.

- 120 inches
- 96 inches
- 72 inches
- 60 inches
- 48 inches

9. PE-AL-PE tubing shall not be installed within the first _____ of piping connected to a water heater.

- 12 inches
- 18 inches

- 24 inches
- never use PE-AL-PE for hot water

10. A fullway valve controlling all outlets shall be installed on the discharge side of each water meter and on each unmetred water supply.

- True – a valve is needed on both supplies.
- False – a valve is needed only on the metered water supply
- False – a valve is need on the unmetred water supply
- False – a valve is not needed on either supply

11. A shutoff valve to a single-family residence shall be accessible at all times.

- True – provided it is inside the dwelling
- True – provided it is accessible at the property line
- True – since it controls the water from the discharge of the water supply piping to the house
- False – the shutoff valve is considered the fullway valve downstream of the water meter.

12. A fullway valve shall be installed on the hot water discharge pipe from each water heater.

- True, since it controls hot water to the residence
- True, since it would allow replaced on a single hot water faucet in a bathroom.
- False, since a halfway valve is required, not a fullway valve.
- False, a valve is required on the cold water inlet line to the water heater.

13. A four unit apartment building should have a water supply shutoff valve to each unit.

- True
- False

14. A control valve shall be installed immediately _____ water-supplied appliance.

- in parallel with each
- in front of each
- behind each

15. All required shutoff or control valves shall be accessible.

- True
- False

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Quiz 5

1. Flared joints for copper water-tubing shall be made with _____ copper.

- soft
- weak
- tempered
- hard drawn
- forged

2. When making a flare, the tubing shall _____.

- a. be reamed to the full bore
- b. be resized to round
- c. be expanded with a proper flaring tool
- d. be annealed
- e. only a, b, and c

3. Mechanically Formed Tee Fittings should be _____.

- sweated
- soldered
- brazed
- welded
- glued

4. It is permissible for a male copper fitting to be screwed into a female PVC fitting.

- True, if it is the same size pipe
- True, since it is NPT
- False, because the pitch of the threads is different
- False, it is not permitted by code

5. A slip joint is permitted to be concealed in a wall.

- True
- False

6. The overflow on a gravity supply tank must not be less than _____ square inches.

- 12
- 14
- 16
- 18
- 24

7. The overflow on a gravity supply tank needs to be covered with a screen of not less than _____ openings per inch.

- 12
- 14
- 16
- 18
- 24

8. A minimum residual water pressure of _____ is required in a water system.

- 15 psig
- 20 psig
- 30 psig
- 45 psig
- 50 psig

9. Where static water pressure in the water supply piping is in excess of _____ psig, an approved-type pressure regulator preceded by an adequate strainer shall be installed and the static pressure reduced to _____ or less.

- 100, 50
- 100, 20
- 80, 80
- 50, 25

10. An adequately sized expansion tank should be installed

- on all interior water systems
- on a water heater change out
- on a system that has any type of valve that prevents dissipation of building pressure back to the water main
- only on systems that have radiant heating

11. A combination temperature and pressure (TP) relief valve is required on water heating equipment.

- True, a TP valve is required on all water heaters
- True, a TP valve is required on all water heaters except non-storage instantaneous heaters (less with 3" ID)
- False, is recommend but not required
- False, because the solder on the copper pipe will melt and provide pressure relief

12. The maximum pressure setting of a relief valve is _____.

- 80 psig
- 100 psig
- 125 psig
- 150 psig
- 200 psig

13. A shutoff valve is permitted on pressure relief valves to stop nuisance weeping.

- True
- False

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14. The internal diameter of the drain pipe on a pressure relief should be _____ that of the pressure relief.

- smaller than
- equal to
- larger than
- not addressed in the code

15. The end of the drain shall terminate _____ of the building.

- inside
- outside
- underneath

16. The end of the drain shall be between _____ and _____ from the ground.

- ½ ft., 2 ft.
- 1 ft., 2 ft.
- 2 ft., 3 ft.
- 2", 6"

17. The end of the drain may be threaded.

- True
- False

Quiz 6

1. In a cold climate, the ground freezes to a depth of 3 feet. The water line must be buried to a depth of at least _____.

- 3 feet
- 4 feet
- 6 feet
- 7 feet
- 8 feet

2. A water line may be placed in the same trench with a clay sewer line if it is separated at least _____.

- 12" horizontal and 12" vertical
- 24" horizontal and 12" vertical
- 12" horizontal and 24" vertical
- 24" horizontal and 24" vertical

3. The separation from a water line located in the same trench of a sewer line that is made from the same material for its entire length that is found in the building is _____.

- 12" horizontal and 12" vertical
- 24" horizontal and 12" vertical
- 12" horizontal and 24" vertical
- 24" horizontal and 24" vertical
- no horizontal or vertical requirement

4. Copper pipe can be installed under a concrete floor slab if _____.

- a. there are no joints
- b. if there are joints, then brazed
- c. never permitted
- d. both a or b
- e. none of the answers provided

5. Copper water supply systems can be tested using potable water or air pressure at _____.

- 10 psig
- 15 psig
- 30 psig
- 50 psig
- 100 psig

6. A union is required within _____ of water containing equipment that must be removed for service or replacement.

- 6 inches
- 12 inches
- 18 inches
- 24 inches
- 28 inches

7. _____ potable water systems shall be disinfected prior to use whenever required by the Authority Having Jurisdiction.

- New
- Repaired
- Both new and repaired
- None of the answers provided

8. The pipe system _____ be flushed with clean, potable water until only potable water appears at the points of outlet.

- shall
- should
- may
- shall not
- should never

9. Disinfection of a potable water system requires _____ ppm of Chlorine for _____ hours.

- 50, 24
- 200, 3
- both of the answers provided
- neither of the answers provided

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10. Water hammer arrestors _____ be installed as close as possible to the quick-acting valves.

- shall
- should
- may
- shall not
- should never