

# DCD Mock Exam Paper – Fire Protection Systems (Sprinklers Focus)

**Format:** 90 minutes | 25 Questions | Passing Score: 70%

**Reference Codes:** UAE Fire & Life Safety Code, NFPA 13, 14, 20, 25, 101

## Part A – Multiple Choice (10 Questions)

1. Minimum design density for Ordinary Hazard Group 2?  
a) 0.10 gpm/ft<sup>2</sup> b) 0.15 gpm/ft<sup>2</sup> c) 0.20 gpm/ft<sup>2</sup> d) 0.30 gpm/ft<sup>2</sup>
2. The maximum sprinkler coverage for Light Hazard?  
a) 130 sq.ft b) 200 sq.ft c) 225 sq.ft d) 400 sq.ft
3. Hose stream allowance for Ordinary Hazard occupancies:  
a) 100 gpm b) 250 gpm c) 500 gpm d) 750 gpm
4. What is the minimum pipe schedule for a wet system riser?
5. Maximum spacing between quick-response sprinklers in Light Hazard?
6. Which NFPA standard governs sprinkler installation?
7. Sprinklers must be installed within what distance from a wall in LH?
8. What is the minimum test pressure for underground piping?
9. Which type of system uses pressurized air or nitrogen in pipes?
10. Sprinkler heads must be installed level unless \_\_\_\_\_.

## Part B – Short Answer (10 Questions)

11. Explain when a dry pipe system is required in UAE.
12. State the minimum operating pressure for standard spray sprinklers.
13. List two exemptions where sprinklers may not be required in electrical rooms.
14. Define Hydrostatic Test and its acceptance criteria.
15. What Civil Defence approvals are required before starting installation?
16. Describe the role of the fire department connection (FDC).
17. What is the purpose of a floor control valve assembly?
18. State the difference between Ordinary Hazard Group 1 and Group 2.
19. When is a pre-action system recommended?
20. What is the maximum permissible distance between hangers for 2" pipe?

## Part C – Scenario Based (4 Questions)

21. A warehouse (OH-2) requires sprinklers. The floor area is 4,000 m<sup>2</sup>. Explain how you determine density/area method, hose stream allowance, and water demand curve for approval.
22. A hospital ICU ceiling is 3 m high with ceiling-mounted sprinklers. What special precautions are taken in healthcare occupancies?

23. During inspection, Civil Defence finds sprinklers 20 inches below the ceiling. What is the code violation and corrective action?
24. Design a riser diagram (conceptual) for a 15-storey residential building showing: floor control valves, fire pump connection, riser with hose valves, and fire department connection.

### **Part D – Calculation Problem (1 Question)**

25. A Light Hazard office requires sprinklers at 0.10 gpm/ft<sup>2</sup> over 1,500 ft<sup>2</sup>. Calculate the sprinkler demand in gpm. Add hose stream allowance. State the total system demand.

# Answer Key & Explanations

1. c) 0.20 gpm/ft<sup>2</sup>
2. b) 200 sq.ft
3. b) 250 gpm
4. Minimum 4-inch riser
5. 15 ft
6. NFPA 13
7. 4 inches (minimum)
8. 200 psi for 2 hours
9. Dry pipe system
10. Unless manufacturer permits otherwise
11. In areas subject to freezing temperatures
12. 7 psi (0.5 bar)
13. Rooms <9 m<sup>2</sup> with fire-rated construction
14. Hydro test = 200 psi for 2 hrs, no leakage
15. Authority-stamped drawings, hydraulic calcs, material approvals
16. Allows fire dept. to boost water supply
17. Controls sprinkler zones per floor
18. OH1 = low fuel load, OH2 = higher fuel load
19. For data centers, museums (sensitive areas)
20. 12 ft
- 21–25. Detailed scenario answers per NFPA 13/UAE Fire Code.