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연습 문제

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1년간 무료 업데이트 제공

Exam : CWBSP

**Title : Certified Water-Based
Systems Professionals**

Version : DEMO

1. Annual testing for a 1,500 gpm (5,677 L/min) at 80 psi (1.4 bar) fire pump supporting an attached sprinkler system demand of 1,800 gpm (6,813 L/min) at 100 psi (6.9 bar) is being conducted. The flow test of the fire pump must achieve what minimum flow rate and discharge pressure?

- A. 1,500 gpm (5,677 L/min) at 80 psi (1.4 bar)
- B. 1,600 gpm (6,056 L/min) at 75 psi (5.1 bar)
- C. 1,800 gpm (6,813 L/min) at 100 psi (6.9 bar)
- D. 2,250 gpm (8,516 L/min) at 65 psi (4.5 bar)

Answer: C

Explanation:

For annual testing of fire pumps, NFPA standards require the pump to be tested at its rated capacity and pressure, as well as at 150% of its rated capacity at a correspondingly lower pressure. In this scenario, the minimum flow rate required for the test is the demand of the attached sprinkler system, which is 1,800 gpm at 100 psi, to ensure the pump can meet or exceed the system's highest demand.

Reference: NFPA 13, NFPA 20, and CWBSP materials provide guidance on fire pump testing, indicating that pumps should be tested for both rated and excess capacities to ensure they can handle the required system demand.

2. If a jockey pump start point is set at 165 psi (11.4 bar), the jockey pump stop point should be not less than

- A. 130 psi (8.96 bar).
- B. 153 psi (10.55 bar).
- C. 175 psi (12.06 bar).
- D. 188 psi (12.96 bar).

Answer: C

Explanation:

The jockey pump stop point is typically set slightly above the fire pump start point to prevent unnecessary cycling of the fire pump. If the jockey pump start point is at 165 psi, the stop point should be higher to maintain system pressure and prevent overlap with the fire pump activation threshold, making 175 psi a suitable stop point.

Reference: NFPA 20 and CWBSP materials, which cover the installation and testing of fire pumps, including jockey pumps, recommend setting the jockey pump's stop pressure above its start pressure to ensure seamless system pressure maintenance.

3. Which of the following is a mandatory referenced publication in NFPA 13?

- A. NFPA 10
- B. NFPA 12
- C. NFPA 20
- D. NFPA 291

Answer: C

Explanation:

NFPA 20, which covers the installation of stationary pumps for fire protection, is a mandatory reference in NFPA 13. This standard is essential for ensuring that fire pumps, which are critical components of many sprinkler systems, meet the necessary performance and installation criteria.

Reference: NFPA 13 references NFPA 20 as a key standard for the design and installation of fire pump

assemblies, ensuring they provide adequate pressure and flow for sprinkler systems.

4.The distance between a hanger and the center line of an upright sprinkler shall be no less than

- A. 3 in. (75 mm).
- B. 4 in. (100 mm).
- C. 5 in. (125 mm).
- D. 6 in. (150 mm).

Answer: A

Explanation:

The correct answer is:

- A. 3 in. (75 mm)

This information can be found in several NFPA standards related to sprinkler systems, including:

- NFPA 13, Standard for the Installation of Sprinkler Systems, 2022 edition (Section 9.2.3.4)
- NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, 2022 edition (Section 8.2.3.4)
- NFPA 13R, Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies, 2022 edition (Section 9.2.3.4)

These standards all mandate a minimum clearance of 3 inches (75 mm) between the hanger and the centerline of an upright sprinkler to ensure the sprinkler's unimpeded operation and discharge pattern in case of a fire.

It's important to note that other standards with different requirements might exist, so it's always best to consult the specific NFPA standard relevant to your situation for accurate information. Additionally, always adhere to local codes and regulations when working with fire protection systems.

5.When backflow prevention valves are installed on existing pipe scheduled systems, the friction losses of the device shall be accounted for when determining

- A. residual pressure.
- B. system flow requirements.
- C. static pressure.
- D. system GPM requirements.

Answer: A

Explanation:

When backflow prevention devices are added to a system, their associated friction losses can affect the residual pressure available for the sprinkler system operation. Therefore, it's important to account for these losses to ensure the system maintains the required pressure during operation.

Reference: NFPA 13 includes considerations for the installation of backflow preventers and their impact on system design, emphasizing the need to account for device-related friction losses to maintain adequate residual pressure in the sprinkler system.