CDFA Measurement Verification Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. What is the role of the anti-drain valve in fuel dispensing systems?

A. To increase the pressure of the fuel

B. To prevent the hose from draining

C. To reduce the flow rate of the fuel

D. To measure the amount of fuel dispensed

2. What routine maintenance action should be taken to ensure long-term performance of measuring devices?

A. Frequent replacement of parts

B. Regular calibration checks

C. Updating software

D. Changing operating environment

3. What is the minimum discharge rate for wholesale LPG allowed?

A. 10% of the marked maximum discharge rate

B. 15% of the marked maximum discharge rate

C. 20% of the marked maximum discharge rate

D. 25% of the marked maximum discharge rate

4. What should be displayed about the manufacturer on an electric meter badge?

A. Only the manufacturer's name

B. Manufacturer's name or trademark and serial number

C. Manufacturer's logo only

D. Manufacturer's address

5. According to Boyle's Law, if the volume is 50 gallons at 20 atm, what is the volume at 40 atm?

A. 100 gallons

B. 50 gallons

C. 25 gallons

D. 10 gallons

6. What is the tolerance for vehicles for hire regarding registration accuracy when loaded?

A. 5% under, 4% over registration

B. 3% over, 5% under registration

C. 4% over/under registration for all vehicles

D. 5% under, 3% over registration, if unloaded

7. How long must utility meter records of invoices and rate schedules be retained by the owner?

A. 6 months

B. 12 months

C. 24 months

D. 36 months

8. How is the height of the tank capacity lettering specified?

A. At least 1/2" in height

B. At least 3/4" in height

C. At least 1" in height

D. Both B and C

9. What is the nominal temperature for cryogenic liquids?

A. 32° F at 14.7 psi

B. 0° F at 14.7 psi

C. 70° F at 14.7 psi

D. -40° F at 14.7 psi

10. If a business owner's wife reports illegal activity, what is the status of the search conducted based on her consent?

A. Admissible due to her relationship

B. Not permissible as she is a third party

C. Permissible if there are additional witnesses

D. Admissible with a warrant

Answers

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

Explanations

1. What is the role of the anti-drain valve in fuel dispensing systems?

A. To increase the pressure of the fuel

B. To prevent the hose from draining

C. To reduce the flow rate of the fuel

D. To measure the amount of fuel dispensed

The anti-drain valve plays a crucial role in fuel dispensing systems by preventing the fuel from draining back into the storage tank after the dispensing process has stopped. This feature is essential for maintaining an efficient and clean system, as it helps to ensure that the fuel remains in the hose and ready for the next customer. By keeping the fuel in the hose, the anti-drain valve minimizes spillage, reduces the risk of contamination, and helps maintain the correct measurement of fuel dispensed. Without an effective anti-drain valve, it would be challenging to control the amount of fuel delivered accurately, leading to potential inconsistencies in the dispensing process. The proper functioning of this valve is vital for operational efficiency and customer satisfaction, as it ensures that each transaction delivers the expected volume of fuel without loss due to drainage.

2. What routine maintenance action should be taken to ensure long-term performance of measuring devices?

A. Frequent replacement of parts

B. Regular calibration checks

C. Updating software

D. Changing operating environment

Regular calibration checks are essential for ensuring the long-term performance of measuring devices. Calibration involves comparing the measurements taken by the device against a known standard to identify any discrepancies. Over time, measuring devices can drift from their original accuracy due to various factors such as wear and tear, changes in environmental conditions, or even aging components. By conducting regular calibration checks, organizations can confirm that the devices are providing accurate measurements and maintain compliance with applicable standards or regulations. This proactive approach prevents potential operational issues that may arise from inaccurate measurements, which can have significant ramifications in various fields, including manufacturing, laboratory work, and any environment where precise measurements are crucial. Therefore, incorporating regular calibration into maintenance practices is imperative for ensuring reliability and accuracy over the lifespan of measuring devices.

3. What is the minimum discharge rate for wholesale LPG allowed?

A. 10% of the marked maximum discharge rate

B. 15% of the marked maximum discharge rate

C. 20% of the marked maximum discharge rate

D. 25% of the marked maximum discharge rate

The minimum discharge rate for wholesale LPG is established at 20% of the marked maximum discharge rate. This specification is critical in ensuring safety and efficiency during the transfer of liquid petroleum gas. By mandating a minimum rate, regulations aim to prevent issues such as incomplete discharges or excessive delays, which can have operational and safety implications. This standard helps suppliers maintain consistent operational flows and better control over the distribution process, thus reducing the risk of accidents associated with improper handling of LPG. Additionally, by ensuring a minimum discharge rate, the protocol supports regulatory compliance and contributes to the overall integrity of LPG transactions in the wholesale market.

4. What should be displayed about the manufacturer on an electric meter badge?

A. Only the manufacturer's name

B. Manufacturer's name or trademark and serial number

C. Manufacturer's logo only

D. Manufacturer's address

The display on an electric meter badge is essential for identification and verification, and includes both the manufacturer's name or trademark and the serial number. The manufacturer's name or trademark provides clear identification of who produced the meter, ensuring accountability and traceability in case of any issues or recalls. In addition, the serial number serves as a unique identifier for each individual meter. This allows for proper tracking of the device, ensuring that any specific meter can be linked to manufacturing data, performance records, and maintenance history. Having both elements aids in regulatory compliance and helps utility companies manage their equipment effectively.

5. According to Boyle's Law, if the volume is 50 gallons at 20 atm, what is the volume at 40 atm?

A. 100 gallons

B. 50 gallons

C. 25 gallons

D. 10 gallons

Boyle's Law states that the pressure of a gas is inversely proportional to its volume when the temperature is held constant. This relationship can be expressed with the formula: P1 × V1 = P2 × V2 Where P1 and V1 are the initial pressure and volume, and P2 and V2 are the final pressure and volume. In the given question, you start with a volume (V1) of 50 gallons at an initial pressure (P1) of 20 atm. You are asked to find the new volume (V2) when the pressure is increased to 40 atm (P2). Using Boyle's Law: 20 atm × 50 gallons = 40 atm × V2 To solve for V2, rearranging the equation gives: V2 = (20 atm × 50 gallons) / 40 atm Calculating this yields: V2 = 1000 / 40 = 25 gallons Thus, at a pressure of 40 atm, the new volume of the gas would be 25 gallons. This confirms that under increased pressure, the volume decreases, illustrating Boyle's Law effectively.

6. What is the tolerance for vehicles for hire regarding registration accuracy when loaded?

A. 5% under, 4% over registration

B. 3% over, 5% under registration

C. 4% over/under registration for all vehicles

D. 5% under, 3% over registration, if unloaded

The correct choice regarding the tolerance for vehicles for hire relates specifically to how registration accuracy is managed when the vehicles are unloaded. The stated tolerance indicates that it allows for a margin of error, facilitating the process for vehicles in terms of accurate weight measurement as they prepare for load. For unloaded vehicles, having a tolerance of 5% under registration means that the vehicle can legally weigh up to 5% less than the stated registration weight without penalty. This can help accommodate variations in weight allowances for vehicles that may not always be loaded to capacity. Conversely, the 3% over registration tolerance suggests that when vehicles are unloaded, there shouldn't be more than a 3% excess weight compared to what has been registered. Together, these tolerances provide a balanced approach ensuring that vehicles for hire are not in violation of regulations while also allowing for a slight variance in operational conditions. In summary, the correct choice accurately reflects the allowable weight registration tolerances specifically addressing how unloaded vehicles should be assessed or regulated. This ensures that the regulations are practical and consider real-world operating conditions.

7. How long must utility meter records of invoices and rate schedules be retained by the owner?

A. 6 months

B. 12 months

C. 24 months

D. 36 months

The requirement to retain utility meter records of invoices and rate schedules for 12 months reflects a balance between ensuring accountability and allowing for the practical management of records. This timeframe is typically established to ensure that any discrepancies in billing can be investigated and resolved within a reasonable period. The retention period is long enough to allow consumers to review their bills and to ensure that any disputes or verification of rates can be adequately addressed without overwhelming the owner with excessive data management responsibilities. It strikes a proper balance between necessary record-keeping and operational efficiency, allowing for effective audits and reviews while not requiring indefinite storage of records that may no longer be relevant. Longer retention periods, such as 24 or 36 months, might suggest a lack of confidence in billing systems or a need to address complex issues over a longer duration, which may not always be justified given the nature of utility billing, where monthly invoicing involves real-time usage that is generally clear-cut. Retaining records for only six months, on the other hand, may not provide sufficient time for consumers or regulatory bodies to resolve billing or rate-related issues effectively. In essence, a 12-month retention policy aligns with industry standards and practical needs related to utility metering and invoicing, ensuring that important records are

8. How is the height of the tank capacity lettering specified?

A. At least 1/2" in height

B. At least 3/4" in height

C. At least 1" in height

D. Both B and C

The height of the tank capacity lettering is specified as at least 3/4" in height and also includes the option of being at least 1" in height, which means that both of these choices meet the requirement for clear visibility and communication. The designation of a minimum height for lettering serves to ensure that the capacity information is easily readable from a distance, which is essential for operational safety and efficiency. Having letters that are at least 3/4" or 1" in height supports the need for legibility in various conditions and helps to prevent misinformation about the tank's capacity. This is particularly important in settings where multiple users may need to read the information quickly or where visibility may be challenging due to lighting or distance. Thus, specifying that lettering be at least 3/4" or 1" helps ensure that important data remains accessible and understandable in practical situations.

9. What is the nominal temperature for cryogenic liquids?

- A. 32° F at 14.7 psi
- B. 0° F at 14.7 psi
- C. 70° F at 14.7 psi
- D. -40° F at 14.7 psi

The nominal temperature for cryogenic liquids is typically not at standard temperatures such as those presented in the other choices, as cryogenic materials are characterized by their very low temperatures. Cryogenic liquids are generally defined as those that have boiling points below -150°C (-238°F), and this means their nominal temperatures in atmospheric conditions are significantly lower than the options provided. In the context of lower temperatures, options like 32° F (freezing point of water), 0° F, and even 70° F (room temperature) do not align with the characteristics of cryogenic substances. Specifically, cryogenic liquids such as liquid nitrogen, which is a common example, boil at -196°C (-321°F). Therefore, while multiple-choice questions on this topic may lead to various interpretations, it’s crucial to understand the inherent properties of cryogenic liquids, which highlight their extremely low nominal temperatures compared to standard environmental temperatures.

10. If a business owner's wife reports illegal activity, what is the status of the search conducted based on her consent?

- A. Admissible due to her relationship
- B. Not permissible as she is a third party
- C. Permissible if there are additional witnesses
- D. Admissible with a warrant

When considering the legality of a search conducted based on a spouse's consent, it is important to understand the legal principles surrounding third-party consent. In this context, the wife is considered a third party in relation to the business, which complicates her ability to provide valid consent for a search of the business premises. Generally, a person can give consent to search property only if they have authority over that property. In cases involving businesses, typically, the owner or an individual with control over the space must provide consent for a lawful search to be valid. The wife, while she may have a close relationship with the business owner, typically does not hold legal authority over the business itself unless she is also an owner or has been given specific control over the business's operations. In this scenario, because she is not the owner or has explicit authority over the business, her consent does not legitimize the search, making it impermissible. This aligns with legal precedents regarding third-party consent where the consent of a non-owner, even if a spouse, does not suffice to authorize a search of business premises. Thus, the status of the search, based on her consent as a third party, is not permissible.