Ventilation

1. What should the roof be sounded with to test the stability? p. 461

A.) Fire fighter's boot
B.) Handle of a tool
*C.) Blunt end of a tool
D.) Ladder tip

2. What is the minimum number of stairwells that should be ventilated and used for an occupant evacuation and rescue route? p. 477

A.) Four
*B.) One
C.) Two
D.) Three

3. Where in the high-rise building is venting a key operation? p. 476

A.) Control room
B.) Individual floors
*C.) Stairways
D.) Lobby

4. Which benefit of ventilation is of primary importance? p. 444

A.) Property conservation
*B.) Life-safety
C.) Overhaul
D.) Visibility

5. What is the primary principle that controls the spread of smoke, heat, and toxic gases within a room or building? p. 443

*A.) Convection
B.) Transgression
C.) Radiation
D.) Conduction

6. Which is **NOT** a correct statement about trench cuts? p. 473

A.) A trench cut is a secondary cut
*B.) A primary vent is not needed
C.) Make the cut far in advance of the fire
D.) Inspection holes can be used to locate the fire

7. What should be used to prevent churning when using smoke ejectors? p. 456

A.) Newspapers
B.) Boarding
*C.) Salvage covers
D.) Plaster board

8. What will be observed when a support member has been sounded? p. 462

A.) Hollow sound and tool will bounce
*B.) Solid sound and tool will bounce
C.) Solid sound and tool will not bounce
D.) Hollow sound and tool will not bounce

9. What is the second priority of the fire fighter in which ventilation plays a role? p. 449

A.) Life safety
*B.) Fire containment
C.) Property conservation
D.) Public relations

10. What is the process of smoke spreading out and banking down called? p. 443

A.) Clouding
B.) Ballooning
C.) Wafting
*D.) Mushrooming

11. What is a good indicator of the fire's temperature? p. 449

A.) Fire ground sound
B.) Fire location
C.) Building construction
*D.) Smoke movement

12. Where in the room should the nozzle be placed when performing hydraulic ventilation? p. 459

A.) At the room entrance
B.) Near the seat of the fire
*C.) Through the ventilation opening
D.) Close to any vertical openings

13. What should always be used to break a window? p. 451

A.) Power tool
*B.) Hand tool
C.) Ladder tip
D.) Vent fan

14. Which is **NOT** a correct statement about breaking glass on the ground floor? p. 451

A.) Clear the remaining glass from the opening with the tool
*B.) Facing the wall, swing forward forcefully with the tip of the tool
C.) Strike the top one-third of the glass with the tool
D.) Wear full personal protective equipment, including eye protection and SCBA

15. What should be used once on the roof to test the stability? p. 461

A.) Fire fighter's boot
*B.) Handle of a tool
C.) Ladder tip
D.) Blunt end of a tool

16. What should be the minimum size of the original ventilation opening in the roof? p. 468

A.) 4 feet long by 6 feet wide (1.2 meters long by 1.8 meters wide)
B.) 2 feet long by 4 feet wide (0.6 meters long by 1.2 meters wide)
*C.) 4 feet long by 4 feet wide (1.2 meters long by 1.2 meters wide)
D.) 6 feet long by 8 feet wide (1.8 meters long by 2.4 meters wide)

17. Which type of ventilation takes advantage of doors and windows? p. 450

A.) Angled
B.) Cross
*C.) Horizontal
D.) Vertical

18. What is a windowless building similar to in terms of ventilation? p. 478

A.) Warehouse
B.) High-rise
*C.) Basement
D.) Residential building

19. Approximately how far apart are the cuts in a trench cut made? p. 473

*A.) 2 to 4 feet (0.6 to 1.2 meters)
B.) 3 to 5 feet (0.9 to 1.5 meters)
C.) 5 to 7 feet (1.5 to 2.1 meters)
D.) 4 to 6 feet (1.2 to 1.8 meters)

20. What can be done to eliminate churning? p. 456

A.) Remove all window coverings near the fan
B.) Place the fan flush with the windowsill
*C.) Completely block the opening around the fan
D.) Place the fan in the upper portion of the window

21. What can be opened in the high-rise to clear trapped smoke one floor at a time? p. 458

A.) Stair shafts
B.) Windows
*C.) Doors
D.) Walls

22. What size are the sections that are used to construct the individual components of a lightweight truss for roof support? p. 464

A.) 30 X 40 (3-inch by 4-inch) (76.2 mm by 101.6 mm)
*B.) 20 X 40 (2-inch by 4-inch) (50.8 mm by 101.6 mm)
C.) 30 X 60 (3-inch by 6-inch) (76.2 mm by 152.4 mm)
D.) 40 X 60 (4-inch by 6-inch) (101.6 mm by 152.4 mm)

23. Which is a correct statement about ventilation? p. 446-447

A.) Negative-pressure ventilation introduces fresh air into the building
*B.) Effective ventilation can be accomplished with an outlet on the downwind side of a building
C.) Temperature and humidity play a role in ventilation especially in short buildings
D.) Wind and atmospheric conditions play no role in ventilation efforts

24. What causes most roofs to eventually fail? p. 463

A.) Faulty construction
B.) Poor ventilation cuts
C.) Shock loading
*D.) Fire exposure

25. How should power saws and other equipment be carried up a ladder? p. 470

*A.) In a sling across your back
B.) Along the beam of the ladder
C.) Up the rungs of the ladder
D.) In a sling across your chest

26. How much time is needed for an underventilated fire to become active for a one-story structure according to tests performed by Building and Fire Research Programs of the National Institute of Standards and Technology and the Underwriters Laboratories? p. 442

A.) 200 seconds
B.) 250 seconds
*C.) 100 seconds
D.) 150 seconds

27. What can a rapid movement of air into the structure mean when a door is opened? p. 454

A.) Large fire
B.) Small fire
*C.) Underventilated fire
D.) Growth stage fire

28. What is the only material that a peak cut can be used on? p. 473

A.) Aluminum
B.) Metal
*C.) Plywood
D.) Steel

29. Which is **NOT** correct about making a ventilation opening? p. 463

A.) Be on a firm section of the roof
*B.) Fire fighters should be downwind
C.) Have a clear exit path
D.) Be on a roof ladder

30. What is often used when attacking a room-and-contents fire? p. 451

*A.) Natural ventilation
B.) Combination ventilation
C.) Negative-pressure ventilation
D.) Mechanical ventilation

31. In which situation is horizontal ventilation most effective? p. 450

A.) The fire is burning hot
*B.) Opening goes directly into the room
C.) Opening is distant from the room
D.) The fire is burning cool

32. Starting with which floor would an extension ladder be needed to break a window? p. 451

A.) Fourth
*B.) Third
C.) Fifth
D.) Second

33. What should fire fighters do once the ventilation opening has been made in the roof? p. 461

A.) Observe the function of the hole
*B.) Move to a safe location
C.) Inventory the tools
D.) Push the roof materials inside

34. Which type of cut is particularly suitable for flat roofs with plywood decking? p. 472

A.) Rectangular cut
*B.) Louver cut
C.) Jalousie cut
D.) Peak cut

35. Where should the ventilation opening be placed to help eliminate the backdraft potential? p. 445

A.) In a lateral position
B.) As low as possible
C.) Next to the seat of the fire
*D.) As high as possible

36. What building feature can create a cold smoke that hardly moves within the building? p. 450

A.) Many windows
B.) Open floor plan
C.) Compartmentalization
*D.) Automatic sprinklers

37. How long should it normally take for the smoke to clear when using a positive-pressure fan? p. 458

*A.) 30 seconds to 1 minute
B.) 15 to 45 seconds
C.) 1 to 1½ minutes
D.) 1½ to 2 minutes

38. What shape panels should be cut and removed when performing a trench cut? p. 475

A.) Square
B.) Triangular
C.) Circular
*D.) Rectangular

39. Which is most useful when clearing smoke and heat out of a room once the fire is under control? p. 458

A.) Pneumatic ventilation
B.) Positive-pressure ventilation
C.) Negative-pressure ventilation
*D.) Hydraulic ventilation

40. Where should the opening to exhaust the superheated air and smoke be located when using positive-pressure ventilation? p. 457

A.) Remote of the seat of the fire
B.) Near to the ventilation fan
C.) Always in the roof space
*D.) Close to the seat of the fire

41. What shape should the examination hole be if a kerf cut is not effective? p. 467

A.) Star
B.) Circle
*C.) Triangle
D.) Square

42. What can be used to clear smoke out of a structure after a fire when natural ventilation is slow? p. 455

A.) Positive-pressure ventilation
B.) Pneumatic ventilation
*C.) Negative-pressure ventilation
D.) Hydraulic ventilation

43. What do fire fighters commonly use to cut ventilation openings? p. 468

A.) Pike poles
*B.) Power saw
C.) Axes
D.) Halligan tools

44. Which is **NOT** a correct statement about performing maintenance on a power saw? p. 478

A.) Fill the bar and chain oil reserves
*B.) Adjust the chain tension before the bar and chain are cooled
C.) Tighten the clutch cover nuts and other nuts and screws
D.) Inspect the air filter, and clean or replace it as needed

45. What can occur when a building is charged with hot gases and most of the available oxygen has been consumed? p. 445

A.) Flameover
B.) Flashover
*C.) Backdraft
D.) Rolldraft

46. What are bowstring trusses generally constructed from? p. 466

A.) Metal
B.) Concrete
*C.) Wood
D.) Aluminum

47. How should you move on the roof when making cuts between supports during a peak cut operation? p. 473

A.) Vertically along the eaves
B.) Horizontally along the eaves
C.) Vertically along the roofline
*D.) Horizontally along the roofline

48. What can be done in a larger building to ventilate smoke? p. 478

A.) Cut larger ventilation openings
B.) Use interior operations to cool the smoke
*C.) Create compartments and ventilate those
D.) Engage the sprinkler system

49. Where should the Halligan tool line up when using it to break a window from above? p. 453

A.) Side of the window
B.) Bottom of the window
C.) Top of the window
*D.) Middle of the window

50. Which should be the last choice for a path to the ventilation hole location on the roof? p. 462

*A.) Center of the roof
B.) Bearing wall area
C.) Roof edges
D.) Hips of the roof

51. Which type of cut is used in strip malls to stop fire spread? p. 473

A.) Triangular
*B.) Trench
C.) Peak
D.) Louver

52. Which is **NOT** a correct statement about vertical ventilation? p. 461

*A.) A flat roof presents more dangers than a pitched roof
B.) Effective ventilation reduces the risk to fire fighters
C.) Safe operations on steep roofs require that fire fighters work from an aerial ladder or basket or a roof ladder
D.) Always perform them as quickly and efficiently as possible

53. Which is **NOT** an advantage of positive-pressure ventilation? p. 458

*A.) Keep fire from entering pipe chases
B.) Fans do not interfere with interior operations
C.) Can contain a fire to a smaller area
D.) Fans do not require much cleaning

54. What geometric shape is used to construct a truss roof system? p. 464

*A.) Triangle
B.) Square
C.) Circle
D.) Pentagon

55. Where should the final cut be made when performing a rectangular roof cut? p. 471

A.) Perpendicular to and slightly outside a roof support
B.) Parallel to and slightly outside a roof support
C.) Perpendicular to and slightly inside a roof support
*D.) Parallel to and slightly inside a roof support

56. What would be indicated if fire or smoke begins to appear near the roof edges? p. 463

*A.) Roof assembly is separating from the walls
B.) Roof supports are sagging
C.) Fire intensity is increasing
D.) Interior operations are pushing the fire

57. What is the most obvious risk in rooftop operations for vertical ventilation? p. 460

A.) Smoke inhalation
B.) Falling from the roof
*C.) Collapse
D.) Trip hazards

58. What is the more suitable use of doorways during ventilation? p. 453

A.) Release of products of combustion
B.) Hose line advancement
*C.) Introduction of fresh air
D.) Tool exchange route

59. What should be determined before beginning roof ventilation operations? p. 460

A.) Location of the fire
B.) Type of building construction
C.) Type of fuel involved
*D.) Type of roof construction

60. What determines how to ventilate a pitched roof? p. 466

A.) Height of the building
B.) Type of building construction
*C.) Roof construction material
D.) Pitch of the roof

61. What is needed to relieve potential flashover conditions? p. 445

*A.) Ventilation and cooling
B.) Ventilation alone
C.) Cooling alone
D.) Ventilation, cooling, and fuel removal

62. In which type of construction are all of the structural components made of noncombustible or limited-combustible materials? p. 447

A.) Wood-frame
*B.) Fire-resistive
C.) Noncombustible
D.) Ordinary

63. What is flat roof construction very similar to? p. 466

A.) Bearing wall
B.) Non-bearing wall
*C.) Floor construction
D.) Frame

64. Where can a triangular cut be made to assist fire fighters when pulling the material from a roof ventilation cut? p. 470

A.) Along one edge of the roofline
B.) Corner of the roofline
C.) Center of the planned opening
*D.) Corner of the planned opening

65. What is the first thing that should be done when performing a readiness check on a power saw? p. 478

*A.) Don proper PPE
B.) Fill gas tank
C.) Check trigger throttle
D.) Check chain for wear

66. What is vertical ventilation most often applied to? p. 459

A.) Wall breaching operations
B.) Window operations
*C.) Roof operations
D.) First floor operations

67. Which technique does modern wood-frame construction use? p. 448

*A.) Platform-frame
B.) Stop-frame
C.) Flowing-frame
D.) Balloon-frame

68. How should the first two cuts of a louver cut be made? p. 472

A.) Parallel to each other and parallel to the roof supports
*B.) Parallel to each other but perpendicular to the roof supports
C.) Perpendicular to each other and perpendicular to the roof supports
D.) Perpendicular to each other but parallel to the roof supports

69. What is the objective when breaking a window with a ladder? p. 451

A.) Move the glass downward
*B.) Push the glass inward
C.) Pull the glass outward
D.) Shove the glass upward

70. Which is **NOT** a correct statement about making a square roof ventilation cut? p. 471

A.) Make the starter hole in a corner
*B.) Pull out the ceiling material
C.) Use a tool to locate the roof supports
D.) Make the first cut parallel to a roof support

71. What is often used to determine the inherent strength and fire resistance of a roof? p. 463

A.) Construction type
*B.) Climate conditions
C.) Local topography
D.) Building size

72. Where are positive-pressure ventilation fans usually set up? p. 456

A.) Interior doorways
*B.) Exterior doorways
C.) Interior shafts
D.) Exterior windows

73. What must be in place before ventilation operations begin? p. 444

A.) Lighting
B.) Rescue team
C.) RIT
*D.) Hose line

74. Where should the ladder be dropped when using it to break the glass in a window? p. 453

A.) Bottom third
B.) One of the edges
C.) Dead center
*D.) Top third

75. Which roof material is too difficult to breach? p. 475

A.) Asphalt
B.) Metal
C.) Wood
*D.) Concrete

76. What kind of roof deck is usually seen on a fire-resistive building? p. 448

A.) Metal
*B.) Concrete
C.) Wood
D.) Iron

77. What part of a flat roof is usually constructed of multiple layers? p. 466

A.) Roof coverings
*B.) Roof deck
C.) Parapet wall
D.) Structural support

78. At what distance from the opening will the positive-pressure ventilation fan be most effective? p. 456

*A.) 3 to 4 feet (1 to 1.2 meters)
B.) 4 to 5 feet (1.2 to 1.5 meters)
C.) 5 to 6 feet (1.5 to 1.8 meters)
D.) 2 to 3 feet (0.6 to 1 meters)

79. Where should ventilation openings be made to prevent flashover? p. 445

*A.) Close to the fire
B.) Far from the fire
C.) Highest point in the building
D.) A lateral opening

80. Which materials can be used to produce trusses? p. 463

A.) Aluminum or cast iron
B.) Wood or aluminum
*C.) Wood or steel
D.) Aluminum or steel

81. What can be used to augment natural ventilation? p. 455

A.) Practical ventilation
B.) Chemical ventilation
C.) Technical ventilation
*D.) Mechanical ventilation

82. Which of the following has been found to **NOT** push the fire or make conditions untenable in other parts of a residence? p. 446

A.) Mechanical ventilation
*B.) Application of water
C.) Natural convection currents
D.) Wind

83. What is the preferred method of attacking a basement fire? p. 476

A.) Create many ventilation openings all over the basement ceiling
B.) Create one main ventilation opening in the center of the basement ceiling
C.) Breach an exterior wall into the basement
*D.) Create many ventilation openings all on one side of the basement ceiling

84. How many safe exits routes should a fire fighter working on a roof have? p. 461

A.) Four
*B.) Two
C.) One
D.) Three

85. Which is **NOT** correct about using a power saw during roof ventilation? p. 468

A.) Ensure that your protective gear is in place and functioning correctly
B.) Work off a roof ladder if possible
C.) Start the saw in an area slightly away from where you will be working
*D.) Always run the saw at half throttle with bursts to full throttle when cutting

86. On which type of decking is the triangular cut a good choice? p. 473

*A.) Metal
B.) Steel
C.) Wood
D.) Concrete

87. Where should the metal decking be cooled from to stop the tar from melting and producing vapors? p. 475

A.) From above
B.) Via attic vents
*C.) From below
D.) Through a topside hole

88. What is a response to the difference in temperature inside and outside a high-rise building? p. 476

A.) Current smoke
B.) Mushrooming
C.) Dry running
*D.) Stack effect

89. Which type of ventilation is essential when fire is burning in the attic of an ordinary construction building? p. 448

A.) Cross
B.) Angled
C.) Horizontal
*D.) Vertical

90. Where should the ladder be positioned when breaking glass for ventilation? p. 451

A.) Above the window
B.) Downwind side
C.) Below the windowsill
*D.) Upwind side

91. What will probably happen to a roof supported by bar joists before it collapses? p. 466

A.) Crack
B.) Bow-up
C.) Liquefy
*D.) Sag

92. What material is usually used to construct the interior walls and floors of an ordinary construction building? p. 448

A.) Steel
B.) Concrete
C.) Cast iron
*D.) Wood