

HVAC Journeyman Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

Copyright © 2025 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain from reliable sources accurate, complete, and timely information about this product.

SAMPLE

Questions

SAMPLE

- 1. According to the code, unless otherwise listed, air flow must first pass through which component?**
 - A. The cooling coil**
 - B. A diverter unit**
 - C. A bypass duct**
 - D. The heat exchanger**
- 2. Industrial product-conveying ducts for abrasive materials must be constructed of what material?**
 - A. Polyvinyl chloride**
 - B. Fiberglass**
 - C. Sheet metal**
 - D. A combination of both A and C**
- 3. Excess refrigerants may be stored in which of the following places?**
 - A. In a securely fenced yard with a locked gate**
 - B. In a mechanical room**
 - C. As required by the Fire Code**
 - D. In a machinery room**
- 4. What must evaporative coolers allow without removing?**
 - A. Electrical panels**
 - B. Permanent construction**
 - C. Access doors**
 - D. Smoke detectors**
- 5. What dimension is often required for pipes in HVAC systems?**
 - A. Standardized inch sizes**
 - B. Metric centimeter sizes**
 - C. Variable lengths**
 - D. Custom dimensions based on installation**

- 6. What type of ductwork system is generally prohibited from serving more than one story?**
- A. Flexible ducts**
 - B. Metal ducts**
 - C. Factory-made air ducts**
 - D. Spiral duct systems**
- 7. Why must duct sizes adhere to certain standards in HVAC installations?**
- A. To avoid aesthetic issues**
 - B. To ensure proper airflow and efficiency**
 - C. To simplify installation procedures**
 - D. To accommodate future upgrades**
- 8. What is the minimum slope required for condensate drain piping per foot?**
- A. 1/8 inch**
 - B. 1/4 inch**
 - C. 1/2 inch**
 - D. 1 inch**
- 9. What is the minimum height that an exhaust outlet for commercial food heat-processing equipment should be above the roof surface?**
- A. 2 feet**
 - B. 3 feet**
 - C. 18 feet**
 - D. 40 inches**
- 10. Buildings taller than what height are required to have an inside means of access to the roof?**
- A. 14 feet**
 - B. 15 feet**
 - C. 16 feet**
 - D. 20 feet**

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. According to the code, unless otherwise listed, air flow must first pass through which component?

- A. The cooling coil**
- B. A diverter unit**
- C. A bypass duct**
- D. The heat exchanger**

The correct choice indicates that air flow must first pass through the heat exchanger unless specified otherwise in the code. This is crucial because the heat exchanger plays a vital role in transferring thermal energy between the air and the fluid (either a refrigerant or water) used in the HVAC system. This transfer ensures efficient heating or cooling of the air that is then distributed throughout the area being conditioned. By routing air through the heat exchanger first, it maximizes energy efficiency and maintains proper temperature control. Furthermore, it helps in preventing the potential for condensation that could occur in downstream components if warmer, moist air were to bypass the heat exchanger. In general, understanding the function of each component in an HVAC system is vital for ensuring that the system operates effectively and complies with industry standards and codes. Other components listed, such as the cooling coil or diverter unit, play important roles in the overall system performance, but they are secondary to the initial conditioning of air that the heat exchanger provides.

2. Industrial product-conveying ducts for abrasive materials must be constructed of what material?

- A. Polyvinyl chloride**
- B. Fiberglass**
- C. Sheet metal**
- D. A combination of both A and C**

The construction of industrial product-conveying ducts for abrasive materials requires the use of sheet metal because it offers the necessary durability and strength to withstand the wear and tear from abrasive substances. Sheet metal is resistant to impact and can maintain its integrity under harsh conditions, making it an ideal choice for handling materials that can cause erosion or damage to less robust materials. Additionally, sheet metal can be shaped and sealed effectively to create the necessary ducting configurations, ensuring efficient airflow and minimizing leaks. This is crucial in maintaining performance standards within an industrial setting. While other materials like polyvinyl chloride and fiberglass may be suitable for certain applications, they do not provide the same level of durability needed when dealing with abrasive materials. Therefore, the use of sheet metal is the most practical and effective choice in this scenario.

3. Excess refrigerants may be stored in which of the following places?

- A. In a securely fenced yard with a locked gate**
- B. In a mechanical room**
- C. As required by the Fire Code**
- D. In a machinery room**

Excess refrigerants should be stored in accordance with the Fire Code to ensure safety and compliance with regulations. The Fire Code provides guidelines regarding the proper storage of hazardous materials, including refrigerants, which can be potentially flammable or harmful. These regulations typically cover aspects such as location, quantity limits, and safety features like ventilation and fire suppression systems. While other locations like a securely fenced yard or machinery room may seem plausible for storage, these settings do not necessarily meet the stringent requirements outlined in the Fire Code. The mechanical room and machinery room are typically focused on operational needs rather than storage norms for hazardous materials. Therefore, adherence to the Fire Code is crucial to ensure that any excess refrigerants are stored safely and legally, minimizing risks associated with fire and environmental hazards.

4. What must evaporative coolers allow without removing?

- A. Electrical panels**
- B. Permanent construction**
- C. Access doors**
- D. Smoke detectors**

Evaporative coolers, also known as swamp coolers, are designed to enhance indoor air quality and maintain comfortable humidity levels in a building. Their operation relies on the principle of evaporative cooling, which introduces moisture into the air and provides cooling effects without significantly lowering air temperature. The correct answer indicates that evaporative coolers must allow for permanent construction elements to remain intact. This means that these coolers should be installed and operated in a manner that does not interfere with the structural integrity or safety of the building. Permanent construction elements, including walls, ceilings, and other essential architectures, are crucial for complying with building codes and ensuring the overall functionality and safety of the structure. In contrast, options like electrical panels, access doors, and smoke detectors are typically related to maintenance and safety protocols but do not pertain to the fundamental requirement of ensuring that the permanent construction within the building remains unaffected by the installation and operation of the evaporative cooler. These components may need careful consideration during installation, but the primary focus of this question is on the importance of allowing permanent construction to remain undisturbed.

5. What dimension is often required for pipes in HVAC systems?

- A. Standardized inch sizes**
- B. Metric centimeter sizes**
- C. Variable lengths**
- D. Custom dimensions based on installation**

The requirement for standardized inch sizes for pipes in HVAC systems hinges on industry practices and the need for compatibility across various components and fittings. Standardized inch sizes ensure that pipes can be easily sourced, replaced, and connected with other components in the system, facilitating smoother installation and maintenance processes. Using standardized dimensions allows manufacturers to produce pipes that fit universally with HVAC equipment, reducing the likelihood of errors during installation and ensuring that different parts work efficiently together. This standardization also contributes to regulatory compliance, as many codes and regulations specify industry standard sizes. While metric sizes and custom dimensions have their applications, the predominant preference for inch sizes in many regions, particularly in the United States, aligns with the historical context and the established conventions in the HVAC industry. Variable lengths are relevant too, but they don't imply a specific standardized sizing, which is crucial for the overall design and functionality of the system.

6. What type of ductwork system is generally prohibited from serving more than one story?

- A. Flexible ducts**
- B. Metal ducts**
- C. Factory-made air ducts**
- D. Spiral duct systems**

Factory-made air ducts are typically prohibited from serving more than one story due to safety and design considerations. These ducts are designed and manufactured to specific standards, often intended for particular types of installations, and when applied to multi-story systems, they may not adequately address the complexities involved, such as air travel distance, pressure differentials, and potential airflow issues. Using factory-made air ducts in multi-story applications can lead to challenges in achieving even air distribution and maintaining temperature control across different floors. Additionally, proper fire safety measures need to be adhered to in multi-story applications, and many factory-made ducts may not have the necessary certifications or fire ratings required for such uses. In contrast, other types of ducts, such as flexible ducts, metal ducts, and spiral duct systems, can often be adapted for multi-story applications given their design flexibility or specific construction materials that can meet safety standards for various building configurations.

7. Why must duct sizes adhere to certain standards in HVAC installations?

- A. To avoid aesthetic issues**
- B. To ensure proper airflow and efficiency**
- C. To simplify installation procedures**
- D. To accommodate future upgrades**

In HVAC installations, adhering to certain standards for duct sizes is crucial to ensure proper airflow and efficiency. Duct sizes must be calculated accurately to allow the intended volume of air to flow through the system without excessive resistance or turbulence. When ducts are properly sized, the HVAC system can effectively deliver conditioned air throughout the space, maintaining comfort and energy efficiency. If the ducts are too small, it can lead to increased air velocity, which may cause noise issues and uneven temperature distribution. Conversely, if ducts are oversized, it may result in a loss of air pressure, leading to reduced efficiency and wasting energy. Therefore, following established duct size standards helps optimize the system's performance, ensuring that it operates efficiently and effectively for the space it serves.

8. What is the minimum slope required for condensate drain piping per foot?

- A. 1/8 inch**
- B. 1/4 inch**
- C. 1/2 inch**
- D. 1 inch**

The minimum slope required for condensate drain piping is essential to ensure that the condensate flows properly and doesn't cause any blockages or backflows. A slope of 1/8 inch per foot is considered adequate to allow gravity to effectively move the water away from the system without creating a risk of clogging. This slight incline helps maintain a steady flow, reducing the chance of stagnant water where debris or contaminants could accumulate. While steeper slopes, like 1/4 inch or greater, are sometimes preferred in specific installations to promote even faster drainage, the minimum industry standard is 1/8 inch per foot. This standard is widely recognized in various plumbing and HVAC codes, ensuring that practitioners have a clear understanding of the requirements for proper drainage. The choices representing greater slopes are not necessary for basic drainage functions and could create issues such as increased pressure on the joints and connections of the piping system.

9. What is the minimum height that an exhaust outlet for commercial food heat-processing equipment should be above the roof surface?

- A. 2 feet**
- B. 3 feet**
- C. 18 feet**
- D. 40 inches**

The minimum height for an exhaust outlet from commercial food heat-processing equipment is crucial for ensuring that smoke, odors, and combustion products are properly ventilated away from the building. The requirement for an exhaust outlet to be at least 18 feet above the roof surface is based on safety and environmental considerations. This height helps prevent the re-entrainment of exhaust fumes into the building's fresh air intakes or nearby operable windows, which can cause indoor air quality issues and potential health hazards for occupants. Additionally, it aids in dissipating the exhaust gases and odors into the atmosphere, reducing their impact on surrounding areas. In various building codes and standards, such as the National Fire Protection Association (NFPA) and International Building Code (IBC), specifications may dictate such clearances to promote safe operation, particularly in commercial settings where food processing can generate significant heat and emissions. Therefore, ensuring the exhaust outlet is positioned appropriately enhances the efficiency of the ventilation system and aligns with public health and safety regulations.

10. Buildings taller than what height are required to have an inside means of access to the roof?

- A. 14 feet**
- B. 15 feet**
- C. 16 feet**
- D. 20 feet**

Buildings taller than 15 feet are required to have an inside means of access to the roof for several important reasons primarily concerning safety and accessibility. From a safety standpoint, providing proper access to the roof enables firefighters and other emergency personnel to quickly reach the roof in case of fire or other emergencies. This access is crucial because many modern buildings incorporate rooftop equipment such as HVAC systems that require maintenance or emergency shutdowns. Furthermore, adhering to these regulations helps ensure that maintenance personnel can safely conduct routine inspections and repairs, minimizing risks associated with working at heights. The specification of 15 feet as the relevant height standard comes from various building and fire codes, which recognize this height as a threshold where the risks of access and emergency situations increase. Ensuring that structures above this height are equipped with safe, reliable means of access helps streamline safety protocols and maintain compliance with industry regulations.