## Total Question: 400 QAs

1. The kitchen range hood exhaust termination must be located at least $\qquad$ feet from operable windows and doors.
a. 6
b. 5
c. 4
d. 3 Correct

This is often difficult to achieve in dense urban settings.
2. Waste/drain backflow preventors are located $\qquad$ -
a. at the bottom of the wet stack
b. in the dry vent
c. below each sink trap
d. where the lateral exits the building Correct

The purpose of a backflow preventor is to prevent a reverse flow of sewage from the street sewer mains into the building. Therefore, the correct placement of the backflow preventor is in the lateral as it exits the building. There should be a cleanout at the bottom of the wet stack.
3. A B-vent gas chimney that is greater than 12 inches in diameter and is located less than 8 feet from a vertical wall or similar obstruction must terminate $\qquad$ feet higher than any part of the roof within a 10-foot radius.
a. 2 Correct
b. 4
c. 6
d. 8

Gas appliance B-vents less than 12 inches in diameter have different requirements that are based on the slope of the roof. The steeper the roof pitch, the greater the height above the roof the B-vent is required to terminate.
4. The minimum size for an attic access opening is $\qquad$ inches.
a. 18 by 24
b. 24 by 36
c. 22 by 30 Correct
d. 36 by 48

To be a code-compliant attic access opening, the attic height just above the opening must be at least 30 inches. Additionally, there should be an operable light in the attic that can be turned on within arm's reach of the opening.
5. The inspector notices that the deck ledger has been fastened to the house with common nails set on $12^{\prime \prime}$ centers. He should advise his client $\qquad$ -.
a. to keep an eye on the deck ledger
b. to add diagonal bracing
c. to add nails on $6^{\prime \prime}$ centers
d. to stay off of deck Correct

By coded, deck ledgers must be through bolted to the main structure. This deck is unsafe until it has been evaluated by a structural engineer and repaired by a qualified contractor.
6. A ceiling fan should be mounted at least $\qquad$ from the floor
a. $6 \mathrm{ft} 8^{\prime \prime}$.
b. 7 ft 6 ".
c. 7 ft . Correct
d. 8 ft .

The fan should be located at least 18 inches from the wall, 8 inches from the ceiling, and 7 feet above the floor for best air flow, according to Energystar.gov.
7. By code, the minimum depth for a stair tread is $\qquad$ inches.
a. 8
b. 9
c. 10 Correct
d. 12

The tread depth must not vary more than $\frac{3}{8}$ ".
8. Gable end drip edge is $\qquad$ .
a. installed over the roofing paper
b. installed over the shingles
c. installed under the roofing paper
d. installed using roofing cement

Drip edge installed on a gable end must be placed beneath the roofing paper. This allows the water to drain over the top of the drip edge and safely off the roof.

## 9. When inspecting the ductwork in a heating system, which of the following would NOT be a reportable defect?

a. An unsupported duct in the attic
b. Back drafting at the furnace
c. Flexible ducting used instead of solid ducting in an attic Correct
d. A heat register with visible debris inside

It is acceptable to use flexible ducting in an attic space. This gives the installer the ability to run the ducting through and around roof trusses and other obstructions. All ducts must be adequately supported so they do not sag or come loosed. Back drafting at the furnace is an issue because it can cause the furnace to stop working. A heat register full of debris should be cleaned so the heating system can operate with maximum efficiency.
$\qquad$
a. 10 "
b. $14^{\prime \prime}$
c. $16^{\prime \prime}$ Correct
d. $24^{\prime \prime}$

Typical joist spacing for homes using dimensional lumber is 16 inches. Some low-end houses were built on 24 -inch centers and these can have soft, springy floors. Many homes built with engineered floor joists are designed to be built on 19.2-inch centers.
11. Square chimney flues shall have a cross sectional area of at least $\qquad$ the area of the fireplace opening.
a. $\frac{1}{4}$
b. $\frac{1}{3}$
C. $\frac{1}{8}$
d. $\frac{1}{10}$ Correct

Round flues shall have an area of at least $\frac{1}{12}$ of the fireplace opening.
12. Which typical defect of a garage door opener is the most serious and should be reported to the owner immediately?
a. The opener attachment point at door not being reinforced
b. The opener only operating with the switch depressed continually
c. An inoperable reverse sensor Correct
d. An unusual clicking noise when opener is operating

An inoperable reverse sensor is the most serious safety issue and should be reported to the homeowner immediately. This sensor automatically backs up the garage door if there is an obstruction in its way and prevents the door from closing onto a person or small child. The homeowner should be advised to fix this immediately.

## 13. The latent load of a cooling system measures

$\qquad$
a. the amount of water vapor the $A C$ system must remove to adequately cool a home
b. the amount of water vapor the AC system must remove to reach a sensible humidity level
c. the amount of water vapor the AC system must remove to reach a $25 \%$ humidity level
d. the amount of water vapor the $A C$ system must remove from the air before removing sensible load heat

Latent load is the water vapor that must be removed before the true removal of heat can begin. Causes of latent load include high humidity, such as living in a coastal area, cooking, bathing, and people breathing. Basically, anything that produces humidity contributes to the latent load. This humidity created by this latent load must be removed in order for the AC system to start removing the heat in the home. This is why AC units must work much harder in high humidity climates because they must overcome both the humidity and the heat. The heat portion is called the sensible load.
14. Carbon monoxide is $\qquad$
a. a minor health hazard
b. inflammable
c. carcinogenic
d. lighter than air Correct

Carbon monoxide is only slightly lighter than air so that it usually mixes with the room air. Detectors should be placed at least 5 feet above the floor.

## 15. Sewage ejectors are required

$\qquad$ -
a. when a plumbing drain line runs below the sewer main line Correct
b. to help keep the basement dry
c. for all basement bathrooms
d. by code for all new construction

Any waste line that can drain properly by gravity to the sewer mains shall not be connected to the ejector.
16. Geothermal heat pumps can be more efficient than standard mini-split systems because
$\qquad$
a. they provide both heating and cooling
b. they have compound inverter compressors
c. the underground temperature is nearly constant Corect
d. they are cooled by air

In most climate regions, the underground temperature is cooler in the summer and warmer in the winter than the ambient air temperature. This increases heat pump efficiency compared to air source systems.
17. A sewage ejector that serves water closets should have a discharge pipe of at least $\qquad$ inch(es).
a. $\frac{3}{4}$
b. $1 \frac{1}{4}$ Correct
c. 2
d. 3

A minimum pipe size of $1 \frac{1}{4}$ inches is required for a sewage ejector that serves water closets. In the case of a toilet that has an integral ejector, it must have a discharge pipe of at least $\frac{3}{4}$ ".
18. The minimum clearance from a single wall stove pipe to combustible wall materials is $\qquad$ inches.
a. 12
b. 24
c. 18 Correct
d. 6

By using a heat shield, the clearance can be reduced to 6 inches.
19. Most modern metal roof flashing is made from $\qquad$ -.
a. galvanized steel
b. aluminum Correct
c. copper
d. tin

Galvanized steel will be seen on older houses and can be identified by rust stains. Copper is used on high end and restoration work.
20. Which of the following would NOT be considered a deficiency when reviewing a kitchen exhaust fan?
a. A small exterior vent cap
b. Using PVC pipe for an under-slab exhaust vent Correct
c. A missing grease filter
d. A duct that is not air tight

A downdraft kitchen exhaust vent can run beneath a concrete slab floor. For installations like this, schedule 40 PVC pipe is recommended. If an exterior vent cap is too small, it can restrict air flow and reduce the exhaust fan's performance. A missing grease filter could cause grease to enter the duct work and potentially catch fire. A duct that is not air tight could also allow grease to be distributed inside the wood cabinet above the stove and become a fire hazard.
21. A third-party claim against an inspector is made by $\qquad$ -
a. the client's attorney
b. someone who sides with the client
c. someone who is not part of the pre-inspection agreement Correct
d. the client

A third-party claim of damages is made by a person who has not entered into the pre-inspection agreement with the inspector.
22. Which of the following defects would cause an inspector to suspect there were structural problems with a home?
a. Drywall cracks that continue from the ceiling to the adjacent wall
b. Hairline cracks in the basement foundation wall
c. Water in the basement crawl space
d. Truss uplift on the top floor

Not all drywall cracks are indicative of structural issues, but a crack that runs through the ceiling and continues down an adjacent wall is a likely sign of a structural issue. Hairline concrete cracks are normal and usually do not indicate a structural problem. Water in the crawl space itself is not a structural problem, but if water pools for an excessive amount of time, it can cause a foundation to settle and shift. Finally, truss uplift, a condition caused by high winds, typically leads to cosmetic cracking that is not a structural concern.
23. The PVC exhaust vent of a high efficiency gas furnace should be pitched
a. away from the unit
b. towards the outside
c. horizontally
d. towards the unit Correct

The pitch should be towards the unit so that condensation does not drip outside.
24. For the home inspector's safety, it is important that when inspecting a crawl space with limited access to $\qquad$
a. take many pictures to document the findings
b. have another individual present to assist if help is needed Correct
c. check for structural damage
d. watch out for biting insects

An inspector should not go into a limited-access crawl space unless there is another person present that can be contacted in case help is needed.
25. Hearth extension shall extend no less than $\qquad$ inches in front of a fireplace opening.
a. 12
b. 16 Correct
C. 24
d. 30

The hearth shall extend at least 8 inches on either side of the fireplace opening.
26. The pitch on a gas water heat vent should be a minimum of $\qquad$ inch per foot.
a. $\frac{1}{8}$
b. $\frac{1}{4}$ Correct
c. $\frac{1}{2}$
d. 1

An improperly pitched vent can cause combustion gases to accumulate indoors and should be pitched at a minimum of $\frac{1}{4}$ inch per foot to prevent excess buildup.
27. The minimum size for water service is $\qquad$ inch(es)
a. $\frac{1}{2}$
b. $\frac{3}{4}$ Correct
C. 1
d. $1 \frac{1}{2}$

Fire sprinkler systems have a separate supply that may be 2 " or more.
28. The inspector opens a large double-hung window in a bedroom and finds that the sash counterbalance system is broken. He carefully lowers the sash and then
a. writes in the report that the window needs repairs
b. writes in the report to keep the window closed
c. tells the client immediately that the window condition is a safety hazard Correct
d. tells the client the condition is typical for older windows

A window sash that falls without counterbalance can cause significant injury and should be repaired promptly. In the meantime, it should be screwed shut so that it is cannot cause harm. Any safety hazard should also be included in the report.
29. An inspector notes that an older home uses aluminum electrical wire. If there were problems with the aluminum wiring, where would these problems likely be found?
a. At the higher-amp kitchen receptacles
b. In the wiring itself, between the panel and the receptacle(s)
c. At high voltage junction boxes
d. At the service panel connections

Problems with aluminum wiring typically occur at mechanical connects, such as those found in the electrical service panel. Aluminum has a tendency to oxidize or corrode over time and this can cause an excessive heat buildup in the wire. The expansion and contraction of the wire can cause connector joints to work themselves loose over time. Except for in larger appliance circuits, aluminum wire has basically disappeared in the United States.
30. What is the most common cause for a gas-fired furnace to experience short cycling?
a. The furnace is too small for the application.
b. The furnace is overheating internally.
c. The furnace filter is dirty or clogged. Correct
d. The house has large air leaks.

A dirty furnace filter is the most common cause for furnace short cycling.
31. A carbon monoxide detector is typically used to check for the presence of carbon monoxide in all of the following areas EXCEPT $\qquad$ .
a. by a gas furnace
b. in a chimney
c. in basement storage areas Correct
d. in a gas appliance vent

A carbon monoxide detector is used to detect hazardous levels of carbon monoxide created by the burning of gas appliances such as furnaces, water heaters, and boilers. The chimneys and vents of these appliances can leak, so that is why they are checked for carbon monoxide. A basement storage area without any gas appliances should not need testing for carbon monoxide.
32. All the following are aspects of binding arbitration EXCEPT $\qquad$ -
a. it is usually less expensive
b. an impartial arbitrator can be selected
c. the proceedings are private
d. there is an ability to appeal Corect

Binding arbitration does not allow for the decision to be appealed. The advantage is that the matter may be more quickly decided and closed.
33. All the following are part of business general liability insurance EXCEPT protection against
a. property damage
b. personal injury
c. damage to third-party property
d. financial loss Correct

If a client suffers financial loss, that would be covered with errors and omissions insurance.
34. A home inspector reviewing a basement foundation notices a long, $\frac{1}{4}$ inch wide crack going from top to bottom of the foundation. There does not appear to be anything wrong with the rest of the structure. The proper course of action is to $\qquad$ -
a. have a contractor install a crack monitoring device to see if the crack is getting bigger
b. note the crack on the inspection report, but take no further action
c. recommend that the owner bring in a structural engineer to evaluate the crack
d. recommend that the owner fill in the crack with an epoxy sealant

Structural issues such as foundation repairs are outside the scope of a home inspector. If an inspector finds a significant crack such as this, the owner should be notified and should be told to have a structural engineer come out to evaluate the crack. The engineer may install a crack monitoring device, or recommend that the crack be filled with an epoxy sealant, but that is a call that only a licensed structural engineer can make.
35. An inspector notices that the dirt placed behind a retaining wall is very wet. All of the following could be causes for this wetness except
a. a missing French drain at the base of the retaining wall
b. clogged or missing weep holes
c. an improperly stepped back wall system Correct
d. missing gravel and filter fabric behind the retaining wall

It is extremely important to allow for proper drainage behind a retaining wall. If water gets trapped behind a retaining wall, it can exert tremendous pressure against the wall and cause it to bow out or fail. Additionally, the wetness can cause deterioration of the retaining wall materials. A French drain, weep holes, and gravel backfill help prevent water from backing up behind the retaining wall. While an improperly stepped back wall system is a defect, it is not one that would lead to water being trapped behind a retaining wall.
36. By the ASHI standard of practice, all the following are included in an inspection of the heating system EXCEPT:
a. Flue, vent, and chimney systems
b. Distribution systems
c. Installed heating equipment
d. Heat and energy recovery systems Correct

The inspector should check to see if there is a heat source in every room. This is a basic requirement of occupancy.
37. The typical life expectancy of a gas forced-air furnace is $\qquad$ years.
a. 20 to 25
b. 5 to 10
c. 10 to 15
d. 15 to 20 Correct

Gas furnaces will frequently show signs of wear and tear after about 15 years so they should be inspected annually when they reach this age. With careful maintenance, a gas forced-air furnace can last considerably longer, with many working fine after 30 or 40 years.
38. Which of the following would NOT be considered a reportable defect when inspecting a gas forced-air heater?
a. A B-vent with less than one inch clearance from combustible materials
b. A noticeable amount of air leaking from the furnace cabinet
c. Only 32 " of clear space in front of the furnace Correct
d. A loose, shaking, or rattling fan

Building codes throughout the country typically require 30 inches of clear space in front of a furnace to allow for a technician to service the unit. Additionally, the door to the furnace room must have an opening large enough to allow the furnace to pass through in case it needs to be replaced.
39. The inspector sees that the basement steps are missing a handrail. The inspector should
a. notify the client that the missing handrail is a fall hazard Correct
b. note the missing handrail in the inspection report
c. caution the client to be careful when using the stairs
d. look for the handrail in the basement

A missing handrail on the basement steps is a serious safety issue and the homeowner should be notified of the importance of having this corrected immediately.
40. All the following are considered conflicts of interest EXCEPT $\qquad$ .
a. having a financial interest in the property
b. repairing the property less than 2 years after the inspection Correct
c. doing an inspection with a contingency
d. accepting compensation from a third party without the client's knowledge

According to the ASHI standard of practice, it is permissible to work on a property 1 year after the inspection.
41. One ton of cooling is equal to $\qquad$ cfm air flow.
a. 400 Correct
b. 600
c. 800
d. 1,000

The general rule of thumb for sizing air conditioning systems is that 400 cubic feet of air should pass through a 1-ton unit every minute; however, this number decreases depending on how efficient the system is. 1 cubic foot per minute of air per 1 square foot of floor space is another guideline used to size residential systems.
42. Which of the following air conditioning systems is NOT typically used in residential construction?
a. Variable air volume (VAV) Correct
b. Split system
c. Mini split system
d. Evaporative cooler

A variable air volume (VAV) system is used for cooling, but is primarily used in commercial buildings.

## 43. A radon detector can be placed

$\qquad$ .
a. near an interior wall Correct
b. close to an exterior window
c. on the top story of the house
d. no more than 12 " above the floor

The detector should be placed on the lowest habitable area, such as the basement or first floor, and placed between 20 inches and above the floor or two feet below the ceiling. The detector should not be near any ventilation sources and be kept at least three feet from exterior doors or windows. Finally, the radon detector can be placed near an interior wall as long as it is free from ventilation sources.
44. A typical bathroom exhaust fan has a duct diameter of $\qquad$ inches.
a. 4 Correct
b. 5
c. 7
d. 8

Most bathroom exhaust fans are rated between 80 and 120 cfm and have duct diameters of 4 or 6 inches.

