Massachusetts Plumbers Journeyman Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. **Which establishments served by a municipal sanitary sewer and seating 20 patrons or more shall incorporate food waste grinders?**

   A. Convenience stores

   B. Hospitals

   C. Warehouses

   D. Restaurants

2. **What is the minimum thickness of a Brass closet flange as per regulations?**

   A. 1/16" inch

   B. 1/8" inch

   C. 1/4" inch

   D. 1/2" inch

3. **What is the maximum allowed piping distance from the trap outlet to the automatic vent fitting?**

   A. 6 inches

   B. 8 inches

   C. 10 inches

   D. 12 inches

4. **According to sizing requirements, what should be the cross-sectional area at the valve seat of vacuum relief valves?**

   A. Equal to the cold water supply size

   B. Two pipe sizes smaller than the cold water supply

   C. One pipe size smaller than the cold water supply

   D. Half the cold water supply size

5. **What should be the size of the relief vent concerning the vent stack it connects to?**

   A. Equal to the size of the vent stack

   B. Twice the size of the vent stack

   C. Half the size of the vent stack

   D. One size smaller than the vent stack

6. When installing an outside grease interceptor, what is the minimum pipe diameter for the chamber vent?

- **A. 2 inches**
- **B. 3 inches**
- **C. 4 inches**
- **D. 5 inches**

7. When connecting piping to cast iron soil pipe hubs, what materials should be used?

- **A. A. Silicone only**
- **B. B. One-inch of molten lead**
- **C. C. Cement**
- **D. D. Duct tape**

8. How should the sanitary and storm drainage systems of a building be designed in relation to each other?

- **A. A. Combined**
- **B. B. Separate**
- **C. C. Overlapping**
- **D. D. Alternating**

9. When demolishing a building, what are two requirements that must be met related to plumbing?

- **A. Obtain a demolition permit and disconnect electrical wiring**
- **B. Secure a plumbing permit and ensure all connections are gas and water tight**
- **C. Notify the local fire department and remove all window panes**
- **D. Install new plumbing fixtures and repaint the walls**

10. What is a pipe that conveys the discharge of toilets, urinals, or fixtures similar to the building drain or building sewer, with or without discharge from other fixtures?

- **A. Soil Pipe**
- **B. Developed Length**
- **C. Trap Seal**
- **D. Liquid Waste**

Answers

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

Explanations

1. Which establishments served by a municipal sanitary sewer and seating 20 patrons or more shall incorporate food waste grinders?

A. Convenience stores

B. Hospitals

C. Warehouses

D. Restaurants

The correct selection highlights the requirement for restaurants to incorporate food waste grinders when they are served by a municipal sanitary sewer and have seating for 20 patrons or more. This mandate is primarily aimed at promoting better waste management practices in establishments that handle significant amounts of food waste. Restaurants typically generate a substantial volume of food debris, which, if not processed properly, can lead to clogs and other issues within the municipal sewer system. By installing food waste grinders, restaurants can effectively reduce the amount of solid waste that is sent to landfills and help ensure that food waste is processed more efficiently within the sewage treatment facilities. This aligns with broader environmental goals and regulations aimed at minimizing the ecological impact of food waste. While convenience stores, hospitals, and warehouses may also handle food, they do not share the same operational context regarding food preparation and waste generation as restaurants, making them less likely to be subject to this specific requirement in Massachusetts.

2. What is the minimum thickness of a Brass closet flange as per regulations?

A. 1/16" inch

B. 1/8" inch

C. 1/4" inch

D. 1/2" inch

The minimum thickness for a brass closet flange according to plumbing regulations is 1/8 inch. Flanges serve a critical role in providing a secure connection between the toilet and the floor, ensuring both stability and preventing leaks. A thickness of 1/8 inch strikes a balance between durability and functionality, providing enough strength to support the weight of a toilet while being manageable for installation purposes. Thicker flanges may lead to complications during installation or may not be compliant with specific regulatory standards, which aim to standardize materials for safety and effectiveness in plumbing systems.

3. What is the maximum allowed piping distance from the trap outlet to the automatic vent fitting?

A. 6 inches

B. 8 inches

C. 10 inches

D. 12 inches

The correct answer is 12 inches. In plumbing systems, particularly when working with traps and venting, it's critical to ensure that the distance from the trap outlet to the automatic vent fitting is within prescribed limits to ensure proper drainage and venting of the system. A distance of 12 inches is the maximum allowed because it helps maintain the efficiency of the venting system. If the distance exceeds this, it can lead to potential issues such as siphoning or malfunction of the trap, which can allow sewer gases to enter the living space and compromise sanitation. Therefore, adhering to this specific measurement is essential for safe and effective plumbing practices.

4. According to sizing requirements, what should be the cross-sectional area at the valve seat of vacuum relief valves?

A. Equal to the cold water supply size

B. Two pipe sizes smaller than the cold water supply

C. One pipe size smaller than the cold water supply

D. Half the cold water supply size

The correct answer is that the cross-sectional area at the valve seat of vacuum relief valves should be one pipe size smaller than the cold water supply. This sizing is critical because it allows for adequate airflow while maintaining enough pressure differential to function effectively. This configuration helps prevent potential damage due to vacuum conditions that can occur within piping systems, especially in heated water applications or when cooling occurs rapidly. Having the valve seat sized appropriately—not exceeding one pipe size smaller than the cold water supply—ensures that the valve can act rapidly to relieve any vacuum conditions without being excessively restrictive. This contributes to overall system efficiency and safety. Other choices suggest sizing that might be too small or too large for effective operation, which could compromise the functionality of the vacuum relief valve. Ensuring a proper size is essential to both the operational efficiency and the safety of plumbing systems.

5. What should be the size of the relief vent concerning the vent stack it connects to?

A. Equal to the size of the vent stack

B. Twice the size of the vent stack

C. Half the size of the vent stack

D. One size smaller than the vent stack

The correct response indicates that the size of the relief vent should be equal to the size of the vent stack it connects to. This is important because maintaining the same size for both the relief vent and the vent stack ensures that the system can effectively handle pressure and allow for proper air circulation. This alignment helps prevent issues such as back pressure, siphoning, or inadequate ventilation, which can lead to drainage problems or trap failures. In plumbing systems, ensuring that vents are appropriately sized is crucial for maintaining the overall health and efficiency of the system. Proper venting allows wastewater to flow freely while providing air in the drainage system to prevent vacuum conditions. Therefore, matching the sizes of the relief vent and the vent stack is critical in achieving optimal system performance.

6. When installing an outside grease interceptor, what is the minimum pipe diameter for the chamber vent?

A. 2 inches

B. 3 inches

C. 4 inches

D. 5 inches

The minimum pipe diameter for the chamber vent of an outside grease interceptor is 4 inches. This is to ensure that there is adequate airflow to prevent the buildup of harmful gases and to maintain proper functioning of the interceptor. A larger diameter helps to facilitate better ventilation, allowing for the escape of gases that may accumulate in the system and preventing potential pressure buildup which could lead to malfunctions or hazards. In grease interceptors, maintaining proper venting is crucial for efficient operation, as it helps to ensure that the interceptor functions effectively without blockage or buildup. Insufficient venting can lead to issues such as odor problems, reduced efficiency in grease removal, and potential failure of the system. Therefore, a minimum diameter of 4 inches is established to assure sufficient venting for these systems.

7. When connecting piping to cast iron soil pipe hubs, what materials should be used?

A. A. Silicone only

B. B. One-inch of molten lead

C. C. Cement

D. D. Duct tape

When connecting piping to cast iron soil pipe hubs, using one inch of molten lead is the preferred method due to its effectiveness in creating a strong, leak-proof seal. Molten lead has been a traditional material for this type of connection because it expands upon cooling, filling any gaps and ensuring a tight fit that can withstand the pressure and movement associated with plumbing systems. This method is durable and long-lasting, especially suitable for cast iron, which is known for its strength and resistance to corrosion. Other materials listed have limitations or are inappropriate for this application. Silicone, for instance, may provide a temporary seal but lacks the structural integrity and durability required for long-term use in plumbing systems handling waste. Cement can also be utilized in certain situations but is not commonly applied to cast iron connections specifically. Duct tape is not suitable for plumbing applications due to its inability to withstand the conditions present in high-pressure or moisture-rich environments.

8. How should the sanitary and storm drainage systems of a building be designed in relation to each other?

A. A. Combined

B. B. Separate

C. C. Overlapping

D. D. Alternating

The design of sanitary and storm drainage systems in a building should be separate. This means that the wastewater from toilets, sinks, and other fixtures (sanitary drainage) is routed through a different system than the rainwater and surface water (storm drainage). Having separate systems is important for several reasons. Primarily, it helps prevent contamination of stormwater by sewage, which can lead to significant health risks and environmental contamination. Additionally, separate systems facilitate more efficient treatment of wastewater, as sewage generally goes to treatment facilities while rainwater can be managed through either treatment or direct drainage into the environment. Keeping these systems separate can also reduce the risk of system overload during heavy storms, as combining them can lead to sewer backups and overflows. Proper separation helps to ensure that each system can operate effectively and maintain public health and safety standards.

9. When demolishing a building, what are two requirements that must be met related to plumbing?

A. Obtain a demolition permit and disconnect electrical wiring

B. Secure a plumbing permit and ensure all connections are gas and water tight

C. Notify the local fire department and remove all window panes

D. Install new plumbing fixtures and repaint the walls

The correct choice focuses on the essential requirements for safe and compliant demolition in relation to plumbing. Securing a plumbing permit is crucial because it ensures that all plumbing systems are properly inspected and accounted for before demolition takes place. This permit verifies that any modifications to existing plumbing systems are completed in accordance with local codes, thereby protecting public health and safety. Additionally, ensuring all connections are gas and water tight is vital to prevent leaks or hazardous situations during the demolition process. These precautions help avoid potential environmental impacts or safety hazards related to escaped gas or water infiltration, which could pose risks both during and after the demolition. The other options, while they mention relevant actions, do not directly address the key plumbing-related requirements necessary when demolishing a building. For instance, obtaining a demolition permit and disconnecting electrical wiring relates to broader demolition safety and compliance but does not specifically pertain to plumbing. Notifying the local fire department and removing window panes may be considered safety measures, but they do not reflect plumbing concerns. Lastly, installing new plumbing fixtures and repainting walls do not apply in the context of a demolition scenario, as these actions would typically take place after demolition rather than during.

10. What is a pipe that conveys the discharge of toilets, urinals, or fixtures similar to the building drain or building sewer, with or without discharge from other fixtures?

A. Soil Pipe

B. Developed Length

C. Trap Seal

D. Liquid Waste

A soil pipe is defined as a pipe specifically designed to carry the discharge from toilets, urinals, and similar fixtures, often connecting to the building drain or sewer system. This type of pipe is essential for ensuring that waste is efficiently removed from the building and transported to the appropriate waste disposal system. The design and function of soil pipes are paramount to plumbing systems, as they help in maintaining hygiene and preventing backflow of sewage. The other terms listed do not accurately describe the pipe's function in the same way as a soil pipe does. For example, developed length refers to the total length of a pipe installed, while trap seal discusses the water barrier in traps that prevents sewer gases from entering a building. Liquid waste typically describes the type of waste being handled but does not denote the type of pipe used for disposal. Therefore, calling this pipe a soil pipe is the most correct identification based on its specific role in plumbing systems.