

NCCER Pipefitter Certification Practice Test (Sample)

Study Guide



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SAMPLE

Questions

- 1. What is the inner diameter of 10" schedule 80 piping?**
 - A. 9 3/16**
 - B. 9 5/16**
 - C. 9 9/16**
 - D. 10 1/16**
- 2. What is a check valve?**
 - A. A valve that restricts flow in one direction**
 - B. A valve that increases system pressure**
 - C. A valve that prevents backflow in a piping system**
 - D. A valve used for flow measurement**
- 3. What does PPE stand for in relation to safety?**
 - A. Personal Protective Equipment**
 - B. Precision Preventive Equipment**
 - C. Public Protection Equipment**
 - D. Professional Protection Equipment**
- 4. What does the symbol refer to?**
 - A. Concentric reducer**
 - B. Eccentric reducer**
 - C. Check valve**
 - D. P-Trap**
- 5. What equipment is commonly used for cutting pipes?**
 - A. Pipe cutters, saws, and hacksaws**
 - B. Wrenches and pliers**
 - C. Drills and chisels**
 - D. Grinders and sanders**
- 6. How do you ensure proper alignment when installing pipes?**
 - A. By using quick measurements and estimating**
 - B. By using leveling tools and measurement devices to maintain accurate positioning**
 - C. By relying solely on visual inspection**
 - D. By following the old alignment from previous installations**

- 7. Trenches must be designed, excavated, and shored according to which standards?**
- A. ASME standards**
 - B. API standards**
 - C. Company standards**
 - D. OSHA standards**
- 8. Flat Face Flanges require which type of gasket?**
- A. Spiral wound**
 - B. Full face**
 - C. Strip**
 - D. Jacketed**
- 9. Ground fault circuit interrupters should be located?**
- A. Closest to the power tool**
 - B. At the source of power**
 - C. On individual extension cords**
 - D. On cords with only 3 prong connections**
- 10. Which of the following is NOT a type of pipe joint?**
- A. Welded joint**
 - B. Threaded joint**
 - C. Pinned joint**
 - D. Flanged joint**

Answers

SAMPLE

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

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Explanations

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1. What is the inner diameter of 10" schedule 80 piping?

- A. 9 3/16
- B. 9 5/16
- C. 9 9/16**
- D. 10 1/16

The inner diameter of 10-inch schedule 80 piping is 9 5/8 inches. Schedule 80 pipes have thicker walls than schedule 40 pipes, which reduces the inner diameter more significantly. When referencing pipe dimensions, it's important to understand that the nominal size (such as 10 inches) does not directly translate to the actual inner diameter due to variations in wall thickness. In this case, schedule 80 piping typically has an inner diameter that is standardized at 9 5/8 inches. This size is crucial for pipefitting and system design as it affects flow rates, pressure drop calculations, and compatibility with fittings and valves. Knowing the correct inner diameter helps ensure proper installation and system performance.

2. What is a check valve?

- A. A valve that restricts flow in one direction
- B. A valve that increases system pressure
- C. A valve that prevents backflow in a piping system**
- D. A valve used for flow measurement

A check valve is specifically designed to prevent backflow in a piping system, ensuring that fluid flows in only one direction. This function is crucial in various applications, as it protects pumps, filters, and other system components from damage that can occur if liquid flows backward. When fluid attempts to flow in the reverse direction, the valve's internal mechanism, often a disc or ball, automatically closes, blocking the reverse flow. This operational characteristic is essential in systems like water supply lines and heating systems, where maintaining proper flow direction is necessary for efficient and safe operation. Understanding the role of a check valve provides insight into its significance in fluid systems, as backflow can lead to contamination, pressure loss, and system inefficiencies. While the other choices describe different types of valves or functionalities, they do not encapsulate the primary purpose of a check valve, which is to control and maintain the correct flow direction by preventing backflow.

3. What does PPE stand for in relation to safety?

- A. Personal Protective Equipment**
- B. Precision Preventive Equipment
- C. Public Protection Equipment
- D. Professional Protection Equipment

PPE stands for Personal Protective Equipment. This term encompasses a wide variety of gear and clothing designed to provide safety and protection to workers in hazardous environments. Common examples of PPE include hard hats, safety goggles, gloves, ear protection, and respiratory masks. The primary purpose of personal protective equipment is to minimize exposure to workplace hazards that could lead to injury or illness, thereby ensuring the safety and well-being of workers. Understanding the significance of PPE is crucial in fields like pipefitting, where individuals may encounter physical hazards, chemical exposure, and other risks associated with the job. Proper training in the use of PPE helps workers recognize the importance of wearing the right equipment for specific tasks, addressing the requirements for their safety and compliance with regulations.

4. What does the symbol refer to?

- A. Concentric reducer
- B. Eccentric reducer**
- C. Check valve
- D. P-Trap

The symbol in question is associated with an eccentric reducer. An eccentric reducer is a type of fitting used in piping systems that changes the diameter of the pipe in a way that maintains the same elevation of the piping system. This is especially important in applications where the flow of liquid or gas needs to be consistent and uninterrupted, as it prevents the creation of air pockets or uneven flow that can occur with concentric reducers. Eccentric reducers are typically used in horizontal piping runs to allow for a smooth transition from a larger to a smaller diameter pipe while keeping the top of the pipes at the same height. This is crucial in drainage systems and in applications where maintaining a specific slope is necessary, such as in water and wastewater operations. The characteristic of having an offset centerline is what differentiates the eccentric reducer from other types of fittings and is why this symbol specifically denotes an eccentric reducer in schematics.

5. What equipment is commonly used for cutting pipes?

- A. Pipe cutters, saws, and hacksaws**
- B. Wrenches and pliers
- C. Drills and chisels
- D. Grinders and sanders

The use of pipe cutters, saws, and hacksaws is a standard practice for cutting pipes effectively and efficiently. Pipe cutters are specifically designed for this purpose, allowing for clean, precise cuts without the risk of deformation. This is critical in plumbing and pipefitting, where joining pipes requires accurate dimensions to ensure proper fit and function. Saws, such as reciprocating saws or hand saws, can also handle larger or thicker pipes and provide versatility in various cutting tasks. Hacksaws, though more manual and labor-intensive, are also suitable for cutting through various materials, offering control over the cutting process. The other tools listed serve different functions and are not suitable for cutting piping materials. Wrenches and pliers are primarily used for tightening and loosening fittings or holding pipes, while drills and chisels are utilized for creating holes or shaping materials rather than cutting through pipe. Grinders and sanders are more focused on surface finishing rather than the initial cutting procedure. Understanding the appropriate tools for specific tasks is essential in pipefitting to ensure efficiency and quality in the work performed.

6. How do you ensure proper alignment when installing pipes?

- A. By using quick measurements and estimating
- B. By using leveling tools and measurement devices to maintain accurate positioning**
- C. By relying solely on visual inspection
- D. By following the old alignment from previous installations

To ensure proper alignment when installing pipes, using leveling tools and measurement devices is key to maintaining accurate positioning. This approach allows for precise adjustments and verification of the pipe's placement both horizontally and vertically. Utilizing tools such as laser levels, spirit levels, and measuring tapes helps guarantee that pipes are installed according to specifications and regulations, which is essential for a successful piping system. Proper alignment is critical for avoiding leaks, ensuring the correct flow of fluids, and preventing undue stress on the piping materials. While some other methods, like visual inspection, may provide a basic check, they lack the accuracy needed for professional pipefitting work. Relying solely on visual inspection can lead to unnoticed misalignments that may cause issues later. Similarly, using quick measurements or estimates compromises the quality of the installation, increasing the risk of errors. Following existing alignment from previous installations may not account for changes or requirements in the current project, which can lead to further complications. Thus, the accurate use of measurement devices and leveling tools is the most reliable way to achieve proper pipe alignment.

7. Trenches must be designed, excavated, and shored according to which standards?

- A. ASME standards
- B. API standards
- C. Company standards
- D. OSHA standards**

The correct answer is OSHA standards, as they provide specific regulations that ensure the safety and health of workers involved in excavations, including trenches. OSHA, which stands for the Occupational Safety and Health Administration, outlines requirements for trench safety, including the necessity of shoring to prevent cave-ins, proper design factors, and excavation depth considerations. Compliance with these regulations is crucial to protect workers from potential hazards associated with trenching operations, such as collapses, which could lead to severe injuries or fatalities. In contrast to OSHA's explicit safety focus, ASME (American Society of Mechanical Engineers) and API (American Petroleum Institute) standards are more relevant to mechanical engineering and the petroleum industry, respectively. While these standards have their importance in specific contexts, they do not primarily address excavation and trench safety. Company standards may apply within a specific organization; however, they must still adhere to OSHA regulations in the absence of stricter requirements to ensure legal compliance and worker protection. Therefore, referencing OSHA standards highlights the essential legal framework and safety practices mandated for trench excavation work.

8. Flat Face Flanges require which type of gasket?

A. Spiral wound

B. Full face

C. Strip

D. Jacketed

Flat face flanges require a full face gasket to ensure an effective seal. This type of gasket provides a complete surface area that covers the entire flange, creating an even distribution of pressure when the flanges are bolted together. The design helps to fill any gaps and irregularities between the flanges and enables the full contact needed to prevent leaks. Using a full face gasket is especially important for flat face flanges because they do not have raised sections to support the gasket, making uniform coverage crucial. This type of gasket supports the full area of the flange, allowing for a secure connection that can withstand the operating pressures of the piping system. In contrast, other gasket types like spiral wound or jacketed gaskets may not provide the necessary surface contact for flat face flanges and are better suited for different flange configurations. Understanding the specific requirements for flange types and gasket applications is crucial for ensuring the integrity and safety of piping systems.

9. Ground fault circuit interrupters should be located?

A. Closest to the power tool

B. At the source of power

C. On individual extension cords

D. On cords with only 3 prong connections

Ground Fault Circuit Interrupters (GFCIs) are critical safety devices designed to protect individuals from electric shock by cutting off power when an imbalance in the electrical current is detected. The correct option is that GFCIs should be located on cords with three-prong connections because they ensure proper grounding for the electrical devices being used. Three-prong connections are made up of a hot wire, a neutral wire, and a ground wire. The ground wire is essential for GFCI operation, as it provides a path for stray electrical currents, significantly reducing the risk of electrical shock. When utilizing three-prong plug connections, integrating a GFCI helps to enhance safety, particularly in environments where moisture and electrical equipment may come into contact, like construction sites or outdoor settings. Options that suggest placing GFCIs at the source of power, closest to the power tool, or on individual extension cords do not fully leverage the protective capabilities offered by a three-prong connection. These placements may not adequately address potential fault conditions in the system or might neglect situations where the device is moved away from the power source, thereby not providing effective shock protection. Therefore, employing GFCIs on cords with three-prong connections maximizes safety and compliance with electrical codes.

10. Which of the following is NOT a type of pipe joint?

- A. Welded joint**
- B. Threaded joint**
- C. Pinned joint**
- D. Flanged joint**

A pinned joint is not recognized as a standard type of pipe joint in the context of piping and plumbing. The other types listed—welded joints, threaded joints, and flanged joints—are established methods of connecting pipes. Welded joints are used to create strong, permanent connections by melting the edges of the pipes and allowing them to fuse together. This type of joint is commonly used in high-pressure applications where strength and airtight connections are critical. Threaded joints involve the use of threaded ends on the pipes, allowing them to screw into each other or connect with fittings. This method permits easy disassembly and reassembly of pipes, making it useful for systems that require frequent maintenance. Flanged joints consist of two flanges bolted together with a gasket in between to create a seal. This type of joint allows for easy access to piping systems for repair or inspection, making it a practical choice for many installations. In summary, while welded, threaded, and flanged joints are standard connection methods used in piping systems, a pinned joint is not a conventional or recognized type within this field, which clarifies why it is the correct choice for the answer.