Arizona Plumbing Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. **In which position should the handle of a gas shutoff cock valve be when it is in the "on" position?**

   A. Perpendicular to the pipe

   B. Above the pipe

   C. Parallel to the pipe

   D. Below the pipe

2. **A 4-inch cleanout must have at least how many inches of clear space horizontally in front of it?**

   A. 12 inches

   B. 15 inches

   C. 18 inches

   D. 24 inches

3. **Which component is necessary for a functioning sump pump in a basement?**

   A. Pressure gauge

   B. Check valve

   C. Expansion tank

   D. Flow meter

4. **What is the capacity of a 1 1/4 inch diameter schedule 40 metallic natural gas pipe that is 60 feet long with a pressure of 2 psi, a pressure drop of 1.0 and specific gravity of 0.60?**

   A. 3000 cu ft per hr

   B. 3660 cu ft per hr

   C. 4660 cu ft per hr

   D. 5660 cu ft per hr

5. **What is the maximum allowable percentage of lead in solder used for potable water?**

   A. 0.1%

   B. 0.2%

   C. 0.3%

   D. 0.5%

6. What is the advantage of using a backflow preventer in plumbing systems?

A. To increase water pressure

B. To prevent contamination of potable water

C. To decrease water temperature

D. To assist with drainage

7. A tile shower floor shall slope to the drain at _____ inch per foot?

A. 1/8

B. 1/4

C. 1/2

D. 3/4

8. What does the term "no access" refer to in plumbing terminology?

A. No access

B. Limited entry point

C. Restricted area for maintenance

D. Unavailable service option

9. What is the minimum required height of a vent termination point above a newly converted sun deck?

A. 5 feet

B. 6 feet

C. 7 feet

D. 8 feet

10. What is the minimum psi required when testing a water supply system using the air test method?

A. 30 psi

B. 40 psi

C. 50 psi

D. 60 psi

Answers

1. C
2. C
3. B
4. C
5. B
6. B
7. B
8. A
9. C
10. C

Explanations

1. In which position should the handle of a gas shutoff cock valve be when it is in the "on" position?

A. Perpendicular to the pipe

B. Above the pipe

C. Parallel to the pipe

D. Below the pipe

The handle of a gas shutoff cock valve should be parallel to the pipe when it is in the "on" position. This orientation signifies that the valve is fully open, allowing gas to flow through the piping system. It is a standardized practice in plumbing and gas installations to use this alignment to indicate an open state, making it easier for professionals and homeowners alike to quickly identify whether the gas is on or off. In contrast, a perpendicular position to the pipe typically indicates that the valve is closed, thereby cutting off gas flow. This clear visual distinction is crucial for safety and efficient operation, as it helps prevent accidental gas leaks. Other options that suggest different vertical or horizontal orientations would not convey proper operational status and may lead to confusion or potential safety hazards.

2. A 4-inch cleanout must have at least how many inches of clear space horizontally in front of it?

A. 12 inches

B. 15 inches

C. 18 inches

D. 24 inches

A 4-inch cleanout must have at least 18 inches of clear space horizontally in front of it to ensure accessibility for maintenance and inspection. This requirement is in place to facilitate easy access to the cleanout so plumbers can efficiently perform necessary tasks such as snaking a drain or performing other cleaning procedures. Adequate clearance around plumbing fixtures is vital to prevent obstructions which can delay repairs or lead to ineffective cleaning. Having the correct amount of space also complies with plumbing codes that are designed to ensure safe and practical conditions for plumbing maintenance.

3. Which component is necessary for a functioning sump pump in a basement?

A. Pressure gauge

B. Check valve

C. Expansion tank

D. Flow meter

A check valve is an essential component for a properly functioning sump pump in a basement. Its primary function is to prevent the backflow of water into the sump pit once the pump has removed excess water. When the sump pump operates and the water is pumped out, the check valve ensures that the water does not flow back down the discharge pipe, which could lead to the pit filling up again and requiring the pump to turn on more frequently. This is critical in maintaining a dry basement and ensuring that the sump pump operates efficiently. If the check valve were not present, water could easily return to the pit, reducing the effectiveness of the sump pump and potentially leading to flooding or water damage in the basement area over time. In contrast, although pressure gauges, expansion tanks, and flow meters serve important functions in various plumbing contexts, they are not necessary for the basic operation of a sump pump in managing water levels in a basement.

4. What is the capacity of a 1 1/4 inch diameter schedule 40 metallic natural gas pipe that is 60 feet long with a pressure of 2 psi, a pressure drop of 1.0 and specific gravity of 0.60?

A. 3000 cu ft per hr

B. 3660 cu ft per hr

C. 4660 cu ft per hr

D. 5660 cu ft per hr

To determine the capacity of a 1 1/4 inch diameter Schedule 40 metallic natural gas pipe, we can use the gas flow formula that takes into account the pipe diameter, length, pressure, pressure drop, and specific gravity of the gas. In this instance, the diameter of the pipe, pressure drop, and specific gravity are crucial parameters that affect the flow rate. The diameter of the pipe is significant because it directly influences the cross-sectional area available for gas flow, with larger diameters allowing more gas to pass through. For a 1 1/4 inch pipe, which translates to approximately 1.66 inches in inner diameter for Schedule 40, the area can be calculated, supporting a higher flow capacity. The pressure of 2 psi and specific gravity of 0.60 indicate the type of gas being used and its density. A pressure drop of 1.0 before reaching the final delivery point also provides insight into how much the pressure will decrease as the gas travels through the pipe, ultimately affecting the flow rate. Using standard gas flow rate formulas and charts available for natural gas applications, engineers can find that the combination of these parameters results in a flow capacity of approximately 4660 cubic feet per hour. This

5. What is the maximum allowable percentage of lead in solder used for potable water?

A. 0.1%

B. 0.2%

C. 0.3%

D. 0.5%

The maximum allowable percentage of lead in solder used for potable water is 0.2%. This standard is established to ensure the safety and health of drinking water. The reduction of lead content in plumbing materials, particularly solder, is a critical step toward minimizing lead exposure, which can have serious health implications, especially for vulnerable populations such as children and pregnant women. Historically, lead was commonly used in solder and plumbing systems, but legislative changes and growing awareness of its toxicity have led to stricter regulations. The standard of 0.2% aligns with regulatory frameworks like the Safe Drinking Water Act in the United States, which aims to protect public health by limiting lead in drinking water systems to safe levels. This knowledge is essential for plumbers and anyone involved in designing or maintaining systems that deliver potable water.

6. What is the advantage of using a backflow preventer in plumbing systems?

A. To increase water pressure

B. To prevent contamination of potable water

C. To decrease water temperature

D. To assist with drainage

The advantage of using a backflow preventer in plumbing systems is primarily to prevent contamination of potable water. A backflow preventer acts as a safety device that ensures water flows in one direction only, thereby preventing any potential reverse flow of contaminated water back into the clean water supply. This is essential for maintaining the safety and quality of drinking water, as any backflow could introduce harmful substances or pollutants. When considering the function of a backflow preventer, its role in safeguarding public health becomes clear. In various plumbing scenarios—such as those involving irrigation systems, fire protection systems, or even auxiliary water supplies—the risk of backflow is a significant concern. The backflow preventer mitigates this hazard by automatically closing if any backflow is detected, thus protecting the integrity of the potable water system. In contrast, options related to increasing water pressure, decreasing water temperature, or assisting with drainage do not align with the primary function of a backflow preventer. Instead, these aspects pertain to other plumbing components and systems designed for specific purposes not connected to backflow prevention.

7. A tile shower floor shall slope to the drain at _____ inch per foot?

A. 1/8

B. 1/4

C. 1/2

D. 3/4

The correct measurement for a tile shower floor to slope to the drain is a quarter inch per foot. This slope is recommended to ensure proper drainage, preventing water from pooling on the shower floor, which can lead to mold and mildew growth, as well as structural damage over time. A slope of 1/4 inch per foot is considered optimal for facilitating effective water runoff while still being gentle enough to prevent instability on the tiles. Any slope less than this, such as 1/8 inch per foot, may not provide adequate drainage, leading to standing water. On the other hand, a steeper slope, like 1/2 inch per foot or 3/4 inch per foot, could create safety hazards as it may make the floor too steep, which could increase the risk of slipping. It also may complicate the tiling process and affect the aesthetics of the shower. Thus, 1/4 inch per foot effectively balances functionality and safety.

8. What does the term "no access" refer to in plumbing terminology?

A. No access

B. Limited entry point

C. Restricted area for maintenance

D. Unavailable service option

The term "no access" in plumbing terminology indicates that there is no way to reach or enter a particular area that requires inspection, maintenance, or repair. This can refer to spaces like behind walls, under floors, or in areas of a building that are enclosed or otherwise difficult to navigate. Understanding this term is crucial for plumbers, as it highlights the importance of planning for accessibility in plumbing design and installation, ensuring that vital components are reachable for future service needs. When an area is designated as having "no access," it typically complicates future repairs or inspections since plumbers would have to find alternative methods to access such spaces, often involving more labor and time.

9. What is the minimum required height of a vent termination point above a newly converted sun deck?

A. 5 feet

B. 6 feet

C. 7 feet

D. 8 feet

The minimum required height of a vent termination point above a newly converted sun deck is set to ensure that the venting system operates effectively and that the discharged gases do not create hazards for occupants or interfere with outdoor activities. In this case, the requirement of a 7-foot height is established to promote adequate dispersion of any gases away from the area where people might gather and ensure compliance with safety standards. This height helps prevent the accumulation of potentially harmful exhaust fumes in the vicinity of the sun deck, where people may be relaxing or socializing. Adequate vent height is crucial for both safety and comfort, as it reduces the risk of inhalation or exposure to vented gases. Therefore, the choice of 7 feet is aligned with these safety principles and regulations. Other options propose heights that are either too low to provide sufficient dispersion or do not meet the established codes for vent termination in relation to habitable areas, which necessitate a taller termination point to maintain air quality and safety in outdoor spaces.

10. What is the minimum psi required when testing a water supply system using the air test method?

A. 30 psi

B. 40 psi

C. 50 psi

D. 60 psi

The correct minimum psi required when performing an air test on a water supply system is 50 psi. This standard is based on plumbing codes that ensure adequate pressure is maintained during testing to identify any potential leaks in the system. When testing, maintaining this minimum pressure allows for more reliable detection of leaks, as lower pressure may not effectively reveal small faults in joints or connections. The 50 psi standard helps ensure that the system can withstand the working pressures it will face when fully operational, thus promoting safety and integrity in plumbing installations. Higher minimum thresholds for psi, such as in the other choices, are not typically required for air testing, ensuring that the testing process balances efficacy with practicality and safety. Therefore, setting 50 psi as the baseline provides a rigorous yet achievable benchmark for plumbing professionals.