Water and Fuel Systems Maintenance (WFSM) Set B Volume 2 Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. **About how far above the tank floor is the first stage of the deep well turbine pump located?**
   - A. A) 3 inches
   - B. B) 6 inches
   - C. C) 9 inches
   - D. D) 12 inches

2. **Which Air Force information management tool is used to record vapor readings during tank cleaning?**
   - A. 39
   - B. 72
   - C. 172
   - D. 561

3. **What is installed on a floating roof tank to help prevent out of roundness?**
   - A. A) a ring wall
   - B. B) a wind girder
   - C. C) the floating roof
   - D. D) the shell support beams

4. **How is the product identification displayed on an above-ground tank?**
   - A. A) yellow bands with white letters on a black background
   - B. B) yellow bands with black letters and a white background
   - C. C) black bands with white letters and a yellow background
   - D. D) black bands with yellow letters on a white background

5. **What is a typical symptom of a failing foot valve in a dispensing system?**
   - A. Inconsistent fuel delivery
   - B. Excessive pressure buildup
   - C. Constant air bubbles in fuel
   - D. Abnormal noises during operation

6. What is the purpose of a differential pressure gauge in a liquid system?

A. Measure fluid temperature

B. Determine flow rate

C. Measure pressure differentials

D. Indicate fluid density

7. What should be regularly checked to ensure the proper functioning of pneumatic tank probes?

A. Fuel type

B. Gas pressure

C. Electrical connections

D. Software updates

8. What is the standard increment of measurement for a tape and bob gauging device used at service stations?

A. 1/16 of an inch

B. 1/8 of an inch

C. 1/4 of an inch

D. 1/2 of an inch

9. Why are monthly inspections important for fuel tanks?

A. To maintain the fuel's quality

B. To detect potential leaks and ensure compliance with safety regulations

C. To monitor fuel consumption

D. To verify the correct functioning of pumps

10. What common problem can occur if a water system is not properly maintained?

A. Low water pressure

B. Corrosion of pipes and fixtures

C. Water contamination

D. Insufficient water temperature

Answers

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

Explanations

1. About how far above the tank floor is the first stage of the deep well turbine pump located?

A. A) 3 inches

B. B) 6 inches

C. C) 9 inches

D. D) 12 inches

The first stage of a deep well turbine pump is typically located 6 inches above the tank floor. This positioning is critical to ensure optimal operation of the pump and to prevent issues that could arise from sediment and debris that may settle at the bottom of the tank. By having the intake of the pump elevated, it allows for a continuous supply of clean water and minimizes the risk of the pump drawing in particles that could damage its components or affect its efficiency. Additionally, this design helps maintain the pump's performance over time by avoiding cavitation and ensuring proper flow dynamics in the well system.

2. Which Air Force information management tool is used to record vapor readings during tank cleaning?

A. 39

B. 72

C. 172

D. 561

The correct choice is the 172 form, which is specifically used in the context of fuel and water systems maintenance to record vapor readings during tank cleaning operations. This form is vital for ensuring safety and compliance, as monitoring vapor levels is crucial to prevent flammable or hazardous conditions during maintenance activities. The 172 form functions as a record-keeping tool that captures important data, which can later be analyzed to assess the conditions within the tank before cleaning begins. This ensures that technicians have a clear understanding of the environment they are working in, which is essential for both operational safety and environmental protection. Other options do serve different purposes within the scope of Air Force operations but do not pertain specifically to the task of recording vapor readings during tank cleaning, making them unsuitable for this particular function.

3. What is installed on a floating roof tank to help prevent out of roundness?

A. A) a ring wall

B. B) a wind girder

C. C) the floating roof

D. D) the shell support beams

A wind girder is designed to provide structural integrity to a floating roof tank, particularly in maintaining its round shape during windy conditions. This component is crucial because, without it, the roof may experience distortions or 'out of roundness' due to external forces such as wind pressure or thermal expansion. The wind girder is typically installed along the perimeter of the floating roof and acts as a stabilizing element, ensuring that the roof remains level and evenly supported. Its design helps to distribute loads and resist deformation, thus preserving the integrity of the tank's structure. In contrast, the other options serve different functions. A ring wall is intended to contain the tank and separate it from surrounding areas, the floating roof is an operational component that floats on the product inside the tank, and the shell support beams are structural elements meant to support the tank walls. While they are essential in their own right, they do not specifically address the issue of maintaining the roundness of the roof under varying conditions.

4. How is the product identification displayed on an above-ground tank?

A. A) yellow bands with white letters on a black background

B. B) yellow bands with black letters and a white background

C. C) black bands with white letters and a yellow background

D. D) black bands with yellow letters on a white background

The correct display of product identification on an above-ground tank uses yellow bands with black letters on a white background. This specific color combination enhances visibility and compliance with safety regulations, allowing for clear identification of the product contained within the tank. Using yellow bands ensures that the information stands out, making it easier for personnel to quickly recognize the contents and their associated risks. The black letters provide a strong contrast against the yellow bands, further aiding in readability while promoting safety on the facility. In addition, regulations often dictate that specific color codes and combinations are utilized for labeling to standardize practices across different facilities, thereby enhancing safety and operational efficiency.

5. What is a typical symptom of a failing foot valve in a dispensing system?

A. Inconsistent fuel delivery

B. Excessive pressure buildup

C. Constant air bubbles in fuel

D. Abnormal noises during operation

Inconsistent fuel delivery is a typical symptom of a failing foot valve in a dispensing system. The foot valve serves a critical role in maintaining the prime of the pump by ensuring that the fuel remains in the line when the pump is not in operation. When the foot valve begins to fail, it may not seal properly, leading to a situation where air can enter the system, disrupting the steady flow of fuel. This inconsistency can manifest as erratic fuel flow during dispensing, where the output may fluctuate or stop completely at times. This symptom indicates that the foot valve is not functioning effectively, which is essential for maintaining a continuous and reliable fuel supply. Understanding this symptom helps operators to identify when maintenance is needed to prevent further complications in the dispensing system, ensuring safe and efficient operations.

6. What is the purpose of a differential pressure gauge in a liquid system?

A. Measure fluid temperature

B. Determine flow rate

C. Measure pressure differentials

D. Indicate fluid density

The purpose of a differential pressure gauge in a liquid system is to measure pressure differentials. This type of gauge is designed specifically to compare two pressures, typically across a particular section of a system, such as across a filter or a piping system. By measuring the difference in pressure between two points, it helps in monitoring the performance and condition of equipment, allowing for the detection of issues such as clogging or excessive wear. This measurement is crucial for maintaining system efficiency and preventing potential failure within the system. The other options do not align with the primary function of a differential pressure gauge. While fluid temperature and flow rate are critical parameters in a liquid system, those measurements require different instruments, such as thermometers and flow meters, respectively. Indicating fluid density is also a separate function that does not relate to pressure measurement; this typically involves devices like hydrometers or densitometers. Thus, the focus of a differential pressure gauge is specifically on the measurement of pressure differentials, leading to better analysis and management of the liquid system.

7. What should be regularly checked to ensure the proper functioning of pneumatic tank probes?

A. Fuel type

B. Gas pressure

C. Electrical connections

D. Software updates

To ensure the proper functioning of pneumatic tank probes, regularly checking gas pressure is crucial. Pneumatic tank probes operate based on pressure differentials to determine the liquid level in a tank. If the gas pressure is not within the specified range, the probes may not function accurately, leading to improper readings and potential issues in monitoring fluid levels. Adequate gas pressure ensures that the probe can effectively send signals to the monitoring system, allowing for reliable tank level assessments. Maintaining the correct gas pressure ensures that the entire system operates efficiently and prevents false readings that could result from pressure fluctuations. This kind of routine check is essential for system integrity, safety, and operational efficiency in water and fuel management systems. Regularly assessing the gas pressure aligns with industry best practices for maintaining the reliability and accuracy of pneumatic monitoring systems.

8. What is the standard increment of measurement for a tape and bob gauging device used at service stations?

A. 1/16 of an inch

B. 1/8 of an inch

C. 1/4 of an inch

D. 1/2 of an inch

The standard increment of measurement for a tape and bob gauging device at service stations is 1/8 of an inch. This level of precision is suitable for accurately measuring liquid levels in storage tanks, ensuring that readings are both manageable and detailed enough for service operations. The 1/8 inch increment strikes a balance between providing reliable data without being overly complicated to read or manage during routine operations. In practical terms, using 1/8-inch increments allows service personnel to quickly assess fuel levels and make more informed decisions regarding fuel deliveries and inventory management. Employing this standard also helps maintain consistency across different measurements and practices within the industry, ultimately enhancing safety and operational efficiency.

9. Why are monthly inspections important for fuel tanks?

A. To maintain the fuel's quality

B. To detect potential leaks and ensure compliance with safety regulations

C. To monitor fuel consumption

D. To verify the correct functioning of pumps

Monthly inspections of fuel tanks are crucial primarily for detecting potential leaks and ensuring compliance with safety regulations. Regular inspections help identify issues before they escalate into serious problems, such as environmental contamination or safety hazards. Fuel leaks can lead to significant environmental damage, which is why regulations dictate strict monitoring practices. By performing these inspections consistently, any degradation in the integrity of the tank can be addressed early, thus avoiding costly remediation processes or shutdowns. Additionally, compliance with safety regulations is not only about maintaining the physical integrity of the tanks but also about adhering to legal standards that protect both the environment and public health. This proactive approach not only safeguards assets and ensures regulatory compliance but also fosters confidence in the operational safety of fuel storage. While maintaining fuel quality, monitoring consumption, and verifying pump functionality are also important factors in fuel management, they serve a different focus compared to the critical safety aspect provided by regular leak detection through monthly inspections.

10. What common problem can occur if a water system is not properly maintained?

A. Low water pressure

B. Corrosion of pipes and fixtures

C. Water contamination

D. Insufficient water temperature

The choice regarding corrosion of pipes and fixtures is accurate because improper maintenance of a water system can lead to several issues, including the accumulation of deposits and the presence of oxygen and contaminants that facilitate corrosion. Over time, if water chemistry is not kept in check—such as pH levels, hardness, and the presence of chlorine—these factors can corrode metal pipes and fixtures, leading to leaks and system failures. Regular maintenance helps prevent this by ensuring that the water remains balanced and the system components are functioning as designed, which prolongs the life of the infrastructure. While low water pressure, water contamination, and insufficient water temperature are also potential issues related to a poorly maintained water system, they stem from different causes. Low water pressure may arise due to blockages or leaks, while water contamination typically involves the introduction of harmful substances into the system, often due to lack of proper filtration or disinfection practices. Insufficient water temperature could be linked to heater issues or system settings rather than general maintenance concerns. All these problems highlight the importance of regular maintenance, but corrosion distinctly emphasizes the need for careful monitoring and management of the water's chemical properties to prevent damage to pipes and fixtures.