

SELECTICE TEST

Practice Test (More Than **250** Practice

questions)

With Standard exam paper questions

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Introduction

ALL -IN -ONE

Practice Test - Answers & Standard Exam Paper Questions

We will cover all parts of the S-12 Supervision Of Sprinkler Systems chapter with more than 250 practice questions.

Practice Test Approximately 60 pages and More than 250 MCQs, prepares you for certification and professional success. This guide covers critical knowledge and skills, with comprehensive practice questions, answers,. Designed to help you excel as a FDNY.

This Practice Test has a proven track record of helping candidates achieve top scores on the FDNY exam and gain the confidence they need for a successful career.

1. S-12 SUPERVISION OF SPRINKLER SYSTEMS Critical Topics (30 Questions)

- 1. Who is ultimately responsible for maintaining the sprinkler system and determining the qualifications of the Certificate of Fitness (COF) holder performing inspections?
 - A. The impairment coordinator
 - B. The Fire Department
 - C. The building owner
 - D. The COF holder
- 2. When a fire protection system is out of service, what is a primary duty of fire watch personnel?
 - A. Performing routine maintenance tasks
 - B. Continuously patrolling the affected area
 - C. Conducting building security checks
 - D. Assisting with administrative duties
- 3. What is the minimum duration for which records of system inspections, tests, and maintenance must be kept on the premises?
 - A. One year
 - B. Five years
 - C. Two years
 - D. Three years
- 4. Which condition represents an unplanned out-of-service situation for a sprinkler system? A. A break or major leak in piping
 - B. Scheduled quarterly testing
 - C. Planned replacement of sprinkler heads
 - D. Routine system flushing
- 5. What color disc is placed on Fire Department Connections (FDCs) when a sprinkler system is fully out of service?
 - A. Red disc
 - B. Blue disc
 - C. White disc
 - D. Green disc
- 6. What is the minimum number of spare sprinkler heads required to be kept available on the premises for systems with under 300 sprinklers?
 - A. Three heads
 - B. Six heads
 - C. Twelve heads
 - D. Twenty-four heads

- 7. How often must the Fire Department connection for a sprinkler system undergo a hydrostatic pressure test conducted by a Master Fire Suppression Piping Contractor (MFSPC)?
 - A. Annually
 - B. Every two years
 - C. Every three years
 - D. Every five years
- 8. If a minor defect found during inspection is not corrected within 30 days, what action must the COF holder take?
 - A. Immediately shut down the system
 - B. Attempt the repair themselves
 - C. Report it in writing to the Fire Department
 - D. Ignore the defect until the next inspection
- 9. What is the minimum temperature that must be maintained in areas of buildings containing water-filled sprinkler piping?
 - A. 32 degrees Fahrenheit
 - B. 50 degrees Fahrenheit
 - C. 60 degrees Fahrenheit
 - D. 40 degrees Fahrenheit
- 10. Which individual is primarily responsible for ensuring proper safety precautions are taken when a fire protection system is placed out of service?
 - A. The impairment coordinator
 - B. The building tenant
 - C. The security guard
 - D. The responding firefighter

Answers for Critical Topics (1-10):

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

- 11. Under what circumstance must the Fire Department be notified regarding an out-of-service sprinkler system?
 - A. If the system is out of service for 1 hour
 - B. If repairs cannot be completed within 8 hours
 - C. If the system is out of service on only one floor
 - D. If only minor adjustments are being made
- 12. What information must be included on the tag placed at system control valves when a system is out of service?
 - A. The building's occupancy history
 - B. The name of the insurance provider
 - C. The cost estimate for the repairs
 - D. The area affected and time until operational
- 13. Which type of valve is commonly used as the main water supply control for sprinklers and is easily identified as open or closed by its stem position?
 - A. Check valve
 - B. OS&Y valve
 - C. Ball valve
 - D. Globe valve
- 14. What color should the Fire Department connection caps be painted for a combined standpipe/sprinkler system?
 - A. Red
 - B. Green
 - C. Silver
 - D. Yellow
- 15. What is the primary function of an automatic ball drip device on a Fire Department connection?
 - A. To prevent freezing in the connection
 - B. To increase water pressure
 - C. To measure water flow rate
 - D. To filter debris from the water
- 16. What is the minimum acceptable air pressure that must be maintained inside a pressure tank used for a sprinkler system?
 - A. 25 psi
 - B. 50 psi
 - C. 100 psi
 - D. 75 psi
- 17. What is the primary purpose of a pressure maintenance pump (jockey pump)?
 - A. To boost pressure during a fire
 - B. To handle major system leaks
 - C. To drain the system for maintenance
 - D. To restore pressure from minor leaks

- 18. What action should be taken if sprinkler heads are found to be "loaded" with a hard build-up of foreign material?
 - A. Clean them thoroughly with solvent
 - B. Replace them with new heads
 - C. Paint over the build-up
 - D. Increase the system water pressure
- 19. Where should spare sprinkler heads be stored?
 - A. In a cabinet where temperatures don't exceed 100°F
 - B. Near the main electrical panel
 - C. In the boiler room
 - D. Outside near the Fire Department connection
- 20. What type of sprinkler head is designed to be installed with the deflector below the frame, directing water downward in an umbrella pattern?
 - A. Upright sprinkler
 - B. Sidewall sprinkler
 - C. Concealed sprinkler
 - D. Pendent sprinkler

Answers (11-20):

11. B

- 12. D
- 13. B
- 14. D
- 15. A
- 16. D
- 17. D
- 18. B
- 19. A
- 20. D

- 21. What is the maximum allowable concentration of propylene glycol in an antifreeze sprinkler system solution?
 - A. 38%
 - B. 25%
 - C. 48%
 - D. 55%

22. How often must the freezing point of antifreeze solutions be tested?

- A. Monthly
- B. Quarterly
- C. Annually
- D. Semiannually
- 23. What is the primary difference between a standard response and a quick response sprinkler head?
 - A. The orifice size
 - B. The glass bulb size (or link size)
 - C. The deflector shape
 - D. The thread type
- 24. In addition to detailed records, what must be posted near the main water supply control valve?
 - A. A copy of the building floor plan
 - B. The COF holder's contact information
 - C. A list of emergency phone numbers
 - D. An approved card with inspection dates and signatures
- 25. Which individual is generally authorized to perform only visual inspections, notifications, and record keeping for sprinkler systems?
 - A. Master Plumber (MP)
 - B. Refrigeration Operating Engineer
 - C. S-12/S-15 COF holder
 - D. Master Fire Suppression Piping Contractor (MFSPC)
- 26. What is indicated by a green tag placed on the main control valve?
 - A. System fully out of service
 - B. System appears free of defects
 - C. System partially out of service
 - D. System requires immediate repair
- 27. What is the main purpose of a fire pump in a sprinkler system?
 - A. To boost water pressure and volume
 - B. To heat the water in winter
 - C. To filter the water supply
 - D. To automatically drain the system

- 28. What action must be taken immediately if sprinkler heads have opened or been damaged?
 - A. Notify the insurance company
 - B. Shut off the water supply
 - C. Conduct a full system flush
 - D. Replace them with similar heads
- 29. What is the purpose of a hydraulic placard attached to a sprinkler system riser?
 - A. To list the system components
 - B. To show the date of the last inspection
 - C. To indicate design density and flow requirements
 - D. To provide emergency contact information
- 30. What is the maximum spacing allowed between hangers for standard wall steel pipe with diameters of 1 ¹/₂ inches or larger?
 - A. 10 feet
 - B. 15 feet
 - C. 12 feet
 - D. 20 feet

Answers for Critical Topics (21-30):

21. A

22. C

- 23. B
- 24. D
- 25. C
- 26. B
- 27. A
- 28. D
- 29. C
- 30. B

2. System Types (40 Questions)

- 31. Which sprinkler system type always contains water in its piping under normal conditions?
 - A. Dry pipe system
 - B. Wet pipe system
 - C. Preaction system
 - D. Deluge system
- 32. What is the primary reason for installing a dry pipe sprinkler system?
 - A. For areas subject to freezing temperatures
 - B. To reduce water damage potential
 - C. To increase water discharge speed
 - D. For buildings with hazardous materials
- 33. What normally keeps the dry pipe valve closed in a dry pipe system?
 - A. Water pressure
 - B. A manual latch
 - C. A fusible link
 - D. Air or nitrogen pressure
- 34. What event directly causes the dry pipe valve to open (trip)?
 - A. Activation of a smoke detector
 - B. An increase in water pressure
 - C. A significant drop in air pressure
 - D. Manual operation of a pull station
- 35. What is the purpose of a quick opening device (accelerator or exhauster) on a dry pipe system?
 - A. To increase water pressure
 - B. To prevent water hammer
 - C. To reduce the valve tripping time
 - D. To test the alarm system
- 36. In which situation are preaction sprinkler systems primarily designed for use?
 - A. Unheated warehouses
 - B. Locations where water damage is a major concern
 - C. Areas with rapidly spreading fires
 - D. Outdoor exposure protection
- 37. What normally triggers the opening of the valve in a preaction system before sprinkler heads fuse?
 - A. A supplemental detection system
 - B. A drop in air pressure
 - C. Water flow in the pipes
 - D. Manual valve operation only

- 38. What type of sprinkler heads are used in a deluge sprinkler system?
 - A. Fusible link heads
 - B. Open sprinkler heads
 - C. Glass bulb heads
 - D. Quick response heads
- 39. When the valve in a deluge system opens, where does water discharge from?
 - A. Only the head nearest the fire
 - B. Only the heads activated by heat
 - C. A dedicated drain pipe
 - D. All sprinkler heads in the system
- 40. What type of occupancy is particularly suitable for a deluge system due to rapid fire spread potential?
 - A. Hazardous material storage
 - B. Residential apartments
 - C. Office buildings
 - D. Schools

Answers for System Types (31-40):

31. B

- 32. A
- 33. D
- 34. C
- 35. C
- 36. B
- 37. A
- 38. B
- 39. D
- 40. A

- 41. How is water typically supplied to a non-automatic dry sprinkler system?
 - A. From a gravity tank
 - B. By an automatic fire pump
 - C. Through the Fire Department connection
 - D. From a pressure tank
- 42. Which type of non-automatic system uses open heads to form an external water curtain on building walls?
 - A. Perforated pipe system
 - B. Exterior exposure sprinkler system
 - C. Open fixed spray nozzle system
 - D. Foam supply system
- 43. What is the primary fire hazard associated with garbage compactor chutes?
 - A. Electrical malfunction of the compactor
 - B. Water leaks from the chute
 - C. Build-up of flammable trash
 - D. Structural collapse of the chute
- 44. What must be installed in a garbage compactor chute to allow firefighter access?
 - A. Ventilation fans
 - B. Fire doors
 - C. Heat detectors
 - D. Drain pipes
- 45. What information should be included on the sketch posted in the garbage compactor room?
 - A. Building evacuation routes
 - B. Electrical wiring diagram for the compactor
 - C. Location of heads, valves, and supply lines
 - D. Schedule of trash collection
- 46. How often must the Certificate of Fitness holder inspect the garbage compactor sprinkler system?
 - A. Daily
 - B. Monthly
 - C. Weekly
 - D. Annually
- 47. What must be kept available in the compactor room for replacing fused or damaged heads?
 - A. A fire extinguisher
 - B. A minimum of 6 spare heads and wrenches
 - C. A garden hose
 - D. A detailed repair manual

- 48. What action should the COF holder take FIRST if a fire is discovered in the compactor?
 - A. Attempt to extinguish it with the hose
 - B. Shut off the sprinkler control valve
 - C. Try to clear the burning trash
 - D. Notify the local fire house
- 49. In an antifreeze sprinkler system, what follows the discharge of the antifreeze solution upon sprinkler activation?
 - A. Air discharge
 - B. Water discharge
 - C. Nitrogen discharge
 - D. Foam discharge
- 50. What is the maximum number of sprinkler heads that might be permitted to be shut off using a cold weather valve (where grandfathered)?
 - A. 5 heads
 - B. 15 heads
 - C. 10 heads
 - D. 20 heads

Answers for System Types (41-50):

- 51. What condition might cause a dry pipe valve to trip accidentally?
 - A. Low air pressure
 - B. Water hammer or high water pressure
 - C. Gradual temperature increase
 - D. Activation of a smoke detector
- 52. What is the typical air pressure setting relative to the trip level in a standard dry pipe system?
 - A. Equal to the trip level
 - B. 5-10 psi below the trip level
 - C. Exactly half the water pressure
 - D. 15-20 psi above the trip level
- 53. In a preaction system, the air in the piping under normal conditions may be:
 - A. Only under high pressure
 - B. Under pressure or not under pressure
 - C. Only non-pressurized
 - D. Filled with antifreeze solution
- 54. Which system provides the advantage of faster water delivery to a fire compared to a standard dry pipe system?
 - A. Wet pipe system
 - B. Preaction system
 - C. Non-automatic system
 - D. Garbage compactor system
- 55. What is a key feature of a recycling preaction system?
 - A. It uses antifreeze solution
 - B. It requires manual activation only
 - C. It shuts off water when heat drops
 - D. It employs open sprinkler heads
- 56. A combined dry pipe and preaction system primarily operates as which system type if the detection system fails?
 - A. Wet pipe system
 - B. Deluge system
 - C. Standard dry pipe system
 - D. Non-automatic system
- 57. What is a common application for perforated pipe systems?
 - A. Areas difficult to reach, like basements
 - B. High-rise office buildings
 - C. Protecting computer server rooms
 - D. Exterior wall protection

- 58. What must be labeled on all control valves within a garbage compactor sprinkler system?
 - A. The valve manufacturer
 - B. The purpose of the valve
 - C. The date of installation
 - D. The pressure rating
- 59. What should be done immediately with opened or damaged sprinkler heads in a compactor system?
 - A. Repair the damaged head
 - B. Replace the head
 - C. Cap the pipe opening
 - D. Flush the system line
- 60. What is the purpose of keeping a garden hose in the compactor room?
 - A. To clean the compactor
 - B. To extinguish small/smoldering fires
 - C. To test the water pressure
 - D. To fill the sprinkler system

Answers for System Types (51-60):

- 61. Which system type discharges water immediately from activated sprinklers because pipes are always water-filled?
 - A. Deluge System
 - B. Wet Pipe System
 - C. Dry Pipe System
 - D. Preaction System
- 62. What medium fills the pipes of a dry pipe system under normal conditions?
 - A. Water
 - B. Antifreeze
 - C. Foam Concentrate
 - D. Air or Nitrogen
- 63. What initiates water flow into the piping of a standard preaction system?
 - A. Sprinkler head fusion only
 - B. Detection system activation
 - C. Manual valve operation only
 - D. A drop in pipe pressure
- 64. Which system is characterized by having open sprinkler heads and requires a detection system to activate water flow?
 - A. Wet Pipe System
 - B. Dry Pipe System
 - C. Deluge System
 - D. Preaction System
- 65. What is the primary water source for a non-automatic dry sprinkler system during a fire? A. Gravity Tank
 - B. Fire Department Pumper
 - C. Pressure Tank
 - D. Fire Pump
- 66. Antifreeze systems are a variation of which primary sprinkler system type?
 - A. Dry Pipe System
 - B. Deluge System
 - C. Wet Pipe System
 - D. Preaction System
- 67. Which system type is most appropriate for protecting a computer room where accidental water discharge must be minimized?
 - A. Wet Pipe System
 - B. Preaction System
 - C. Deluge System
 - D. Non-automatic System

- 68. What component failure in a dry pipe system directly leads to the valve tripping?
 - A. Water motor gong failure
 - B. Air compressor failure causing pressure loss
 - C. Alarm check valve failure
 - D. Sprinkler head fusing causing pressure loss
- 69. In a deluge system, activation of the detection system causes water to flow to:
 - A. A single designated nozzle
 - B. Only nozzles in the fire area
 - C. All nozzles simultaneously
 - D. The Fire Department connection
- 70. Which type of system requires specific monthly inspections of sprinkler heads within the chute and compactor room?
 - A. Wet Pipe System
 - B. Garbage Compactor System
 - C. Dry Pipe System
 - D. Preaction System

Answers for System Types (61-70):

3. Inspection, Testing & Maintenance Frequencies (50 Questions)

- 71. How often should gauges on dry, preaction, and deluge systems (without constant supervision) be inspected for normal pressure?
 - A. Daily
 - B. Monthly
 - C. Weekly
 - D. Quarterly
- 72. How often should gauges on wet pipe sprinkler systems be inspected?
 - A. Weekly
 - B. Quarterly
 - C. Monthly
 - D. Annually
- 73. Alarm devices (waterflow indicators) on sprinkler systems should be inspected for physical damage at what frequency?
 - A. Monthly
 - B. Semiannually
 - C. Quarterly
 - D. Annually
- 74. How often should supervisory signal devices (e.g., valve tamper switches) be inspected for physical damage?
 - A. Monthly
 - B. Quarterly
 - C. Semiannually
 - D. Annually
- 75. At what frequency should the hydraulic nameplate on a sprinkler system be inspected for secure attachment and legibility?
 - A. Monthly
 - B. Annually
 - C. Quarterly
 - D. Every 5 years
- 76. How often should pipe and fittings be inspected annually from the floor level for damage, leaks, corrosion, and support?
 - A. Monthly
 - B. Annually
 - C. Quarterly
 - D. Every 3 years

- 77. The stock of spare sprinkler heads and wrenches should be inspected for proper number and type at what interval?
 - A. Monthly
 - B. Quarterly
 - C. Every 5 years
 - D. Annually

78. How often should sprinkler heads be inspected from the floor level for leakage, corrosion, loading, paint, damage, and proper orientation?

- A. Monthly
- B. Annually
- C. Quarterly
- D. Every 5 years
- 79. How often should the pump house or room heating equipment be inspected to ensure minimum temperatures are maintained (e.g., 40°F or 70°F for diesel)?
 - A. Weekly
 - B. Monthly
 - C. Quarterly
 - D. Annually
- 80. At what frequency should a visual inspection of the fire pump system (valves open, no leaks, normal pressures, screens clear) be performed?
 - A. Daily
 - B. Monthly
 - C. Weekly
 - D. Quarterly

Answers for ITM Frequencies (71-80):

- 81. How often should the fuel tank level (minimum 2/3 full) for a diesel fire pump be checked?
 - A. Daily
 - B. Monthly
 - C. Weekly
 - D. Quarterly
- 82. At what frequency should the electrolyte level in the battery system for a diesel fire pump be checked?
 - A. Daily
 - B. Weekly
 - C. Monthly
 - D. Annually
- 83. How often should the water level in water storage tanks without supervised alarms connected to a constantly attended location be inspected?
 - A. Weekly
 - B. Quarterly
 - C. Monthly
 - D. Annually
- 84. How often should the water level in water storage tanks with supervised alarms connected to a constantly attended location be inspected?
 - A. Weekly
 - B. Monthly
 - C. Annually
 - D. Quarterly
- 85. During the heating season, how often should the water temperature in tanks without low-temperature alarms connected to a constantly attended location be inspected?
 - A. Daily
 - B. Monthly
 - C. Weekly
 - D. Quarterly
- 86. During the heating season, how often should the water temperature in tanks with low-temperature alarms connected to a constantly attended location be inspected?
 - A. Daily
 - B. Weekly
 - C. Quarterly
 - D. Monthly
- 87. How often should the exterior of a water storage tank, supporting structure, vents, foundation, and ladders be inspected?
 - A. Monthly
 - B. Annually
 - C. Quarterly
 - D. Every 3 years

- 88. The interior of steel water storage tanks without corrosion protection must be inspected at what frequency?
 - A. Annually
 - B. Every 3 years
 - C. Every 2 years
 - D. Every 5 years
- 89. The interior of all other types of water storage tanks (e.g., steel with protection, wood, concrete) must be inspected at what frequency?
 - A. Annually
 - B. Every 3 years
 - C. Every 10 years
 - D. Every 5 years
- 90. How often should control valves secured only by seals (not locked or supervised) be inspected?
 - A. Daily
 - B. Monthly
 - C. Weekly
 - D. Quarterly

Answers for ITM Frequencies (81-90):

- 91. How often should control valves that are locked or electrically supervised be inspected?
 - A. Weekly
 - B. Quarterly
 - C. Monthly
 - D. Annually

92. At what frequency should the exterior of alarm valves be inspected?

- A. Weekly
- B. Monthly
- C. Quarterly
- D. Annually
- 93. The interior of alarm valves and their associated strainers, filters, and restricted orifices must be inspected how often?
 - A. Annually
 - B. Every 3 years
 - C. Every 10 years
 - D. Every 5 years

94. How often must check valves be inspected internally?

- A. Annually
- B. Every 5 years
- C. Every 3 years
- D. Every 10 years

95. How often should the exterior of preaction and deluge valves be inspected?

- A. Weekly
- B. Quarterly
- C. Monthly
- D. Annually
- 96. The interior of preaction/deluge valves (that can be reset without faceplate removal) must be inspected internally how often?
 - A. Annually
 - B. Every 5 years
 - C. Every 3 years
 - D. Every 10 years
- 97. How often should the exterior of dry pipe valves be inspected?
 - A. Weekly
 - B. Monthly
 - C. Quarterly
 - D. Annually

- 98. Strainers, filters, restricted orifices, and diaphragm chambers associated with preaction, deluge, and dry pipe valves require internal inspection at what frequency?
 - A. Annually
 - B. Every 3 years
 - C. Every 10 years
 - D. Every 5 years
- 99. How often should Fire Department Connections (FDCs) be inspected?
 - A. Monthly
 - B. Semiannually
 - C. Quarterly
 - D. Annually
- 100. How often should mechanically operated waterflow alarms (e.g., water motor gongs) on wet pipe systems be tested?
 - A. Monthly
 - B. Quarterly
 - C. Semiannually
 - D. Annually

Answers for ITM Frequencies (91-100):

- 101. How often should vane-type and pressure switch-type waterflow alarm devices be tested?
 - A. Monthly
 - B. Semiannually
 - C. Quarterly
 - D. Annually
- 102. At what frequency should the main drain test be conducted on a typical sprinkler system riser?
 - A. Monthly
 - B. Quarterly
 - C. Every 5 years
 - D. Annually
- 103. For systems where the sole water supply is through a backflow preventer or PRV, how often should a main drain test be conducted downstream?
 - A. Monthly
 - B. Annually
 - C. Quarterly
 - D. Every 5 years
- 104. How often must the freezing point of antifreeze solutions be tested?
 - A. Monthly
 - B. Quarterly
 - C. Every 3 years
 - D. Annually
- 105. Gauges on sprinkler systems must be replaced or tested by comparison with a calibrated gauge at what interval?
 - A. Annually
 - B. Every 5 years
 - C. Every 3 years
 - D. Every 10 years
- 106. Representative samples of solder-type sprinklers with extra-high temperature ratings (325°F+) exposed to maximum ambient temperatures must be tested how often?
 - A. Annually
 - B. Every 3 years
 - C. Every 10 years
 - D. Every 5 years
- 107. Fast-response sprinklers that have been in service for 20 years require initial testing, and then retesting at what interval?
 - A. Every 3 years
 - B. Every 10 years
 - C. Every 5 years
 - D. Every 15 years

- 108. Sprinklers (standard response) that have been in service for 50 years require replacement or initial testing, with retesting at what frequency?
 - A. Every 10 years
 - B. Every 5 years
 - C. Every 3 years
 - D. Every 15 years
- 109. Dry sprinklers require replacement or testing after 10 years in service, and then retesting at what interval?
 - A. Every 3 years
 - B. Every 5 years
 - C. Every 15 years
 - D. Every 10 years
- 110. How often must electrically driven fire pumps be operated (no-flow test)?
 - A. Weekly for 10 minutes
 - B. Monthly for 10 minutes
 - C. Weekly for 30 minutes
 - D. Monthly for 30 minutes

Answers for ITM Frequencies (101-110):

- 111. How often must diesel-driven fire pumps be operated (no-flow test)?
 - A. Weekly for 30 minutes
 - B. Weekly for 10 minutes
 - C. Monthly for 10 minutes
 - D. Monthly for 30 minutes
- 112. An annual flow test must be conducted on fire pump assemblies under which conditions?
 - A. Churn (no flow) only
 - B. Peak flow only
 - C. Minimum, rated, and peak flows
 - D. Minimum flow only
- 113. How often should low water temperature alarms on water storage tanks be tested (during cold weather)?
 - A. Weekly
 - B. Quarterly
 - C. Monthly
 - D. Annually
- 114. How often should high and low water level alarms on water storage tanks be tested? A. Monthly
 - B. Semiannually
 - C. Quarterly
 - D. Annually
- 115. Pressure gauges on water storage tanks require testing every 5 years against what standard?
 - A. The original installation pressure
 - B. A gauge accurate to within 10%
 - C. The tank manufacturer's specification
 - D. A calibrated gauge (accuracy within 3%)
- 116. How often must each control valve be operated through its full range and returned to normal?
 - A. Quarterly
 - B. Annually
 - C. Semiannually
 - D. Every 3 years
- 117. Valve supervisory switches (tamper switches) require testing at what frequency? A. Quarterly
 - B. Annually
 - C. Semiannually
 - D. Every 5 years

- 118. How often must the priming water level in supervised preaction systems be tested? A. Weekly
 - B. Quarterly
 - C. Monthly
 - D. Annually

119. Each deluge or preaction valve must undergo a full flow trip test at what frequency?

- A. Quarterly
- B. Semiannually
- C. Every 3 years
- D. Annually

120. How often must the priming water level in dry pipe systems be tested?

- A. Weekly
- B. Monthly
- C. Annually
- D. Quarterly

Answers for ITM Frequencies (111-120):

4. System Components (35 Questions)

- 121. What holds the cap in place on a standard fusible link sprinkler head?
 - A. Water pressure
 - B. Levers and links soldered together
 - C. A glass bulb
 - D. A threaded screw
- 122. Sprinklers manufactured after January 1, 2000, are required to have what identifier? A. UL listing number
 - B. Sprinkler Identification Number (SIN)
 - C. Date of manufacture
 - D. Temperature rating code
- 123. Which type of sprinkler head directs the water stream downward against a convex deflector?
 - A. Upright sprinkler
 - B. Sidewall sprinkler
 - C. Pendent sprinkler
 - D. Concealed sprinkler
- 124. Which type of sprinkler head sprays water upward against a concave deflector? A. Pendent sprinkler
 - B. Upright sprinkler
 - C. Sidewall sprinkler
 - D. Conventional sprinkler
- 125. Where are sidewall sprinkler heads typically installed?
 - A. In the center of large rooms
 - B. Along walls or beneath beams
 - C. Directly on ceiling grids
 - D. Only in dry pipe systems
- 126. What must happen before a concealed sprinkler head can activate?
 - A. The ceiling tile must fall
 - B. A smoke detector must trigger it
 - C. The decorative cover plate must detach
 - D. Water pressure must increase significantly
- 127. What is the typical shape of the water spray pattern from a standard pendent or upright sprinkler?
 - A. Flat fan shape
 - B. Umbrella or conical shape
 - C. Solid stream shape
 - D. Rectangular shape

- 128. What Response Time Index (RTI) range characterizes a standard response sprinkler head?
 - A. 50 or less
 - B. 80 or more
 - C. 51 to 79
 - D. Exactly 100

129. What Response Time Index (RTI) range characterizes a quick response sprinkler head?

- A. 51 to 79
- B. 80 or more
- C. 50 or less
- D. 100 or more

130. What is the typical size of the glass bulb in a standard response sprinkler?

- A. 1 mm
- B. 3 mm
- C. 7 mm
- D. 5 mm

Answers for System Components (121-130):

131. What is the typical size of the glass bulb in a quick response sprinkler?

- A. 3 mm
- B. 1 mm
- C. 5 mm
- D. 7 mm
- 132. What type of sprinkler is specifically designed to discharge large drops of water to penetrate strong fire updrafts?
 - A. ESFR sprinkler
 - B. Large drop sprinkler
 - C. Residential sprinkler
 - D. Sidewall sprinkler
- 133. What color frame or bulb indicates an "Ordinary" temperature classification (135-170°F)?
 - A. White frame / Yellow or Green bulb
 - B. Uncolored/Black frame / Orange or Red bulb
 - C. Blue frame / Blue bulb
 - D. Red frame / Purple bulb
- 134. What color frame or bulb indicates an "Intermediate" temperature classification (175-225°F)?
 - A. Blue frame / Blue bulb
 - B. Uncolored/Black frame / Orange or Red bulb
 - C. White frame / Yellow or Green bulb
 - D. Red frame / Purple bulb
- 135. What color frame or bulb indicates a "High" temperature classification (250-300°F)?A. White frame / Yellow or Green bulb
 - B. Red frame / Purple bulb
 - C. Uncolored/Black frame / Orange or Red bulb
 - D. Blue frame / Blue bulb
- 136. In which location would a sprinkler head with a higher temperature rating typically be required?
 - A. Office space
 - B. Near a boiler or oven
 - C. Residential bedroom
 - D. Unheated attic
- 137. What is the term for the build-up of foreign material on sprinkler heads that can insulate them or prevent operation?
 - A. Corrosion
 - B. Scaling
 - C. Loading
 - D. Pitting

- 138. What is the recommended method for dealing with light dust deposits on sprinkler heads?
 - A. Wiping with a damp cloth
 - B. Scraping with a tool
 - C. Using compressed air or vacuum
 - D. Painting over the dust
- 139. What is the minimum number of spare sprinklers required for a facility with 500 installed sprinklers?
 - A. Six
 - B. Eighteen
 - C. Twelve
 - D. Twenty-four
- 140. What is the maximum number of spare sprinklers typically required, regardless of the total number installed (over 1000)?
 - A. Twelve
 - B. Thirty-six
 - C. Twenty-four
 - D. Forty-eight

Answers for System Components (131-140):

- 141. What is the normal water-to-air ratio maintained in a pressure tank?
 - A. One-third water, two-thirds air
 - B. Two-thirds water, one-third air
 - C. Half water, half air
 - D. Three-quarters water, one-quarter air
- 142. What device typically maintains the air pressure automatically in a pressure tank?
 - A. A manual pump
 - B. A pressure relief valve
 - C. An air compressor
 - D. A nitrogen cylinder
- 143. What is the maximum gross capacity typically allowed for a single pressure tank? A. 3,000 gallons
 - B. 9,000 gallons
 - C. 6,000 gallons
 - D. 12,000 gallons
- 144. What parameters are monitored by the high/low alarm systems required on primary supply pressure tanks?
 - A. Water temperature and flow rate
 - B. Tank corrosion and sediment level
 - C. Air pressure and water level
 - D. Compressor runtime and voltage
- 145. What component in a pressure tank allows visual inspection of the water level?
 - A. Pressure gauge
 - B. Air vent
 - C. Sight gauge (gauge glass)
 - D. Settling basin
- 146. What is the minimum elevation a gravity tank should generally be above the highest line of sprinklers it supplies?
 - A. 10 feet
 - B. 25 feet
 - C. 15 feet
 - D. 50 feet
- 147. For every 1 foot of elevation difference, how much water pressure does a gravity tank generate?
 - A. 0.500 psi
 - B. 1.000 psi
 - C. 0.433 psi
 - D. 2.304 psi

- 148. What device typically controls the automatic filling of a gravity tank?
 - A. A timer switch
 - B. Float switches
 - C. A pressure sensor
 - D. A manual valve
- 149. What is the minimum temperature the water inside a gravity tank must be maintained at, especially during freezing weather?
 - A. 32°F
 - B. 45°F
 - C. 40°F
 - D. 50°F
- 150. What type of fire pump is currently standard and preferred due to reliability and low maintenance?
 - A. Rotary pump
 - B. Piston pump
 - C. Gear pump
 - D. Centrifugal pump

Answers for System Components (141-150):

- 151. What part of a centrifugal pump grabs the water and discharges it under increased pressure?
 - A. The impeller
 - B. The shaft
 - C. The casing
 - D. The bearing
- 152. Which type of fire pump has the capability to draw water from sources like ponds or wells (lift water)?
 - A. Standard centrifugal pump
 - B. Jockey pump
 - C. Vertical turbine pump
 - D. Booster pump
- 153. What is the purpose of the settling basin at the bottom of a pressure tank?
 - A. To increase air volume
 - B. To prevent sediment entering the system
 - C. To measure water level
 - D. To facilitate draining
- 154. What should be used to protect sprinkler heads exposed to corrosive conditions?A. Standard paint
 - B. Protective wax or lead coating
 - C. Plastic bags
 - D. Higher temperature rating
- 155. What is the consequence of excessive "loading" on a sprinkler head?
 - A. It may operate too quickly
 - B. It may prevent or delay operation
 - C. It may leak continuously
 - D. It may change the spray pattern

Answers for System Components (151-155):

5. Water Supplies for Sprinkler Systems (30 Questions)

- 156. Which is NOT listed as a potential primary water supply source for sprinkler systems?
 - A. Public water mains
 - B. Fire Department pumpers
 - C. Gravity tanks
 - D. Pressure tanks
- 157. What is a primary reason for requiring a secondary water supply for a sprinkler system?
 - A. To reduce installation costs
 - B. To simplify maintenance procedures
 - C. The primary supply might fail or be insufficient
 - D. To allow for smaller pipe sizes
- 158. What type of valve, often located in a sidewalk box, is used to shut off the main public water supply to a sprinkler system?
 - A. OS&Y valve
 - B. Non-indicating curb valve
 - C. Check valve
 - D. Ball valve
- 159. What tool is typically required to operate a curb valve located in a sidewalk box?
 - A. Standard pipe wrench
 - B. Special key wrench
 - C. Adjustable wrench
 - D. Socket wrench set
- 160. What does "OS&Y" stand for in the context of sprinkler control valves?
 - A. Open Stem & Yoke
 - B. Overhead Sprinkler & Y-connector
 - C. Outside Screw & Yoke
 - D. On/Off Switch & Yoke
- 161. How can you visually determine if an OS&Y valve is fully open?
 - A. The handle is parallel to the pipe
 - B. The stem is fully extended (out)
 - C. The indicator flag shows "OPEN"
 - D. The stem is fully retracted (in)
- 162. What is the purpose of installing sectional control valves within a building's sprinkler system?
 - A. To increase overall system pressure
 - B. To automatically drain the system
 - C. To allow isolation of specific areas for repair
 - D. To connect directly to the FDC

- 163. What information must be posted on the exterior wall near a sprinkler system shutoff valve located in a sidewalk box?
 - A. The type of sprinkler system
 - B. The distance to the valve box
 - C. The date of the last inspection
 - D. The name of the installing contractor
- 164. What is the primary purpose of a Fire Department Connection (FDC)?
 - A. To drain the sprinkler system
 - B. To allow the FD to pump supplemental water
 - C. To test the system alarms
 - D. To provide drinking water access
- 165. What color should the entire Fire Department Connection be painted for a non-automatic sprinkler system?
 - A. Red
 - B. Silver
 - C. Green
 - D. Yellow

Answers for Water Supplies (156-165):

- 166. What color should the FDC caps be painted for an automatic sprinkler system?
 - A. Red
 - B. Yellow
 - C. Green
 - D. Silver

167. What component within the FDC piping prevents backflow from the private water supply into the connection?

- A. Automatic ball drip
- B. Lower check valve
- C. Pressure gauge
- D. Strainer
- 168. In what orientation must the automatic ball drip device be installed?
 - A. Vertically, pointing up
 - B. Horizontally
 - C. Vertically, pointing down
 - D. At a 45-degree angle
- 169. What is a significant advantage of using a gravity tank as a water supply?
 - A. It provides very high pressure
 - B. It is highly reliable (no pumps needed for discharge)
 - C. It requires minimal elevation
 - D. It takes up very little space
- 170. What is the minimum required temperature for water in a gravity tank?
 - A. 32°F
 - B. 50°F
 - C. 40°F
 - D. 60°F
- 171. What is a primary limitation of pressure tanks as a sole water supply?
 - A. Low pressure output
 - B. Small water storage capacity
 - C. Slow discharge rate
 - D. Susceptibility to freezing
- 172. What is the minimum air pressure typically required in a pressure tank?
 - A. 25 psi
 - B. 75 psi
 - C. 50 psi
 - D. 100 psi
- 173. What is the function of a fire pump in relation to water supply?
 - A. To purify the water
 - B. To boost pressure and/or volume
 - C. To add antifreeze solution
 - D. To measure water usage

- 174. What condition is required for the suction supply of an automatic fire pump (like a standard centrifugal pump)?
 - A. It must be below atmospheric pressure
 - B. It must come directly from a well
 - C. It must be under a positive head (pressurized)
 - D. It must be pre-filtered
- 175. What type of tank often supplies water to a fire pump under gravity?
 - A. Pressure tank
 - B. Suction tank
 - C. Expansion tank
 - D. Septic tank

Answers for Water Supplies (166-175):

- 176. Which type of fire pump can draw water from a source below the pump (e.g., pond, river)?
 - A. Jockey pump
 - B. Vertical turbine pump
 - C. Booster pump
 - D. Centrifugal pump
- 177. What is the primary concern when using a well as a direct water supply source for a fire pump?
 - A. Water contamination
 - B. The well might dry up unexpectedly
 - C. High water temperature
 - D. Excessive water pressure
- 178. What potential issue can arise from debris (mud, leaves) entering a fire pump drawing from an open source?
 - A. Pump damage or pipe obstruction
 - B. Overheating of the pump motor
 - C. Electrical short circuits
 - D. Freezing of the water supply
- 179. How are fire pumps typically activated automatically?
 - A. By a timer schedule
 - B. By a drop in system water pressure
 - C. By sensing high temperatures
 - D. By manual activation only
- 180. What is the role of a pressure maintenance (jockey) pump in relation to the main fire pump activation?
 - A. It activates the main pump
 - B. It runs simultaneously with the main pump
 - C. It prevents the main pump from activating on minor leaks
 - D. It boosts the main pump's output
- 181. What is the required minimum working space clearance around Fire Department Connections?
 - A. 12 inches width, 12 inches depth, 48 inches height
 - B. 36 inches width, 36 inches depth, 78 inches height
 - C. 24 inches width, 24 inches depth, 60 inches height
 - D. 48 inches width, 48 inches depth, 84 inches height
- 182. What is the purpose of painting FDC caps different colors (red, green, yellow)? A. Aesthetic preference
 - B. To identify the system type (standpipe, sprinkler, combined)
 - C. To indicate the pressure rating
 - D. To show the last test date

- 183. Which valve type is NOT typically used as a main control valve for a sprinkler system water supply?
 - A. OS&Y valve
 - B. Check Valve
 - C. Post Indicator Valve (PIV)
 - D. Curb Valve
- 184. Why should indicating control valves (like OS&Y or PIV) be backed off slightly (e.g., ¹/₄ turn) from the fully open position?
 - A. To reduce water pressure
 - B. To prevent the valve from jamming
 - C. To allow for thermal expansion
 - D. To make the valve leak slightly for testing
- 185. What ensures that water from a gravity tank is always available to the system without pump operation?
 - A. Air pressure
 - B. A backup generator
 - C. The force of gravity
 - D. A manual bypass valve

Answers for Water Supplies (176-185):

6. Out of Service Systems (OOS) (25 Questions)

- 186. Who must be made aware of and authorize the placing of a sprinkler system out of service for a planned removal?
 - A. Building tenants only
 - B. The local news station
 - C. The COF holder and impairment coordinator
 - D. The insurance adjuster only
- 187. Which situation constitutes an unplanned out-of-service condition?
 - A. Annual main drain test
 - B. An empty water supply tank
 - C. Replacing a few sprinkler heads on one floor
 - D. Scheduled pump maintenance
- 188. What is a key responsibility of fire watch personnel during an OOS condition?
 - A. Repairing the sprinkler system
 - B. Continuously patrolling the affected area for fire
 - C. Conducting fire drills
 - D. Resetting the fire alarm panel
- 189. Fire watch personnel must be provided with at least one approved means for:
 - A. Accessing building plans
 - B. Notification of the Fire Department
 - C. Operating the HVAC system
 - D. Documenting maintenance activities
- 190. For how long must records of a fire watch be maintained on the premises after the watch concludes?
 - A. 12 hours
 - B. 48 hours
 - C. 24 hours
 - D. 72 hours
- 191. Under which circumstance is FDNY notification required for an OOS sprinkler system?
 - A. OOS duration is less than 8 hours
 - B. OOS affects more than one floor
 - C. OOS affects only a small part of one floor
 - D. OOS is for routine visual inspection
- 192. If repairs to an OOS sprinkler system cannot be completed within 8 hours, what action is required?
 - A. Extend the fire watch indefinitely
 - B. Obtain an extension from the building owner
 - C. Notify the Fire Department
 - D. Shut down adjacent systems

- 193. What information is crucial to provide during the initial FDNY notification of an OOS condition?
 - A. The manufacturer of the system components
 - B. The cost of the required repairs
 - C. The estimated time the system will be OOS
 - D. The history of previous impairments
- 194. If a minor defect is found and not corrected by the owner within 30 days, it is deemed an impairment and must be reported in writing to:
 - A. The building tenants
 - B. The Fire Department
 - C. The insurance company
 - D. The system manufacturer
- 195. What color tag must be placed at control valves when a system is fully out of service?
 - A. Green tag
 - B. Red tag
 - C. Yellow tag
 - D. Orange tag

Answers for Out of Service Systems (186-195):

196. What color tag must be placed at control valves when a system is partially out of service?

- A. Green tag
- B. Red tag
- C. Yellow tag
- D. Blue tag

197. What color disc must be placed on affected FDCs when a system is fully out of service?

- A. Blue disc
- B. Red disc
- C. White disc
- D. Green disc
- 198. What color disc must be placed on affected FDCs when a system is partially out of service?
 - A. White disc
 - B. Red disc
 - C. Blue disc
 - D. Green disc
- 199. Besides control valves and FDCs, where else should OOS tags be placed?
 - A. On elevators
 - B. At the Fire Command Center or building lobby
 - C. At the main electrical panel
 - D. On exterior windows
- 200. Who is authorized to place OOS tags and discs on a system?
 - A. Building tenants
 - B. FDNY, Owner, MFSPC, or MP (as restricted)
 - C. Security guards
 - D. Any COF holder
- 201. Before authorizing a planned removal from service, the impairment coordinator should notify which parties?
 - A. Local restaurants
 - B. Central station, insurance carrier, occupants
 - C. The media
 - D. Neighboring buildings
- 202. For how long may building staff conduct a fire watch (in lieu of a fire guard) during the initial phase of an OOS condition (if area < 50,000 sq ft)?
 - A. 1 hour
 - B. 4 hours
 - C. 2 hours
 - D. 8 hours

- 203. What must be done before returning an OOS system back to service?
 - A. Repaint the affected piping
 - B. Update the building evacuation plan
 - C. Conduct necessary tests and inspections
 - D. Obtain written permission from tenants
- 204. After restoring a system to service, who must be notified?
 - A. The system manufacturer
 - B. FDNY dispatcher, owner, tenants, central station
 - C. The original installer
 - D. The local utility company
- 205. What must be done with OOS tags and discs once the system is restored to service?
 - A. Archived for records
 - B. Removed immediately
 - C. Left in place for 24 hours
 - D. Given to the Fire Department
- 206. What is the primary method for protecting water-filled pipes from freezing in unheated areas?
 - A. Increasing water pressure
 - B. Insulation or heating trace
 - C. Using smaller diameter pipes
 - D. Draining the pipes daily
- 207. What type of system might be used as an alternative to protecting wet pipes from freezing?
 - A. A deluge system
 - B. An automatic dry pipe system
 - C. A preaction system
 - D. A non-automatic system
- 208. If an antifreeze solution is connected to a potable water supply, what may be required?
 - A. Increased pipe insulation
 - B. A larger pressure tank
 - C. A backflow preventer
 - D. More frequent testing
- 209. What action must be taken if a COF holder observes a minor defect during an inspection?
 - A. Ignore it until it becomes major
 - B. Report it to the owner/representative
 - C. Report it immediately to the FDNY
 - D. Tag the system as impaired

- 210. Who assigns the impairment coordinator for a building?
 - A. The Fire Department
 - B. The building owner
 - C. The Certificate of Fitness holder
 - D. The insurance company

Answers for Out of Service Systems (196-210):

7. Inspection, Testing & Maintenance Activities (20 Questions)

- 211. What is the primary purpose of conducting a main drain test?
 - A. To check alarm functionality
 - B. To assess water supply condition and valve status
 - C. To verify sprinkler head operation
 - D. To flush debris from branch lines
- 212. During a main drain test, what indicates a potential problem with the water supply or control valves?
 - A. A sudden increase in static pressure
 - B. A 10% or greater drop in residual pressure compared to previous tests
 - C. Water discharging too quickly
 - D. The alarm failing to sound immediately
- 213. How is the water flow alarm typically tested on a wet pipe system?
 - A. By manually activating the alarm panel
 - B. By opening the inspector's test connection
 - C. By opening the main drain valve fully
 - D. By closing and reopening a control valve
- 214. If freezing conditions prohibit using the inspector's test connection, what alternative method can be used to test the flow alarm on a wet pipe system?
 - A. Using the main drain connection
 - B. Simulating flow at the alarm panel
 - C. Using the bypass connection
 - D. Temporarily heating the test connection
- 215. How often should the interior of alarm valves, including strainers and orifices, be inspected?
 - A. Annually
 - B. Every 5 years
 - C. Every 2 years
 - D. Only when problems occur
- 216. What procedure is used to test valve supervisory (tamper) switches?
 - A. Fully closing and opening the valve
 - B. Turning the valve slightly from its normal position
 - C. Measuring the electrical resistance
 - D. Applying heat to the switch

- 217. A tamper switch should initiate a signal within how much movement from the valve's normal position?
 - A. The first half turn of the wheel
 - B. The first two revolutions or 1/5th of stem travel
 - C. Only when fully closed
 - D. Only when fully open
- 218. How is the trip test for a dry pipe valve typically initiated?
 - A. By increasing air pressure rapidly
 - B. By manually forcing the clapper open
 - C. By opening the inspector's test valve to release air
 - D. By activating the fire alarm system
- 219. During a dry pipe valve trip test, what two key time intervals are usually recorded?
 - A. Time to fill the system & time to drain
 - B. Time for air pressure to build & time for alarm to sound
 - C. Time to trip the valve & time for water delivery to test outlet
 - D. Time to close main drain & time to reset valve
- 220. How often must a full flow trip test (control valve fully open) be performed on a dry pipe valve?
 - A. Annually
 - B. Every 5 years
 - C. Every 3 years
 - D. Only upon system alteration

Answers for ITM Activities (211-220):

- 221. What must be done with all low point drains on a dry pipe system after a trip test? A. Left open permanently
 - B. Opened to drain water, then closed
 - C. Sealed with thread sealant
 - D. Replaced with new drains
- 222. How often must dry pipe and preaction systems be tested for air leakage?
 - A. Annually
 - B. Every 5 years
 - C. Every 3 years
 - D. Only if leaks are suspected
- 223. How often must pressure reducing valves undergo a full flow test?
 - A. Annually
 - B. Every 5 years
 - C. Every 3 years
 - D. Every 10 years
- 224. How often must backflow prevention assemblies in fire protection piping be tested (forward flow and backflow performance)?
 - A. Quarterly
 - B. Annually
 - C. Semiannually
 - D. Every 5 years
- 225. What maintenance activity is required annually for the operating stems of OS&Y valves?
 - A. Repainting
 - B. Lubrication
 - C. Tightening the packing nut
 - D. Checking for magnetism
- 226. What is the primary purpose of an internal obstruction investigation of sprinkler piping?
 - A. To check for proper pipe slope
 - B. To detect foreign material (scale, debris, MIC)
 - C. To verify pipe material type
 - D. To measure internal pipe diameter
- 227. How often should an internal obstruction investigation typically be conducted on wet pipe systems?
 - A. Annually
 - B. Every 5 years
 - C. Every 3 years
 - D. Every 10 years

- 228. What condition found during an obstruction investigation warrants testing for Microbiologically Influenced Corrosion (MIC)?
 - A. Clean, clear water
 - B. Presence of tubercles or slime
 - C. Minor pipe discoloration
 - D. Air trapped in the piping

229. What action is required if an obstruction is found during the 5-year internal inspection of one wet pipe system in a building with multiple systems?

- A. Flush only the affected system
- B. Replace all sprinkler heads in the building
- C. Inspect all wet pipe systems internally
- D. Increase the frequency of main drain tests
- 230. What minimum information should be included in detailed inspection, testing, and maintenance records?
 - A. Inspector's name and date only
 - B. Building owner's contact information
 - C. Conditions found, corrective actions, pressures, COF signature
 - D. Weather conditions during the activity

Answers for ITM Activities (221-230):

8. Water-Flow Alarms and Supervision (15 Questions)

- 231. A sprinkler system equipped with a water flow alarm serves as both a fire extinguishing system and what other function?
 - A. A security system
 - B. A plumbing leak detector
 - C. An automatic fire alarm
 - D. A pressure regulation system
- 232. What is the primary benefit of having an alarm sound soon after a sprinkler head opens?
 - A. It helps locate the control valve
 - B. It allows occupants time to evacuate and summons FDNY
 - C. It signals the need for maintenance
 - D. It automatically shuts off the water flow
- 233. Besides fire, what else can cause a waterflow alarm to activate?
 - A. Low ambient temperature
 - B. Broken pipes or system leakage
 - C. High air pressure in a dry system
 - D. Scheduled system testing
- 234. What type of audible alarm device is typically required on the outside of a building served by a sprinkler system?
 - A. Chime bell
 - B. Water motor gong or electric bell/horn/siren
 - C. Recorded voice message
 - D. Low-frequency sounder
- 235. Where should water-operated alarm devices (like water motor gongs) be located?
 - A. On the roof near the tank
 - B. Near the alarm valve or water control valve
 - C. In the main electrical room
 - D. At the highest point of the system
- 236. Which of the following is typically supervised to detect potential impairments in a sprinkler system?
 - A. Sprinkler head temperature rating
 - B. Water supply control valve position
 - C. Pipe material type
 - D. Color of the sprinkler piping
- 237. What condition in a water supply tank is commonly supervised?
 - A. Water clarity
 - B. Low water level
 - C. Tank material thickness
 - D. Rate of water evaporation

- 238. What condition in a pressure tank is typically supervised?
 - A. Internal tank coating condition
 - B. Rate of air compressor cycling
 - C. High or low air pressure/water level
 - D. Age of the tank
- 239. What condition in a dry pipe system's piping is usually supervised?
 - A. Internal pipe corrosion
 - B. Water velocity during flow
 - C. High or low air pressure
 - D. Pipe insulation thickness
- 240. What failure related to electric fire pumps is often supervised?
 - A. Pump noise level
 - B. Electric power supply failure or phase reversal
 - C. Pump impeller speed
 - D. Color of the pump casing

Answers for Water-Flow Alarms & Supervision (231-240):

- 241. What is the basic operating principle of most water-flow alarm valves (e.g., alarm check valves)?
 - A. They sense heat directly
 - B. A check valve lifts off its seat upon water flow
 - C. They detect smoke particles
 - D. They measure air pressure changes
- 242. How does a vane-type waterflow switch detect water flow?
 - A. It measures pressure drop
 - B. It senses the temperature of the water
 - C. A paddle inserted in the pipe is moved by flow
 - D. It uses ultrasonic waves
- 243. In which types of systems should vane-type waterflow switches generally NOT be installed?
 - A. Wet pipe systems
 - B. Dry pipe or preaction systems
 - C. Standpipe systems
 - D. Deluge systems
- 244. What is the purpose of an alarm retarding device often used with alarm check valves?
 - A. To speed up the alarm signal
 - B. To increase the volume of the alarm
 - C. To prevent false alarms from pressure surges
 - D. To test the alarm circuit automatically
- 245. When control valves are closed for maintenance on a centrally monitored system, who should be notified to prevent false alarms?
 - A. The building occupants
 - B. The central station company
 - C. The Fire Department dispatch
 - D. The insurance provider

Answers for Water-Flow Alarms & Supervision (241-245):

9. Hanging, Bracing and Restraint of Piping (10 Questions)

246. What is the primary function of hangers and bracing in a sprinkler system?

- A. To insulate the pipes
- B. To facilitate water flow
- C. To provide structural support for the piping
- D. To identify different pipe sections
- 247. Which document contains detailed requirements for hanger design and installation? A. NFPA 10 (Fire Extinguishers)
 - B. NFPA 13 (Sprinkler Systems)
 - C. NFPA 72 (Fire Alarm Code)
 - D. NFPA 25 (ITM Standard)
- 248. What type of makeshift hanger material is explicitly prohibited for sprinkler piping? A. Threaded rods
 - B. Perforated strapping or bailing wire
 - C. Clevis hangers
 - D. Split ring hangers
- 249. What is the maximum allowable spacing between hangers for standard wall steel pipe with a diameter of 1 inch?
 - A. 10 feet
 - B. 15 feet
 - C. 12 feet
 - D. 18 feet
- 250. What is the maximum allowable spacing between hangers for standard wall steel pipe with a diameter of 2 inches?
 - A. 10 feet
 - B. 15 feet
 - C. 12 feet
 - D. 18 feet
- 251. What is the minimum required distance between a hanger assembly and the centerline of an upright sprinkler head?
 - A. 1 inch
 - B. 6 inches
 - C. 3 inches
 - D. 12 inches

- 252. What is the maximum unsupported length allowed between the end sprinkler and the last hanger for 1-inch steel pipe (systems < 100 psi)?
 - A. 18 inches
 - B. 36 inches
 - C. 24 inches
 - D. 48 inches
- 253. What is the maximum distance allowed between supports (riser clamps/hangers) for vertical sprinkler risers?
 - A. 10 feet
 - B. 25 feet
 - C. 15 feet
 - D. 40 feet
- 254. What is the minimum required hanger rod diameter for supporting sprinkler pipe up to 4 inches in diameter?
 - A. 1/4 inch
 - B. 1/2 inch
 - C. 3/8 inch
 - D. 5/8 inch
- 255. What is the primary purpose of seismic bracing on sprinkler systems?
 - A. To support vertical pipe weight
 - B. To prevent pipe corrosion
 - C. To resist horizontal movement during earthquakes
 - D. To allow for pipe expansion

Answers for Hanging, Bracing & Restraint (246-255):

10. General Procedures & Responsibilities (10 Questions)

256. Who holds the ultimate responsibility for maintaining the fire protection systems within a building?

- A. The Certificate of Fitness holder
- B. The building owner
- C. The Fire Department
- D. The insurance company

257. The building owner must assign which individual to manage system impairments?

- A. Chief Engineer
- B. Impairment Coordinator
- C. Safety Officer
- D. Head of Security

258. For how long must detailed records of all system inspections, tests, servicing, and maintenance be kept?

- A. 1 year
- B. 3 years
- C. 2 years
- D. 5 years

259. Where should maintenance and inspection records typically be kept?

- A. At the Fire Department headquarters
- B. On the premises or other approved location
- C. Off-site with the contractor
- D. With the building's architect

260. In addition to detailed logs, what must be posted near the main water supply control valve?

- A. A list of tenants
- B. An approved card with inspection dates and signatures
- C. The building's insurance policy
- D. The fire pump manufacturer's manual

261. If defects reported to the owner are not corrected within 30 days, who must the COF holder notify?

- A. The building tenants
- B. The Fire Department Borough Communication Office
- C. The system installer
- D. The local news outlet

262. Failure to make inspections, maintain records, or report defects can lead to what consequence for the COF holder?

- A. Mandatory retraining
- B. Revocation of the Certificate of Fitness
- C. A promotion
- D. A warning letter only

263. Which individual is generally limited to performing ITM on sprinkler systems in residential occupancies with 30 heads or less and no booster pump?

- A. S-12 COF holder
- B. Master Plumber (MP) with S-12/S-15 COF
- C. Engineer with S-12 COF
- D. MFSPC with S-12/S-15 COF

264. Which individual is authorized to perform the full range of inspection, testing, maintenance, and repair/replacement on sprinkler systems?

- A. S-12 COF holder only
- B. MFSPC (A or B) with S-12/S-15 COF
- C. Engineer with S-12 COF
- D. Master Plumber (MP) with S-12/S-15 COF

264. What is the primary role of the S-12/S-15 COF holder regarding sprinkler systems?

- A. System design and installation
- B. Visual inspections, notifications, record keeping
- C. Major repairs and alterations
- D. Conducting hydrostatic tests

Answers for General Procedures & Responsibilities (256-265):

11. Definitions (5 Questions)

266. What is an Alarm Notification Appliance?

- A. A device that detects fire
- B. A component that issues an alert (bell, horn, light)
- C. A valve that controls water flow
- D. A switch monitoring valve position

267. What is a Deluge Sprinkler System?

- A. A system with water always in pipes
- B. A system using open sprinklers and a detection system
- C. A system using air pressure and closed heads
- D. A system containing antifreeze solution

268. What is a Fire Department Connection (FDC)?

- A. The main water supply valve
- B. An internal hose connection point
- C. An external connection for FD pumping supplemental water
- D. The fire alarm control panel connection

269. What does "Impairment" mean in the context of fire protection systems?

- A. A scheduled maintenance activity
- B. A minor cosmetic defect
- C. A condition where the system may not function in a fire
- D. An upgrade to system components

270. What is a Pendent Sprinkler?

- A. A sprinkler designed for upright installation
- B. A sprinkler designed to spray water downward
- C. A sprinkler designed for sidewall installation
- D. A sprinkler with a protective cover plate

Answers for Definitions (266-270):

PART 2: Standard Exam Paper Questions

