

# Texas Tradesman Plumber-Limited License Practice Exam (Sample)

## Study Guide



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**SAMPLE**

## **Questions**

- 1. What is typically the highest temperature for tempered water?**
  - A. 85°F**
  - B. 90°F**
  - C. 110°F**
  - D. 120°F**
- 2. What must be ensured for compliance with the plumbing code when installing a new water heater?**
  - A. The installation must use the cheapest materials available**
  - B. It must meet local codes and permits must be obtained**
  - C. It can be installed without permits**
  - D. It should only be inspected after installation**
- 3. What does the term 'negative pressure' indicate in a plumbing system?**
  - A. High water pressure in pipes**
  - B. A condition that can cause backflow**
  - C. Optimal drainage functionality**
  - D. A seal in the system**
- 4. What is the main purpose of plumbing ventilation?**
  - A. To provide additional space for pipes**
  - B. To ensure proper drainage and prevent gas accumulation**
  - C. To allow for easier installation of fixtures**
  - D. To increase the speed of water flow**
- 5. Hot and cold water piping should be tested with?**
  - A. Air pressure**
  - B. Water pressure**
  - C. Vacuum**
  - D. Electricity**

- 6. What type of material is commonly used for water supply lines in residential plumbing?**
- A. Galvanized steel**
  - B. Copper or PEX**
  - C. PVC or ABS**
  - D. Cast iron**
- 7. What is the maximum distance between plumbing fixtures and a vent stack according to code for a toilet?**
- A. 5 feet**
  - B. 7 feet**
  - C. 10 feet**
  - D. 12 feet**
- 8. Which component connects multiple plumbing fixtures to a larger drainage line?**
- A. Branch**
  - B. Trunk**
  - C. Main**
  - D. Collector**
- 9. What defines lead-free pipe and fittings in plumbing?**
- A. Containing not more than 5.0 percent lead**
  - B. Containing not more than 10.0 percent lead**
  - C. Containing not more than 8.0 percent lead**
  - D. Containing no lead at all**
- 10. How does an indirect waste pipe discharge into the drainage system?**
- A. Through a direct connection**
  - B. Through an air break or gap**
  - C. By gravity alone**
  - D. Using a pump**

## **Answers**

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

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## **Explanations**

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**1. What is typically the highest temperature for tempered water?**

- A. 85°F**
- B. 90°F**
- C. 110°F**
- D. 120°F**

The correct answer is based on the standard definitions and requirements for tempered water, which is typically used in situations where a controlled temperature is necessary for comfort and safety, such as in residential hot water systems or various plumbing applications. Tempered water is generally defined as water that is heated to a maximum temperature of around 110°F. This temperature is warm enough to provide comfort without posing a significant risk of scalding. Temperatures higher than 120°F can lead to serious burns, especially in vulnerable populations such as children and the elderly. By setting the upper limit for tempered water at 110°F, it ensures safety during everyday use while also complying with safety regulations. This makes it essential for plumbing professionals to be aware of and adhere to these temperature guidelines when installing or maintaining hot water systems. Therefore, the choice of 110°F reflects industry standards and safety practices in plumbing regarding temperate water use.

**2. What must be ensured for compliance with the plumbing code when installing a new water heater?**

- A. The installation must use the cheapest materials available**
- B. It must meet local codes and permits must be obtained**
- C. It can be installed without permits**
- D. It should only be inspected after installation**

Choosing to ensure that the water heater installation meets local codes and that the required permits are obtained is crucial for several reasons. The plumbing code serves as a guideline to ensure the safety, efficiency, and performance of plumbing systems, including water heaters. Compliance with local codes often involves adhering to specific regulations regarding installation practices, materials used, the positioning of the heater, venting requirements, and safety measures. Obtaining the necessary permits signifies that a professional has reviewed the proposed installation to ensure it aligns with safety standards and local regulations. This step is essential in maintaining proper documentation and accountability, and it assures that the installation has been inspected to verify compliance during and after the installation process. By adhering to local codes and securing the appropriate permits, a plumber can also protect the homeowner from potential legal issues or liabilities related to non-compliance, ensuring that the installation is safe and reliable.

**3. What does the term 'negative pressure' indicate in a plumbing system?**

- A. High water pressure in pipes**
- B. A condition that can cause backflow**
- C. Optimal drainage functionality**
- D. A seal in the system**

The term 'negative pressure' in a plumbing system refers to a situation that can lead to backflow. When negative pressure occurs, it creates a vacuum effect in the system, which can draw water from a source, such as a sanitary waste system or sewer, back into clean water lines. This condition poses a risk to the safety and sanitation of the water supply, as it can cause contaminants to enter the potable water supply. It's essential for plumbing systems to be designed to prevent negative pressure situations through various means, such as properly installed air gaps and backflow prevention devices. Understanding this concept is vital for ensuring safe plumbing practices and maintaining the integrity of water quality in plumbing systems.

**4. What is the main purpose of plumbing ventilation?**

- A. To provide additional space for pipes**
- B. To ensure proper drainage and prevent gas accumulation**
- C. To allow for easier installation of fixtures**
- D. To increase the speed of water flow**

The main purpose of plumbing ventilation is to ensure proper drainage and prevent gas accumulation. Ventilation in plumbing systems is crucial for maintaining equal air pressure within the drainage system, which allows wastewater to flow freely without creating a vacuum that could impede drainage. When ventilation is correctly implemented, it facilitates the escape of sewer gases, protecting the health and safety of building occupants. Proper ventilation also helps to prevent backflow and siphoning of traps, which can lead to unpleasant odors and potentially harmful gases entering living spaces. This function of maintaining airflow and pressure balance is essential for the efficient operation of the plumbing system overall.

**5. Hot and cold water piping should be tested with?**

- A. Air pressure
- B. Water pressure**
- C. Vacuum
- D. Electricity

Testing hot and cold water piping with water pressure is a standard practice in plumbing. When a water system is filled with water and subjected to pressure, it helps to identify any leaks or weaknesses in the piping, fittings, and fixtures. Water pressure testing allows for a thorough assessment of the system's integrity because water will leak out of any existing cracks or joint failures, making them easier to identify and address. Additionally, water pressure tests are typically conducted to ensure that the piping can withstand the operating pressure it will encounter during normal use. This testing is essential to maintain safety standards and ensure proper function in the plumbing system. Choosing air pressure for testing can lead to different risks, as it may not effectively reveal small leaks that water test would catch. Furthermore, testing with electricity is not appropriate for piping systems, as water and electricity can pose serious hazards. Therefore, the methodology of using water pressure aligns with industry standards and best practices in plumbing.

**6. What type of material is commonly used for water supply lines in residential plumbing?**

- A. Galvanized steel
- B. Copper or PEX**
- C. PVC or ABS
- D. Cast iron

Copper and PEX (cross-linked polyethylene) are widely recognized as the standard materials for water supply lines in residential plumbing due to their unique properties and advantages. Copper tubing is known for its durability, resistance to corrosion, and ability to withstand high pressure and temperatures. It has been a traditional choice in plumbing for many years and is favored for its longevity and reliability. Copper's antimicrobial properties also help to keep drinking water safe and clean. PEX, on the other hand, has gained popularity more recently because it is flexible, lightweight, and easy to install. It can be snaked around walls and through tight spaces more easily than rigid pipes, which can reduce the number of fittings needed in a piping system. PEX also has excellent resistance to scale and chlorine, doesn't corrode, and is less prone to breaking in freezing conditions. Both materials meet the health and safety codes required for potable water supply, making them appropriate choices for residential plumbing systems. The combination of these benefits explains why they are prevalent in modern plumbing designs as reliable options for water supply lines.

**7. What is the maximum distance between plumbing fixtures and a vent stack according to code for a toilet?**

- A. 5 feet**
- B. 7 feet**
- C. 10 feet**
- D. 12 feet**

The maximum distance between plumbing fixtures, including toilets, and a vent stack according to plumbing codes is set to ensure proper air circulation and prevent the risk of pressure imbalances that could lead to drainage issues or sewer gas infiltration. The code specifies that this distance should not exceed 10 feet for a toilet. This distance allows the waste from the toilet to drain properly while being adequately ventilated, ensuring that any air displaced during the draining process can equalize without causing siphonage or other malfunctions in the plumbing system. In many jurisdictions, including Texas, adherence to these codes is critical for maintaining sanitary and functional plumbing systems. Understanding this distance requirement is essential for any plumbing professional, as improper venting can lead to significant plumbing issues, making knowledge of this rule important for passing licensure exams and ensuring compliance in practical applications.

**8. Which component connects multiple plumbing fixtures to a larger drainage line?**

- A. Branch**
- B. Trunk**
- C. Main**
- D. Collector**

The component that connects multiple plumbing fixtures to a larger drainage line is known as the main. In plumbing systems, the main drainage line serves as the backbone of the drainage system, carrying wastewater away from various fixtures throughout a building to the municipal sewer or septic tank. The main typically receives contributions from branch lines, which are smaller pipes that serve individual fixtures or groups of fixtures. Without the main, the collection and transport of wastewater from these various fixtures would be inefficient and could lead to blockages or backflow problems. Therefore, within the hierarchy of plumbing piping, the main plays a crucial role in ensuring that wastewater is effectively routed away, maintaining the functionality and hygiene of the plumbing system.

**9. What defines lead-free pipe and fittings in plumbing?**

- A. Containing not more than 5.0 percent lead**
- B. Containing not more than 10.0 percent lead**
- C. Containing not more than 8.0 percent lead**
- D. Containing no lead at all**

The correct definition of lead-free pipe and fittings in plumbing is one that contains not more than 0.25 percent lead, based on the standards set by regulations such as the Reduction of Lead in Drinking Water Act. However, in the context of this question, the term "lead-free" commonly aligns with options that may use lead percentage as a measurement of compliance with safety standards. Choosing the option that specifies not more than 8.0 percent lead may seem reasonable at a glance, but it does not align with the most current regulations which define lead-free materials far more stringently. A percentage as high as 8.0 would still allow significant lead content, which poses health risks, particularly in drinking water applications. The emphasis on minimizing lead exposure, especially in plumbing where materials come in contact with potable water, underscores the importance of adhering to the strictest definitions of lead-free. Understanding these definitions is critical for plumbing professionals. Using materials that exceed the lead limits can have serious health implications, and thus proper training and knowledge on identifying compliant materials ensure safety and regulatory adherence in plumbing practices.

**10. How does an indirect waste pipe discharge into the drainage system?**

- A. Through a direct connection**
- B. Through an air break or gap**
- C. By gravity alone**
- D. Using a pump**

An indirect waste pipe discharges into the drainage system through an air break or gap. This method is designed to prevent any potential backflow or contamination of potable water systems. When the waste pipe terminates in an open receptacle that is above the drain line, it creates a physical separation between the waste and the sanitary drainage system. The air gap acts as a barrier, allowing waste to flow out into the drainage without risking cross-contamination with the drinking water supply. This is particularly crucial for appliances like sinks or washing machines, where there may be a risk of pollutants returning into clean water sources. In contrast, a direct connection or utilizing a pump does not establish that necessary separation, leading to potential hazards. Similarly, relying solely on gravity may not always ensure a safe and proper discharge, especially in certain plumbing configurations. Therefore, an air break or gap is the required and safest method for discharging an indirect waste pipe.