PRACTICE EXAM 18: FIREFIGHTER I & II SIMULATION (150 QUESTIONS)

1. All of the following are core elements of the fire service mission EXCEPT?

A. Life safety

B. Profit generation through service contracts to property owners

C. Incident stabilization

D. Property conservation

2. Which of the following statements about chain of command in the fire service is TRUE?

A. Authority flows from the fire chief through the command structure to subordinate personnel

B. Each firefighter reports directly to the fire chief regardless of rank

C. Officers report to their subordinates for daily operations and assignments

D. Chain of command applies only during incidents, not during station operations

3. Which of the following statements best describes the principle of unity of command?

A. All personnel must work together as a single coordinated unit

B. Each person reports to only one supervisor at any given time

C. All decisions are made by command staff only without input

D. Unified command requires multiple personnel to share authority equally

4. All of the following are responsibilities of the Firefighter I level EXCEPT?

A. Performing assigned operations under supervision

B. Maintaining equipment in operational readiness condition

C. Conducting fire cause investigation requiring NFPA 1033 certification

D. Following standard operating procedures and safety protocols

5. Which of the following statements about Firefighter II responsibilities is TRUE?

A. Firefighter II personnel always work without any supervision

B. Firefighter II personnel have no additional responsibilities beyond Firefighter I

C. Firefighter II personnel may perform functions with limited supervision and assume initial command duties

D. Firefighter II is only an administrative designation with no operational difference

6. Which of the following statements about firefighter health and wellness is FALSE?

A. Physical fitness requirements decrease as a firefighter ages because of accumulated experience

B. NFPA 1582 establishes medical evaluation standards for firefighters

C. Cardiovascular conditioning supports reduced line-of-duty death risk

D. Annual medical evaluations help identify health risks early

7. Which of the following statements about cardiovascular events and firefighter LODD is TRUE?

A. Cardiovascular events have historically been the leading cause of firefighter line-of-duty deaths

B. Cardiovascular events are rare in firefighter LODD statistics

C. Cardiovascular LODDs occur only in firefighters over age 65

D. Vehicle collisions are the leading cause of firefighter LODD

8. All of the following are recognized firefighter occupational health risks EXCEPT?

A. Cardiovascular disease and acute cardiac events

B. Occupational cancers from carcinogen exposure

C. Reduced lifespan due to firefighting being inherently shorter-lived

D. Behavioral health concerns including PTSD and depression

9. Which of the following statements about firefighter cancer presumption laws is TRUE?

A. These laws apply only to fire chiefs and command staff

B. These laws require firefighters to prove specific occupational exposure

C. These laws have been universally adopted in every U.S. jurisdiction

D. These laws shift the burden of proof regarding work-relatedness of certain cancers

10. Which of the following statements about firefighter rehabilitation at incidents is FALSE?

A. Rehab includes hydration, nutrition, and rest periods

B. Rehab includes medical monitoring of vital signs and symptoms

C. Rehab is required for personnel per NFPA 1584 at significant operations

D. Rehab is only necessary at incidents lasting more than 12 hours

11. All of the following are components of the personnel accountability system EXCEPT?

A. Tracking which personnel are on the fireground at any time

B. Maintaining a public listing of personnel home addresses and contact information

C. Knowing personnel locations and assignments during operations

D. Conducting periodic accountability reports (PAR) during operations

12. Which of the following statements about the two-in/two-out rule is TRUE?

A. The rule requires four personnel inside the structure at all times

B. The rule applies only to commercial structure incidents

C. The rule requires a backup team outside ready to rescue interior personnel in IDLH atmospheres

D. The rule is a departmental recommendation, not a regulatory requirement

13. Which of the following statements about fire-service behavioral health programs is FALSE?

A. Peer support programs provide accessible mental health resources

B. Employee assistance programs (EAP) offer professional counseling services

C. Critical incident stress management addresses traumatic incident exposure

D. Behavioral health resources are limited to officers and command staff

14. All of the following are recognized contributors to firefighter occupational cancer risk EXCEPT?

A. Combustion product exposure during fire suppression operations

B. Use of properly maintained SCBA throughout overhaul operations

C. Skin absorption of carcinogens through contaminated PPE

D. Inadequate decontamination practices historically used in the fire service

15. Which of the following statements about firefighter PPE decontamination is TRUE?

A. Decontamination should be performed only after returning to the station

B. Decontamination is unnecessary for fires that produce minimal smoke

C. Visible contamination is the only indicator that decontamination is needed

D. Gross on-scene decontamination reduces contaminant exposure before equipment handling

16. Which of the following statements about radio communications protocols is TRUE?

A. Personal nicknames should be used to identify radio users on the air

B. Radio messages should include personal commentary for context and clarity

C. Standard terminology and clear, concise messages reduce communication errors

D. Radio communications should be lengthy to provide complete situational context

17. All of the following are components of effective radio communication EXCEPT?

A. Clear, concise message content delivered in standard form

B. Lengthy explanations of background context with each transmission

C. Use of standard terminology and clear-text language

D. Acknowledgment of received transmissions by the receiving party

18. Which of the following best describes the purpose of LUNAR or LIP information in MAYDAY transmissions?

A. To impress superior officers with detailed situational information

B. To provide entertainment value during routine radio operations

C. To provide structured critical information under stress conditions

D. To occupy radio channels during emergency situations

19. Which of the following statements about emergency traffic and MAYDAY procedures is TRUE?

A. MAYDAY should be reserved only for life-threatening situations involving others

B. MAYDAY transmissions can be made on any radio channel without coordination

C. MAYDAY signals a firefighter in immediate distress requiring rescue intervention

D. MAYDAY is identical to "emergency traffic" in meaning and operational use

20. All of the following are typical elements of dispatch information EXCEPT?

A. Location of the incident with address or cross-street reference

B. Type of incident reported by the caller or detection system

C. Resources being dispatched to the incident location

D. Personal contact information of all responding personnel by name

21. Which of the following statements about size-up reports is TRUE?

A. The first-arriving company officer typically provides the initial size-up report describing observed conditions

B. Size-up reports are not needed when dispatch has provided incident information

C. Size-up reports should be deferred until after the fire is extinguished

D. Size-up reports include only the building's street address

22. Which of the following statements about personnel accountability reports (PAR) is FALSE?

A. PAR confirms that all personnel are accounted for at intervals during operations

B. PAR can be requested by command at any time during operations

C. PAR is required after significant events such as collapse or fire growth

D. PAR is conducted only at the conclusion of operations after demobilization

23. Which of the following statements about the fire tetrahedron is TRUE?

A. The four elements are heat, fuel, oxygen, and water

B. The four elements are smoke, flame, heat, and fuel

C. The fourth element added to the fire triangle is pressure

D. The four elements are heat, fuel, oxygen, and the chemical chain reaction

24. All of the following are methods of heat transfer relevant to fire behavior EXCEPT?

A. Conduction through solid materials in contact

B. Convection through fluid movement of hot gases

C. Compression through density changes in heated material

D. Radiation through electromagnetic wave emission

25. Which of the following statements about Type I (fire-resistive) construction is TRUE?

A. Type I construction uses primarily wood-frame structural members

B. Type I construction uses non-combustible structural elements with high fire-resistance ratings

C. Type I construction has no specific fire-resistance requirements

D. Type I construction is found only in residential occupancy structures

26. Which of the following statements about Type V (wood frame) construction is FALSE?

A. Type V construction maintains structural integrity in fire conditions for several hours

B. Type V construction uses combustible structural members throughout

C. Type V is the most common construction type in residential occupancies

D. Type V construction is vulnerable to rapid fire-induced structural failure

27. All of the following are characteristics of lightweight wood construction EXCEPT?

A. Higher surface-to-mass ratio than heavy timber members

B. Engineered components such as truss assemblies and I-joists

C. Superior fire-resistance compared to heavy timber construction

D. Rapid loss of structural integrity under fire exposure

28. Which of the following statements about flashover is TRUE?

A. Flashover indicates the fire has self-extinguished naturally

B. Flashover occurs only in commercial occupancy structures

C. Flashover involves rapid transition to full-room involvement when contents reach ignition temperatures

D. Flashover is a slow, gradual process taking hours to complete

29. Which of the following statements about backdraft is FALSE?

A. Backdraft involves explosive deflagration of accumulated unburned gases

B. Backdraft results from sudden oxygen introduction to oxygen-starved fires

C. Pulsing smoke from openings can be a warning sign of backdraft potential

D. Backdraft poses risk equivalent to ordinary flashover with no additional hazards

30. Which of the following statements about modern residential fire dynamics is TRUE?

A. Synthetic furnishings produce higher heat-release rates, accelerating fire growth to flashover

B. Modern residential fires develop more slowly than fires of decades past

C. Synthetic materials produce primarily inert combustion products in fires

D. Modern construction has eliminated fire growth concerns in homes

31. All of the following are stages of fire development EXCEPT?

A. Incipient stage with initial ignition and limited heat

B. Growth stage with increasing heat-release rate

C. Saturation stage with maximum thermal equilibrium

D. Decay stage with declining fire intensity

32. Which of the following statements about ventilation-limited fires is TRUE?

A. Ventilation-limited fires have consumed available oxygen, with unburned products accumulating

B. Ventilation-limited fires burn at peak intensity due to abundant available oxygen

C. Ventilation-limited fires extinguish themselves quickly without intervention

D. Ventilation-limited fires occur only in commercial occupancy structures

33. Which of the following statements about smoke characteristics during fire is FALSE?

A. Thick black turbulent smoke indicates high fuel content and significant heat

B. Smoke characteristics provide tactical intelligence before the fire is visible

C. Smoke pressure at openings reflects internal compartment pressure

D. Smoke color and movement provide no useful operational information

34. All of the following are recognized characteristics of a flow path EXCEPT?

A. Movement of heat and smoke from high to low pressure areas

B. Pathway between inlet and outlet of structure openings

C. Equilibrium condition with no thermal or pressure differential

D. Concentration of fire effects on personnel in the path

35. Which of the following statements about collapse zones is TRUE?

A. The collapse zone is typically 1.5 times the structure height, with adjustments for construction

B. The collapse zone is always equal to the structure height regardless of construction type

C. Collapse zones are not necessary for masonry construction in any scenario

D. Collapse zones are necessary only after partial collapse has already begun

36. Which of the following statements about modern fire research findings is FALSE?

A. Transitional attack can improve interior conditions before commitment to interior advance

B. Modern fires reach flashover more rapidly than fires of past decades

C. Coordinated ventilation supports interior attack effectiveness

D. Exterior water application always pushes fire into uninvolved areas

37. Which of the following statements about heavy timber (Type IV) construction is TRUE?

A. Heavy timber construction has greater fire resistance than lightweight wood due to large cross-sections

B. Heavy timber and lightweight wood construction have equivalent fire-resistance ratings

C. Heavy timber construction is no longer permitted in modern building codes

D. Heavy timber construction is the most common type in modern residential buildings

38. Which of the following statements about structural firefighting PPE is TRUE?

A. Structural PPE provides full protection against all chemical exposures

B. Structural PPE eliminates the need for self-contained breathing apparatus

C. Structural PPE provides thermal protection through outer shell, moisture barrier, and thermal liner

D. Structural PPE is functionally the same as wildland firefighting PPE

39. All of the following are components of structural firefighting PPE EXCEPT?

A. Coat and pants with multi-layer construction

B. Helmet with eye protection and ear flaps

C. Encapsulating chemical-resistant suit for typical structural firefighting operations

D. Boots and gloves rated for structural firefighting

40. Which of the following statements about SCBA operation is FALSE?

A. SCBA provides clean breathing air for IDLH atmospheres

B. The face piece must form a seal against the user's face for protection

C. SCBA requires fit testing for each individual user

D. SCBA can be used without training as long as the equipment is functional

41. Which of the following statements about the low-air alarm on SCBA is TRUE?

A. The low-air alarm activates at exactly 50% of cylinder pressure

B. The low-air alarm activates at approximately one-third of cylinder pressure, providing time for retreat

C. The low-air alarm activates only when the cylinder is completely empty

D. The low-air alarm has no specific predetermined activation pressure

42. All of the following are components of SCBA EXCEPT?

A. Compressed air cylinder with pressure indicator

B. Catalytic combustion sensor for atmospheric monitoring of toxic gases

C. Pressure reducer and regulator for breathing

D. Face piece with seal and exhalation valve

43. Which of the following statements about PASS device operation is TRUE?

A. PASS devices are manual-only and require deliberate user activation to signal

B. PASS devices alert only the wearer to a low air supply condition

C. PASS devices are external accessories not part of standard SCBA equipment

D. PASS devices activate automatically after motionlessness and can be manually activated

44. Which of the following statements about SCBA cylinder duration ratings is FALSE?

A. Cylinder duration ratings are based on laboratory work rates, not actual fire-attack consumption

B. Heavy work consumes air at approximately twice the laboratory rate

C. The rated duration represents the maximum duration under specific test conditions

D. The 30-minute rating guarantees 30 minutes of use during interior firefighting operations

45. Which of the following statements about wildland fire PPE is TRUE?

A. Wildland PPE is identical to structural PPE in design and protection

B. Wildland PPE includes full thermal protection equivalent to structural ensembles

C. Wildland PPE protects against radiant heat and embers with less thermal protection than structural PPE

D. Wildland PPE does not include any form of head protection

46. All of the following are functions of the PPE moisture barrier EXCEPT?

A. Preventing water from outside reaching the wearer

B. Allowing perspiration vapor to escape outward

C. Resisting penetration by chemical and biological materials

D. Providing the primary thermal insulation function of the ensemble

47. Which of the following statements about hazardous materials PPE levels (Levels A-D) is TRUE?

A. Level A provides the highest level of skin, respiratory, and eye protection via fully encapsulating suit

B. Level A provides only respiratory protection without skin protection

C. Level A and Level B provide identical protection profiles

D. Level D is appropriate for unknown hazardous atmospheres

48. Which of the following statements about SCBA face piece seal is FALSE?

A. Facial hair beneath the seal can compromise the seal integrity

B. The seal integrity is unaffected by facial hair, eyeglasses, or other interfering items

C. A compromised seal allows contaminated atmosphere to enter the face piece

D. Fit testing verifies the seal integrity under controlled conditions

49. All of the following are reasons to don SCBA during overhaul operations EXCEPT?

A. Elevated carbon monoxide concentrations remaining in the atmosphere

B. Reduced fire department capacity to monitor SCBA use after the active fire is out

C. Hydrogen cyanide and other combustion products remaining in the atmosphere

D. Particulate exposure during debris movement and inspection

50. Which of the following statements about the SCBA cylinder change-out procedure is TRUE?

A. Cylinders should be changed only at the apparatus location

B. Cylinders can be changed during interior operations as needed for continuity

C. The cylinder change requires the user to be in a safe atmosphere with the assistance of another firefighter

D. Cylinder changes can be performed by any person regardless of training or qualification

51. Which of the following statements about SCBA cylinder pressure ratings is FALSE?

A. Cylinders are commonly available in 2,216 psi, 3,000 psi, and 4,500 psi ratings

B. Higher-pressure cylinders provide greater air volume in the same physical size

C. All SCBA cylinders are rated at the same pressure regardless of manufacturer or model

D. Cylinder ratings are stamped on the cylinder for identification

52. All of the following are recognized maintenance requirements for SCBA EXCEPT?

A. Cylinder hydrostatic testing at required intervals

B. Annual replacement of all components regardless of condition

C. Daily and post-use inspection of equipment

D. User-level cleaning and decontamination after exposure

53. Which of the following statements about Class A fires is TRUE?

A. Class A fires involve ordinary combustibles such as wood, paper, and cloth

B. Class A fires involve flammable liquids such as gasoline or diesel

C. Class A fires involve energized electrical equipment

D. Class A fires involve cooking oils and fats in commercial kitchens

54. Which of the following statements about Class K fires is FALSE?

A. Class K fires involve cooking oils and fats in commercial kitchens

B. Class K fires are best suppressed with standard dry chemical extinguishers

C. Wet chemical extinguishers saponify cooking oils to suppress Class K fires

D. Class K fires require specific extinguishing agent due to oil reignition risk

55. Which of the following statements about portable fire extinguisher selection is TRUE?

A. Any extinguisher can be used on any fire class without restriction

B. The extinguisher must be matched to the fire class to be safe and effective

C. Larger extinguishers are more effective than smaller ones in all situations

D. Extinguishers are interchangeable based on manufacturer preference

56. All of the following are elements of the PASS technique for extinguisher operation EXCEPT?

A. Pour water on the fire from a safe distance away

B. Aim at the base of the fire where the fuel is burning

C. Squeeze the handle to discharge the extinguishing agent

D. Sweep the agent across the fire in a controlled pattern

57. Which of the following statements about ABC (multipurpose) dry chemical extinguishers is FALSE?

A. The agent is monoammonium phosphate

B. The extinguisher works on Class A, B, and C fires

C. The agent forms a glassy coating on Class A combustibles

D. The extinguisher is the best choice for Class K cooking-oil fires

58. Which of the following statements about the figure-eight on a bight is TRUE?

A. The knot is suitable only for non-load-bearing applications

B. The knot reduces rope strength to less than 50% of original strength

C. The knot is functionally identical to a standard bowline

D. The knot retains high rope strength and is the standard fire service rescue knot

59. All of the following are characteristics of life-safety rope EXCEPT?

A. Static (low-stretch) characteristics for controlled loading

B. Manufactured to NFPA 1983 standards for life-safety applications

C. Use of natural fibers such as manila or sisal for tradition

D. Continuous filament synthetic fibers throughout the rope

60. Which of the following statements about rope inspection is TRUE?

A. Visual inspection alone is sufficient without manual examination

B. Rope inspection includes visual inspection and tactile examination of the entire length

C. Inspection is required only after the rope has been used in rescue operations

D. Inspection is required only every five years regardless of use

61. Which of the following statements about the bowline knot is FALSE?

A. The bowline forms a fixed loop at the end of a rope

B. The bowline is the preferred life-safety rescue knot in modern fire service applications

C. The bowline can come loose under cyclical loading without a safety knot

D. The bowline is taught as a traditional firefighter knot in skill training

62. All of the following are common rope hitches used in the fire service EXCEPT?

A. Clove hitch used for attachment to objects

B. Half-hitch used as a finishing element

C. Becket bend used for combined attachment

D. Sheet bend used to join two ropes of different diameters

63. Which of the following statements about life-safety rope retirement criteria is TRUE?

A. Rope should be retired only when visibly damaged with obvious defects

B. Rope should be retired only after rescue use under load

C. Rope should be retired based on its color and decorative appearance

D. Rope should be retired based on use history, condition, exposure, and manufacturer guidelines

64. Which of the following statements about forcible entry is TRUE?

A. Forcible entry should always be performed with maximum damage to the structure

B. Forcible entry should achieve operational access with the least damage practical

C. Forcible entry is the responsibility of the property owner during a fire incident

D. Forcible entry is performed only after the fire has been fully extinguished

65. All of the following are common forcible entry tools EXCEPT?

A. Halligan tool for prying and pulling operations

B. Flat-head axe for striking and combined operations

C. Hydraulic spreader for forcing larger doors and locks

D. Hose roller for protecting hose at edges and corners

66. Which of the following statements about the irons combination is TRUE?

A. The irons combine the Halligan and flat-head axe for prying, pulling, and striking capability

B. The irons consist of two Halligans of different sizes used together

C. The irons combine the chainsaw and the K-12 rotary saw for cutting

D. The irons are used only for ventilation operations on roofs

67. Which of the following statements about through-the-lock entry is FALSE?

A. The technique exploits the lock mechanism specifically rather than the door

B. The technique always produces greater damage than conventional forcing methods

C. The technique may be faster on doors with multiple locks

D. The technique requires specialized tools and training

68. All of the following are recognized methods of forcible entry EXCEPT?

A. Conventional forcing with halligan and axe combination

B. Through-the-lock entry using specialized tools

C. Smashing through walls as the standard approach for residential entry

D. Hydraulic forcing with rabbit tool or similar equipment

69. Which of the following statements about door size-up before forcible entry is TRUE?

A. Door size-up is unnecessary for residential single-family doors

B. Size-up is performed only after forcing has been attempted

C. Size-up is the same for all door types and locking configurations

D. Size-up identifies door type, locking mechanisms, and direction of opening to inform tool selection

70. Which of the following statements about lock identification is FALSE?

A. Cylindrical locks have the locking mechanism within the knob assembly

B. Mortise locks and rim locks are identical in design and operation

C. Deadbolts add security through a fixed bolt extending into the frame

D. Identifying the lock type informs the appropriate forcing technique selection

71. All of the following are considerations during forcible entry EXCEPT?

A. Maximizing damage to facilitate later property investigation

B. Personnel safety during the forcing operation

C. Minimizing structural damage where practical to do so

D. Tool selection appropriate to the door and lock encountered

72. Which of the following statements about ground ladder placement angle is TRUE?

A. The optimal angle is approximately 60 degrees from horizontal

B. The optimal angle is approximately 45 degrees from horizontal

C. The placement angle does not affect operational safety on stable ground

D. The optimal angle is approximately 75 degrees with butt placement at one-quarter the working length

73. Which of the following statements about ladder selection for window rescue is FALSE?

A. Any ladder can be used regardless of length, type, or condition

B. The ladder must reach the window with appropriate tip placement

C. The ladder must be rated for the operational load including rescuer and victim

D. The ladder must allow the rescuer and victim to traverse safely

74. All of the following are common types of ground ladders EXCEPT?

A. Single (straight) ladders for direct reach applications

B. Extension ladders with multiple sections for variable reach

C. Aerial ladders permanently mounted on apparatus turntables

D. Roof ladders with folding hooks for pitched roof operations

75. Which of the following statements about roof ladders is TRUE?

A. Roof ladders are single ladders without distinguishing structural features

B. Roof ladders are permanently mounted on the apparatus for response

C. Roof ladders have folding hooks at the tip that engage the ridge for stability

D. Roof ladders are used only for residential single-family applications

76. Which of the following statements about ladder inspection per NFPA 1932 is FALSE?

A. Ladders should be inspected after each use for damage and wear

B. Annual inspection is the maximum inspection frequency required by the standard

C. Annual service tests verify the ladder's load-carrying capability under standard conditions

D. Service tests follow specific NFPA procedures for documentation and recordkeeping

77. All of the following are recognized ladder carries and raises EXCEPT?

A. Two-firefighter beam raise for medium-length extension ladders

B. Single-firefighter horizontal carry over the shoulder for a 35-foot extension ladder

C. Two-firefighter flat raise from horizontal position

D. Three- and four-firefighter raises for longer extension ladders

78. Which of the following statements about climbing technique on ground ladders is TRUE?

A. The climber should maintain three points of contact with the ladder at all times

B. The climber should grip only the rungs and never the beams during climbing

C. The climber should ascend at maximum speed for operational efficiency

D. The climber should face away from the ladder for improved visibility

79. Which of the following statements about ladder placement near doors and windows is FALSE?

A. Ladders should be placed directly in front of doors to provide direct egress for victims

B. Ladders placed at windows should have the tip at sill level or slightly below for victim egress

C. Ladder placement should consider the rescue path of any potential victims

D. Ladder placement should allow the climber to step off safely at the destination

80. Which of the following statements about vertical ventilation is TRUE?

A. Vertical ventilation releases heat and smoke through openings in interior walls

B. Vertical ventilation is performed only after fire extinguishment is complete

C. Vertical ventilation is generally less effective than horizontal ventilation for heat removal

D. Vertical ventilation releases superheated gases at the highest point, working with natural buoyancy

81. Which of the following statements about horizontal ventilation is FALSE?

A. Horizontal ventilation uses windows and doors as inlets and outlets for airflow

B. Horizontal ventilation works with the wind direction when possible for effectiveness

C. Horizontal ventilation is always preferable to vertical ventilation regardless of conditions

D. Horizontal ventilation must be coordinated with fire attack operations

82. All of the following are characteristics of positive-pressure ventilation (PPV) EXCEPT?

A. Fan-driven airflow forced into the structure under pressure

B. Effectiveness requires no specific exhaust opening downstream

C. Displacement of smoke through an established exhaust opening

D. Required coordination with attack operations for safety

83. Which of the following statements about negative-pressure ventilation is TRUE?

A. Negative-pressure ventilation forces air into the structure under pressure

B. Negative-pressure ventilation draws air out with smoke-ejector fans positioned at openings

C. Negative-pressure ventilation is functionally identical to positive-pressure ventilation

D. Negative-pressure ventilation is used only in commercial occupancy structures

84. Which of the following statements about vertical ventilation operations on pitched roofs is FALSE?

A. A sounded path should be followed to the cut location for safety

B. The operator should be belayed or supported by a roof ladder for stability

C. The cut should be made directly over the structural members for support

D. The cut should be located over the fire to release heat and smoke

85. All of the following are considerations for ventilation timing EXCEPT?

A. Coordination with attack crews for operational sequencing

B. Wind direction and intensity affecting smoke movement

C. Fire conditions and stage of fire development

D. The operator's personal preference independent of operational considerations

86. Which of the following statements about hydraulic ventilation is TRUE?

A. Hydraulic ventilation uses smoke-ejector fans for airflow

B. Hydraulic ventilation is performed only before fire attack begins

C. Hydraulic ventilation is more effective than mechanical PPV in all situations

D. Hydraulic ventilation uses a fog stream directed out of an opening to entrain and remove smoke

87. Which of the following statements about supply hose is TRUE?

A. Supply hose and attack hose are functionally identical types

B. Supply hose is designed for use only at very high pressures

C. Supply hose carries water from source to pump in larger diameters (2½, 3, 4, or 5 inches)

D. Supply hose is no longer used in modern fire service operations

88. Which of the following statements about attack hose is FALSE?

A. Attack hose typically carries water from the hydrant to the pump

B. Attack hose typically operates at higher pressures than supply hose

C. Attack hose is commonly available in 1½, 1¾, and 2½ inch diameters

D. Attack hose connects the pump to the nozzle for fire suppression

89. All of the following are recognized hose loads EXCEPT?

A. Spiral load specifically designed for high-rise vertical transport applications

B. Accordion load for standard supply or attack hose configurations

C. Horseshoe load for compact storage and deployment

D. Flat load for straightforward storage and deployment

90. Which of the following statements about hydrant operation is TRUE?

A. Hydrants should be opened fully in one rapid motion for maximum flow immediately

B. Hydrants should be opened slowly to prevent water hammer and damage to the system

C. Hydrants should be operated only with the wrench provided by the property owner

D. Hydrants should not be operated by fire department personnel under any circumstance

91. Which of the following statements about static water sources for drafting is FALSE?

A. Sources include ponds, lakes, rivers, and swimming pools

B. Static sources provide unlimited water with no depth or accessibility requirements

C. Drafting from static sources requires adequate water depth and accessibility

D. Drafting requires the use of suction hose with strainer for debris protection

92. All of the following are factors affecting hose friction loss EXCEPT?

A. Hose diameter (smaller diameter produces greater friction loss)

B. Flow rate in gallons per minute through the hose

C. Color of the hose exterior covering

D. Total length of the hose lay from pump to nozzle

93. Which of the following statements about nozzle pressure for smooth-bore handlines is TRUE?

A. Smooth-bore handlines operate at 100 psi nozzle pressure

B. Smooth-bore handlines operate at 50 psi nozzle pressure

C. Smooth-bore handlines operate at 250 psi nozzle pressure

D. Smooth-bore handlines have no specific operating pressure requirement

94. Which of the following statements about combination nozzle operating pressure is FALSE?

A. Combination nozzles typically operate at 100 psi nozzle pressure

B. Combination nozzles typically operate at 50 psi nozzle pressure, the same as smooth-bore

C. Lower-pressure combination nozzles are available at 75 psi for some applications

D. Combination nozzles use higher pressure to atomize water through internal baffles

95. Which of the following statements about pump operations is TRUE?

A. The pump operator is responsible for water supply, pump operation, and hose-line pressure delivery

B. The pump operator's only role is starting and stopping the pump engine

C. The pump operator does not communicate with attack crews during operations

D. The pump operator is responsible for making fire attack decisions

96. All of the following are nozzle types used in the fire service EXCEPT?

A. Smooth-bore (solid stream) nozzles for direct application

B. Vortex nozzle commonly used in modern attack operations

C. Combination (fog) nozzles for variable pattern selection

D. Master stream nozzles for high-volume defensive operations

97. Which of the following statements about master streams is FALSE?

A. Master streams typically flow 350 gpm or more in operation

B. Master streams are used for large fires and defensive operations

C. Master streams can be operated by a single firefighter manually for any duration

D. Master streams require deck guns, monitors, or other appliances for stable operation

98. Which of the following statements about Class A foam is TRUE?

A. Class A foam contains a surfactant that reduces water surface tension, improving fuel penetration

B. Class A foam is designed primarily for hydrocarbon liquid fuel fires

C. Class A foam is functionally identical to aqueous film-forming foam (AFFF)

D. Class A foam is used only for Class K cooking oil and fat fires

99. Which of the following statements about AFFF (aqueous film-forming foam) is FALSE?

A. AFFF is designed for hydrocarbon liquid fires

B. AFFF forms an aqueous film on the fuel surface that suppresses vapor production

C. AFFF is effective on polar solvents without any special formulation

D. AFFF contains fluorosurfactants that produce the film-forming property

100. All of the following are common foam proportioning rates EXCEPT?

A. 1% proportioning for high-concentration foams

B. 3% proportioning for many hydrocarbon-fire foam applications

C. 6% proportioning for many polar-solvent-capable foam applications

D. 25% proportioning for standard fire-service foam applications

101. Which of the following statements about foam application is TRUE?

A. Foam should be applied directly into the burning fuel for maximum effect

B. Foam should be applied gently to allow the foam blanket to form across the fuel surface

C. Foam should be applied as a high-velocity stream for maximum penetration

D. Foam application technique does not significantly affect operational effectiveness

102. Which of the following statements about pump cavitation is FALSE?

A. Cavitation occurs when the pump demands more water than the supply can provide

B. Cavitation produces a characteristic knocking sound from the pump

C. Cavitation is harmless to pump components and does not damage the pump

D. Cavitation requires throttle reduction or other corrective action by the operator

103. Which of the following statements about high-rise operations is TRUE?

A. Operations must account for elevation pressure loss (approximately 0.434 psi per foot of elevation)

B. Elevation pressure loss is negligible for buildings under 30 stories tall

C. Pump operations at high-rises do not differ from typical residential operations

D. Elevation pressure gain at altitude assists the pump operator at upper floors

104. All of the following are typical components of high-rise standpipe operations EXCEPT?

A. Direct attachment of attack lines to the apparatus pump at ground level for upper floor delivery

B. Use of high-rise hose packs configured for stairway transport

C. Standpipe outlets on the floor below the fire for attack staging

D. Coordination with building fire pump where the structure is equipped with one

105. Which of the following statements about Class I standpipe systems is TRUE?

A. Class I systems have only 1½-inch outlets sized for occupant use

B. Class I systems are designed for occupant use only without fire department connection

C. Class I systems are not connected to any reliable water supply

D. Class I systems have 2½-inch outlets for fire department use with adequate flow for trained personnel

106. Which of the following statements about Class III standpipe systems is FALSE?

A. Class III systems combine 1½-inch and 2½-inch outlets for combined use

B. Class III systems serve both occupant and fire department use scenarios

C. Class III systems require fire department connections for supplemental supply

D. Class III systems are equivalent to Class I systems with no additional features or capabilities

107. Which of the following statements about direct attack with water is TRUE?

A. Direct attack applies water directly to the fuel surface to cool it below ignition temperature

B. Direct attack targets the smoke layer for cooling rather than the fuel

C. Direct attack is used only for incipient-stage fires in small compartments

D. Direct attack is functionally the same as transitional attack in technique

108. All of the following are recognized methods of fire attack EXCEPT?

A. Internal attack conducted from the safety of the apparatus exterior

B. Direct attack on the seat of the fire from inside the structure

C. Indirect attack using fog stream to disrupt the thermal layer

D. Transitional attack with brief exterior application followed by interior advance

109. Which of the following statements about indirect attack is FALSE?

A. Indirect attack uses a fog stream to disrupt the thermal layer

B. Indirect attack produces steam expansion that absorbs heat from the compartment

C. Indirect attack is appropriate when direct application is not safe for crews

D. Indirect attack should be used as the routine fire-attack method in residential structure fires

110. Which of the following statements about transitional attack is TRUE?

A. Transitional attack involves only interior operations from the moment of arrival

B. Transitional attack is functionally identical to defensive attack

C. Transitional attack uses brief exterior application to reset interior conditions before interior entry

D. Transitional attack must be used at every working fire regardless of conditions

111. All of the following are considerations for defensive operations EXCEPT?

A. Structural collapse risk to firefighting personnel

B. Fire conditions beyond interior attack capability and crew safety

C. Aggressive interior approach without regard for risk or operational safety

D. Exposure protection for adjacent structures and properties

112. Which of the following statements about the risk management principle in fire operations is FALSE?

A. Significant risk for civilian life safety with calculated tactical approach

B. Limited risk for property of value with calculated tactical approach

C. No risk for property without civilian life safety and no salvage value

D. Maximum risk in all situations regardless of saveable life or property considerations

113. Which of the following statements about the fire chief's role in operations is TRUE?

A. The fire chief is always the on-scene incident commander at every incident

B. The fire chief establishes department policy, training, and overall organizational direction

C. The fire chief operates as the nozzle person at fires for hands-on experience

D. The fire chief has no role in fire department operations beyond administration

114. All of the following are components of Incident Command System (ICS) EXCEPT?

A. Single point of authority (single command or unified command structure)

B. Hierarchical structure with clear lines of authority and accountability

C. Independent decision-making by each responding unit without coordination

D. Modular expansion as incident demands increase in scope

115. Which of the following statements about unified command is TRUE?

A. Unified command is used when only one agency is involved in the incident

B. Unified command is used when multiple agencies or jurisdictions have shared authority

C. Unified command eliminates the need for any single commander on scene

D. Unified command applies only to law enforcement incidents and operations

116. Which of the following statements about ICS sections is FALSE?

A. The Operations Section directs tactical operations at the incident

B. The Planning Section develops the Incident Action Plan and tracks resources

C. The Logistics Section provides resources and support to the operation

D. The Finance Section directs tactical fire suppression operations on the fireground

117. All of the following are recognized fireground assignments EXCEPT?

A. Attack team for direct fire suppression operations

B. Search and rescue team for victim location and removal

C. Ventilation team for heat and smoke removal operations

D. Fire prevention inspection during the active incident for code compliance

118. Which of the following statements about pre-incident planning is TRUE?

A. Pre-incident planning is conducted during the active incident response

B. Pre-incident planning is conducted during quiet times to gather information for use during incidents

C. Pre-incident planning is the responsibility of the property owner only

D. Pre-incident planning has no measurable operational benefit during actual incidents

119. Which of the following statements about primary search is TRUE?

A. Primary search is performed only after fire extinguishment is complete

B. Primary search is the rapid initial search to locate viable victims during firefighting

C. Primary search and secondary search are functionally identical in approach

D. Primary search is conducted only by the fire investigator after the incident

120. Which of the following statements about secondary search is FALSE?

A. Secondary search is performed before fire control is established

B. Secondary search is conducted after the initial search and fire control

C. Secondary search is more thorough than primary search

D. Secondary search is conducted by personnel different from those conducting primary search when possible

121. All of the following are search techniques EXCEPT?

A. Wide-perimeter sweep with no reference point or directional anchor

B. Right-hand or left-hand wall search for systematic coverage

C. Oriented search with rope or hose line reference for direction

D. VES (vent, enter, isolate, search) for specific victim locations

122. Which of the following statements about VES (vent, enter, isolate, search) is TRUE?

A. VES is used as a general primary-search technique throughout the structure

B. VES eliminates the need for fire attack operations

C. VES is performed only by the truck company chief

D. VES allows direct access to specific likely-victim locations via exterior ladder, with isolation by closing the door

123. Which of the following statements about firefighter self-survival skills is FALSE?

A. Self-survival skills are unnecessary for trained firefighters

B. Self-survival includes recognition of changing conditions

C. Self-survival includes MAYDAY procedures and communications

D. Self-survival includes escape and rescue techniques for self-extrication

124. All of the following are recognized firefighter survival principles EXCEPT?

A. Continuing operations regardless of changing conditions and deterioration

B. Recognizing situational deterioration before it becomes catastrophic

C. Activating PASS device when in distress to signal others

D. Calling MAYDAY when necessary to summon rescue assistance

125. Which of the following statements about Rapid Intervention Crews (RIC) is TRUE?

A. RIC personnel perform fire attack as a secondary role at the incident

B. RIC is functionally the same as the attack team in operation

C. RIC is needed only at large incidents with multiple structures

D. RIC is staged for immediate response to firefighter MAYDAY situations

126. Which of the following statements about LUNAR or LIP information in MAYDAY transmissions is FALSE?

A. LUNAR provides Location, Unit, Name, Air, and Resources information

B. LIP provides Location, Identification, and Problem information

C. Structured information formats ensure consistent critical information transmission

D. The format is identical across all jurisdictions with no variations permitted anywhere

127. All of the following are recognized firefighter rescue techniques EXCEPT?

A. Single-handed manual lift of a fully-equipped firefighter to standing position

B. Drag techniques for unconscious firefighter to safer location

C. RIC-assisted SCBA conversion for emergency air sharing

D. Webbing or rope-assisted drag techniques for victim movement

128. Which of the following statements about the survivability window for trapped occupants is TRUE?

A. The window is limited by fire conditions; rapid search maximizes the chance of locating viable victims

B. The window is unlimited regardless of fire conditions affecting the victim

C. The window does not affect search priorities or timing

D. The window applies only to occupants who are conscious at the time

129. Which of the following statements about salvage operations is TRUE?

A. Salvage operations are performed only after the property is fully restored

B. Salvage operations are the responsibility of the property owner only

C. Salvage operations protect property contents from secondary damage during firefighting operations

D. Salvage operations have been replaced by overhaul operations in modern firefighting

130. Which of the following statements about overhaul operations is FALSE?

A. Overhaul ensures the fire is fully extinguished including hidden extension

B. Overhaul searches for hidden fire and fire extension into voids

C. Overhaul does not require SCBA protection because the active fire is out

D. Overhaul preserves the area of origin for the investigator when possible

131. All of the following are recognized salvage techniques EXCEPT?

A. Salvage covers (tarps) placed over contents for protection

B. Floor runners to channel water flow away from contents

C. Removal of high-value contents before water damage exposure

D. Burning of damaged contents on-scene to reduce overhaul time and effort

132. Which of the following statements about loss control during fire operations is TRUE?

A. Loss control is a post-incident activity only after extinguishment

B. Loss control conflicts with fire suppression and should be deferred

C. Loss control is the responsibility of the insurance adjuster on scene

D. Loss control integrates with fire suppression to reduce overall damage and improve property outcomes

133. Which of the following statements about salvage cover placement is FALSE?

A. Salvage covers should be pre-positioned where practical before water application

B. Salvage covers protect contents from cumulative water exposure during operations

C. Salvage covers must be installed only after all fire activity has fully ended

D. Salvage covers should be sized appropriately for the contents being protected

134. All of the following are recognized overhaul considerations EXCEPT?

A. Atmospheric monitoring for carbon monoxide and other combustion products

B. Use of natural light without artificial illumination for cost savings reasons

C. Preservation of evidence in the area of origin for investigator examination

D. SCBA discipline during overhaul to protect against combustion products

135. Which of the following statements about smoke detectors is TRUE?

A. Photoelectric detectors are more responsive to smoldering fires; ionization detectors to flaming fires

B. Photoelectric and ionization detectors are functionally identical in response

C. Photoelectric detectors respond best to flaming fires; ionization detectors to smoldering fires

D. Smoke detector technology selection does not affect performance characteristics

136. Which of the following statements about residential sprinkler systems is FALSE?

A. Residential sprinklers control fires at the head closest to the fire

B. Most sprinkler-controlled fires involve only 1-3 heads in operation

C. Residential sprinklers reduce fire fatalities only when combined with smoke alarms

D. Sprinklers are typically activated by heat reaching the head's activation temperature

137. All of the following are types of automatic sprinkler systems EXCEPT?

A. Wet-pipe systems with pre-charged water supply

B. Vacuum-charged systems used in modern commercial occupancies

C. Dry-pipe systems with compressed air in lieu of water

D. Pre-action systems with dual activation requirements

138. Which of the following statements about fire alarm systems is TRUE?

A. Fire alarm systems include initiating devices, notification appliances, and control panels

B. Fire alarm systems have no specific component categories or design framework

C. Fire alarm systems include only smoke detectors as the active component

D. Fire alarm systems are not regulated by NFPA standards or codes

139. Which of the following statements about carbon monoxide (CO) detectors is FALSE?

A. CO can be detected by human senses such as smell or taste at toxic concentrations

B. CO is colorless, odorless, and tasteless to humans

C. CO detectors provide warning before CO reaches dangerous occupant exposure levels

D. CO is produced by incomplete combustion of carbon-containing fuels

140. Which of the following statements about hazardous materials levels of response is TRUE?

A. Awareness-level responders are trained for offensive entry into the hazard

B. Operations-level responders are trained for defensive operations around the hazard

C. Technician-level responders perform only awareness-level recognition duties

D. Specialist-level responders are equivalent to Awareness-level responders in capability

141. Which of the following statements about hazardous materials placards is FALSE?

A. Placards display the hazard class and identification number for the material

B. Placards provide first-responder information about the material's hazards

C. Different colors and symbols indicate specific hazard categories visually

D. Placards are required only on rail cars and not on highway transport vehicles

142. All of the following are recognized hazardous materials hot-zone considerations EXCEPT?

A. Unrestricted access to all responders regardless of training or PPE level

B. Full PPE appropriate to the hazard being addressed in the zone

C. Decontamination required for personnel exiting the zone before entering cold zone

D. Limited personnel access to minimize unnecessary exposure to the hazard

143. Which of the following statements about the Emergency Response Guidebook (ERG) is TRUE?

A. The ERG provides first-responder information for hazmat incidents, organized by ID number, chemical name, and hazard class

B. The ERG is intended only for hazmat specialists with advanced training

C. The ERG is no longer used in modern hazmat response operations

D. The ERG provides specific medical treatment instructions for all chemical exposures encountered

144. Which of the following statements about hazmat scene zoning is FALSE?

A. The hot zone contains the actual hazard with direct exposure risk to personnel

B. The cold zone is closer to the immediate hazard than the warm zone

C. The warm zone is the decontamination and limited-access area

D. The cold zone is the safe area for command and support functions

145. Which of the following statements about chemical and physical properties of hazardous materials is TRUE?

A. Vapor density indicates whether a material's vapor will rise or settle relative to air

B. Vapor density is the same value for all hazardous materials encountered

C. Specific gravity has no relevance to hazmat response operations

D. Solubility in water does not affect hazmat operations or strategy

146. Which of the following statements about vehicle extrication is FALSE?

A. Vehicle stabilization precedes patient disentanglement operations

B. Disconnecting the battery reduces airbag deployment risk during operations

C. Hybrid and electric vehicles require no special operational considerations beyond conventional vehicles

D. Modern high-strength steel vehicles may require advanced extrication tools for cutting

147. All of the following are recognized vehicle extrication considerations EXCEPT?

A. Scene safety assessment before approaching the vehicle

B. Rapid extrication of all patients regardless of injury or scene conditions

C. Patient stabilization during the extrication operation

D. Communication with EMS personnel for medical coordination

148. Which of the following statements about hybrid and electric vehicle (EV) operations is TRUE?

A. Hybrid/EV vehicles have high-voltage systems presenting shock and arcing hazards if compromised

B. Hybrid/EV vehicles have lower fire risk than internal combustion vehicles in all scenarios

C. Hybrid/EV vehicles do not require any special extrication considerations beyond standard practices

D. Hybrid/EV battery isolation is functionally the same as conventional vehicle battery isolation

149. Which of the following statements about fire investigation roles is TRUE?

A. The Firefighter II is qualified to determine the cause of all fires independently

B. The Firefighter II provides factual observation contributions to the investigator who has NFPA 1033 qualifications

C. The Firefighter II conducts evidence collection independently for the prosecution

D. The Firefighter II has no role in fire investigation or evidence preservation

150. All of the following are recognized fire-cause classifications EXCEPT?

A. Accidental cause without intent or knowledge of consequences

B. Natural cause from lightning, earthquakes, or similar phenomena

C. Hypothetical cause based on circumstantial reasoning without evidence

D. Incendiary cause involving deliberate ignition with inten

PRACTICE EXAM 18 – ANSWER KEY AND EXPLANATIONS

1. B — Profit generation through service contracts is not a core element of the fire service mission. The three core mission elements are life safety, incident stabilization, and property conservation. The fire service is a public-service function, not a profit-driven enterprise.

2. A — Authority flows from the fire chief through the command structure to subordinate personnel, reflecting the hierarchical organization of the fire service. The chain of command provides clear authority, accountability, and communication pathways. The structure applies during both incidents and station operations.

3. B — Unity of command requires each person to report to only one supervisor at any given time, preventing conflicting orders and accountability confusion. The principle is foundational to ICS and ensures clear lines of authority. Without unity of command, parallel instructions can create dangerous operational confusion.

4. C — Conducting fire cause investigation requires NFPA 1033 certification, which is beyond the Firefighter I level. The Firefighter I performs assigned operations under supervision, maintains equipment, and follows SOPs. Cause determination is the investigator's role, not the FF I's role.

5. C — The Firefighter II level may perform some functions with limited supervision and may assume initial command responsibilities until higher-ranking officers arrive. This is the operational distinction from FF I, who works under direct supervision. The FF II is the operational bridge to officer-level functions.

6. A — Physical fitness requirements do not decrease with age — they remain essential because firefighting demands match the job's physiological requirements, not the firefighter's age or experience. Continued fitness is required throughout the career to support cardiovascular health and operational performance.

7. A — Cardiovascular events have historically been the leading cause of firefighter LODDs, accounting for roughly half of fire-service deaths annually. The acute physiological demands of firefighting combined with predisposing cardiovascular conditions drive this leading-cause status.

8. C — Reduced lifespan due to firefighting being inherently shorter-lived is not an established occupational risk. The recognized risks include cardiovascular disease, occupational cancer, and behavioral health concerns, addressed through prevention programs. Lifespan reduction is not a categorical occupational outcome.

9. D — Cancer presumption laws shift the burden of proof regarding the work-relatedness of certain cancers in firefighters, supporting workers' compensation access. The laws recognize the elevated cancer risk in the firefighter population and the difficulty of proving specific occupational exposure for multi-factorial cancers.

10. D — Rehabilitation is required at significant incidents per NFPA 1584, not only at extended operations over 12 hours. Rehab applies whenever crews show signs of fatigue, dehydration, or environmental stress, regardless of incident duration.

11. B — Maintaining a public listing of personnel home addresses is not part of personnel accountability. Accountability tracks personnel on the fireground, their locations and assignments, and uses periodic PAR. Personal information confidentiality is separate from operational accountability.

12. C — The two-in/two-out rule requires a backup team outside ready to rescue interior personnel operating in IDLH atmospheres. The OSHA-codified rule addresses the inherent risk of IDLH operations by ensuring backup capability for interior firefighter rescue.

13. D — Behavioral health resources are not limited to officers and command staff; they are available throughout the department to address occupational mental-health needs across all ranks. The cultural shift toward open access supports identification and treatment for all personnel.

14. B — Use of properly maintained SCBA throughout overhaul does not contribute to cancer risk — it actively reduces inhalation exposure. The recognized contributors are combustion product exposure, skin absorption through contaminated PPE, and inadequate decontamination practices.

15. D — Gross on-scene decontamination reduces contaminant exposure before equipment handling, with rinse and brush-down of major particulate contamination performed at the incident scene. Early decontamination minimizes skin absorption, off-gassing, and contamination of personnel and apparatus.

16. C — Standard terminology and clear, concise messages reduce communication errors and support effective fireground operations. Plain text and standard terminology ensure that messages are correctly understood under operational stress and across different units and jurisdictions.

17. B — Lengthy explanations of background context are not part of effective radio communication; they consume air time and dilute critical information. Effective radio communication uses clear, concise, standard-terminology messages with acknowledgment of receipt.

18. C — LUNAR or LIP information provides structured critical information under stress conditions, ensuring essential details are transmitted in a consistent order when free-form communication would likely omit important information. The structured format compensates for stress-induced communication degradation.

19. C — MAYDAY signals a firefighter in immediate distress requiring rescue intervention, prompting an immediate operational response including RIC deployment. The signal is reserved for true emergency situations to maintain the response priority it requires.

20. D — Personal contact information of all responding personnel is not a typical dispatch element. Standard dispatch information includes the incident location, type, and resources being dispatched. Personnel personal information is not transmitted via dispatch.

21. A — The first-arriving company officer typically provides the initial size-up report describing observed conditions, building information, and initial operational decisions. The size-up establishes the operational situation for incoming units and command.

22. D — PAR is not conducted only at the conclusion of operations; it is conducted at regular intervals throughout operations and after significant events such as collapse, fire growth, or unaccounted-for personnel. Continuous accountability is the operational principle.

23. D — The fire tetrahedron is heat, fuel, oxygen, and the chemical chain reaction. The chemical chain reaction (involving free radicals) was added to the three-element fire triangle to explain why dry chemical agents extinguish fire by interrupting the chain reaction at the molecular level.

24. C — Compression through density changes is not a method of heat transfer. The three recognized methods are conduction (through solids), convection (through fluids), and radiation (through electromagnetic waves). Compression is a mechanical process, not a heat-transfer mechanism.

25. B — Type I (fire-resistive) construction uses non-combustible structural elements with high fire-resistance ratings, typically 2 to 4 hours. The design provides sustained structural integrity under fire exposure, supporting interior firefighting operations.

26. A — Type V (wood frame) construction does not maintain structural integrity in fire conditions for several hours; it is vulnerable to fire-induced structural failure as the combustible structural members char and lose strength. Type V is the most common residential type but is the most vulnerable to fire damage.

27. C — Lightweight wood construction does not have superior fire resistance compared to heavy timber; the high surface-to-mass ratio of engineered components leads to rapid loss of structural integrity under fire exposure. Heavy timber outperforms lightweight wood under fire conditions.

28. C — Flashover involves rapid transition to full-room involvement when room contents reach their ignition temperatures, with all combustibles igniting nearly simultaneously. The transition produces life-threatening conditions in seconds, eliminating any survival window for interior personnel without immediate protection.

29. D — Backdraft does not pose risk equivalent to ordinary flashover; the explosive deflagration of accumulated unburned gases produces overpressure that creates additional kinetic hazards beyond the thermal hazards of flashover. The pressure wave can blow through firefighter positions and structural elements.

30. A — Synthetic furnishings produce higher heat-release rates than natural materials, accelerating modern residential fire growth to flashover. Modern homes can reach flashover in 3-5 minutes versus 15-20 minutes for legacy furnishings, dramatically reducing the survival window.

31. C — Saturation stage is not a recognized fire stage. The four recognized stages are incipient, growth, fully developed, and decay. The progression reflects the fire's development from initial ignition through peak intensity to declining activity.

32. A — Ventilation-limited fires have consumed available oxygen, with unburned combustion products accumulating in the smoke. Sudden introduction of oxygen can produce ventilation-induced flashover or backdraft, making these fires particularly dangerous during ventilation operations.

33. D — Smoke color and movement provide significant useful operational information; smoke characteristics indicate fuel type, combustion completeness, ventilation status, and potential for backdraft or flashover. Reading smoke is a recognized tactical assessment skill.

34. C — Equilibrium with no thermal or pressure differential is not a flow path characteristic; flow paths require a pressure differential to drive movement. Flow paths involve heat and smoke moving from high to low pressure through structure openings, concentrating fire effects.

35. A — The collapse zone is typically 1.5 times the structure height, with adjustments for construction type, lean direction, and wind. The geometric ratio addresses typical collapse fall patterns and provides safety distance for personnel and apparatus.

36. D — Modern fire research has overturned the older belief that exterior water application pushes fire into uninvolved areas; research demonstrates that exterior application reduces heat-release rates and cools gas layers without forcing fire spread. Transitional attack is now an accepted modern technique.

37. A — Heavy timber (Type IV) construction has greater fire resistance than lightweight wood due to the large cross-section structural members that char slowly while maintaining load-bearing capacity. The char layer insulates the unburned wood within, preserving structural function.

38. C — Structural firefighting PPE provides thermal protection through three layers: outer shell (abrasion/cut resistance), moisture barrier (water/vapor protection), and thermal liner (heat insulation). The layered design addresses the multiple hazards of structural firefighting.

39. C — An encapsulating chemical-resistant suit is not part of typical structural PPE; it is hazardous materials Level A equipment. Structural PPE includes coat, pants, helmet, boots, gloves, and hood, plus SCBA — designed for fire conditions, not chemical exposure.

40. D — SCBA cannot be used without training, even if the equipment is functional; users require training in donning, doffing, operation, emergency procedures, and inspection. Improper use can compromise the seal, deplete air prematurely, or result in equipment failure during operations.

41. B — The low-air alarm activates at approximately one-third of cylinder pressure, providing the firefighter time to retreat to a safe atmosphere. The 1,500 psi threshold on a 4,500 psi cylinder gives sufficient reserve for evacuation under typical conditions.

42. B — A catalytic combustion sensor for atmospheric monitoring is not a SCBA component; SCBA provides breathing air but does not monitor the surrounding atmosphere. Atmospheric monitoring requires separate dedicated instruments such as multi-gas monitors.

43. D — PASS devices activate automatically after a period of motionlessness and can also be manually activated, alerting other personnel of a possibly incapacitated or trapped firefighter. The motion-trigger addresses scenarios where a firefighter cannot signal manually.

44. D — The 30-minute cylinder rating does not guarantee 30 minutes of use during interior firefighting; the laboratory-derived rating reflects a controlled work rate, while actual heavy work consumes air at approximately twice the laboratory rate, often reducing usable duration to 15-20 minutes.

45. C — Wildland PPE is designed for protection against radiant heat and ember exposure but provides less thermal protection than structural PPE. The lighter weight and breathability support extended wildland operations where exposure intensity is generally lower than interior structural fire.

46. D — The primary thermal insulation function is provided by the thermal liner, not the moisture barrier. The moisture barrier prevents water/vapor penetration while allowing perspiration vapor to escape, but heat insulation is the thermal liner's specific role.

47. A — Level A provides the highest level of skin, respiratory, and eye protection through a fully encapsulating chemical-resistant suit with SCBA and gas-tight seams. The level is reserved for unknown atmospheres or high-concentration hazardous materials with skin-contact hazards.

48. B — The face piece seal integrity is significantly affected by facial hair, eyeglasses, and other interfering items beneath the seal; compromised seals allow contaminated atmosphere to enter the face piece. The seal-protected respiratory zone is the SCBA's protection function.

49. B — Reduced fire department capacity to monitor SCBA use after the active fire is not a reason to don SCBA during overhaul. The recognized reasons are continued elevated carbon monoxide, hydrogen cyanide and other combustion products, and particulate exposure during debris movement.

50. C — The cylinder change requires the user to be in a safe atmosphere with the assistance of another firefighter. The user moves to a non-IDLH location, removes the cylinder safely, and the partner supports the swap. The procedure is not performed in an active operational atmosphere.

51. C — Not all SCBA cylinders are rated at the same pressure; common ratings include 2,216 psi, 3,000 psi, and 4,500 psi, with higher-pressure cylinders providing greater air volume in the same physical size. The cylinder rating is stamped on the cylinder for identification.

52. B — Annual replacement of all SCBA components regardless of condition is not a recognized maintenance requirement; components are replaced based on inspection, testing, and manufacturer guidelines. Hydrostatic testing of cylinders, daily inspection, and user-level cleaning are recognized requirements.

53. A — Class A fires involve ordinary combustibles such as wood, paper, cloth, rubber, and many plastics. The classification drives the appropriate extinguishing agent selection — water and Class A-compatible agents are effective on these fuels.

54. B — Class K fires are not best suppressed with standard dry chemical extinguishers; standard dry chemicals do not saponify cooking oils and fats, leaving them capable of reignition. Class K wet chemical extinguishers are specifically designed for cooking-oil and fat fires.

55. B — The extinguisher must be matched to the fire class to be safe and effective; using the wrong extinguisher can be ineffective (e.g., water on a Class K fire) or dangerous (e.g., water on energized electrical equipment). Class-matched selection is the fundamental principle.

56. A — Pouring water on the fire is not an element of the PASS technique for extinguisher operation. The PASS technique is Pull (the pin), Aim (at the base), Squeeze (the handle), and Sweep (across the fire). The mnemonic captures the four steps in order.

57. D — The ABC multipurpose extinguisher is not the best choice for Class K cooking-oil fires; the monoammonium phosphate agent does not saponify cooking oils and can react with hot oils. Class K wet chemical extinguishers are designed for cooking-oil fires.

58. D — The figure-eight retains a high percentage of rope strength (approximately 75-80%) and is the standard rescue knot for life-safety applications. The knot is easy to inspect visually and reliably forms under load, making it the preferred fire-service rescue knot.

59. C — Natural fibers such as manila or sisal are not characteristics of life-safety rope; NFPA 1983 requires synthetic continuous filament fibers for life-safety applications. Natural fibers have inadequate strength, durability, and resistance to environmental degradation.

60. B — Rope inspection includes both visual examination and tactile examination of the entire length, with the user feeling for inconsistencies, soft spots, or internal damage not visible from the exterior. Both methods together provide thorough inspection coverage.

61. B — The bowline is not the preferred life-safety rescue knot in modern fire service applications; the figure-eight on a bight has replaced it for rescue use due to greater retained rope strength, easier inspection, and more reliable performance under load.

62. D — The sheet bend is a bend, not a hitch — it joins two ropes of different diameters, while hitches attach a rope to an object. The clove hitch, half-hitch, and becket bend (also a bend, technically misnamed) are different from the sheet bend in fundamental function.

63. D — Rope retirement is based on use history, condition, exposure, and manufacturer guidelines — a comprehensive evaluation rather than a single criterion. Documented use history, physical condition, environmental exposure, and manufacturer-specified retirement criteria together inform the retirement decision.

64. B — Forcible entry should achieve operational access with the least damage practical. Unnecessary damage adds repair costs and operational risk; the principle is to use the minimum force needed while still gaining timely access for the operational requirement.

65. D — The hose roller is a hose deployment tool used to protect hose at building edges and corners, not a forcible entry tool. Standard forcible entry tools include the Halligan, axe (for striking), hydraulic spreader, and specialized through-the-lock tools.

66. A — The irons combination pairs the Halligan and flat-head axe, providing prying, pulling, and striking capability for most door-forcing scenarios. The complementary tool functions give the irons combination its operational versatility for residential and commercial forcing.

67. B — Through-the-lock entry does not always produce greater damage than conventional forcing; it specifically exploits the lock mechanism with often less damage to the door and frame, particularly on doors with multiple locks. The technique trades different damage patterns for the conventional approach.

68. C — Smashing through walls is not the standard approach for residential forcible entry; the standard is to defeat the door or lock mechanism using the irons or specialized tools. Wall breaching is reserved for specific tactical scenarios, not as a default residential entry method.

69. D — Door size-up identifies the door type, locking mechanisms, and direction of opening to inform appropriate tool selection. The information determines whether to use conventional forcing, through-the-lock, hydraulic forcing, or other techniques, supporting efficient and damage-minimizing entry.

70. B — Mortise locks and rim locks are not identical in design and operation; mortise locks are recessed into the door edge, while rim locks are surface-mounted on the door's interior face. The different designs require different forcing approaches.

71. A — Maximizing damage to facilitate later investigation is not a consideration during forcible entry; the principle is to minimize damage where practical. Investigation needs are addressed by careful documentation and evidence preservation, not by maximizing forcing damage.

72. D — The optimal ladder placement angle is approximately 75 degrees from horizontal, with the butt placed at approximately one-quarter the ladder's working length from the building. The 1:4 ratio achieves the optimal angle that balances climber stability against tipping and sliding risks.

73. A — Not any ladder can be used regardless of length, type, and condition for window rescue; the ladder must reach the window with appropriate tip placement, be rated for the operational load, and allow safe traverse. Improper ladder selection compromises the rescue capability.

74. C — Aerial ladders permanently mounted on apparatus turntables are not ground ladders; they are aerial appliance ladders. Ground ladders include single (straight), extension, and roof ladders — all manually positioned by personnel.

75. C — Roof ladders have folding hooks at the tip that engage the ridge for stability on pitched roofs. The hook mechanism prevents the ladder from sliding on the slope, providing the stability needed for safe roof operations.

76. B — Annual inspection is not the maximum frequency required by NFPA 1932; ladders should be inspected after each use for damage, plus annual service testing for load capacity. The combined inspection schedule supports operational readiness.

77. B — A single-firefighter horizontal carry over the shoulder for a 35-foot extension ladder is not a recognized carry; the ladder's size and weight require multiple personnel for safe handling. Recognized carries match ladder size to the number of personnel needed.

78. A — The climber should maintain three points of contact with the ladder at all times — two hands and one foot, or two feet and one hand. The three-point principle preserves stability if any single contact fails during climbing, supporting climber safety.

79. A — Ladders should not be placed directly in front of doors; the door swing path requires unobstructed clearance, and the ladder placement adjacent to (not in front of) the opening allows door operation while supporting victim egress. Window placement principles differ from door placement.

80. D — Vertical ventilation releases superheated gases at the highest point of the structure, working with natural buoyancy of hot smoke. The buoyancy-driven release decompresses the structure and supports interior conditions before fire spreads into other areas.

81. C — Horizontal ventilation is not always preferable to vertical ventilation regardless of conditions; the choice depends on the fire's location, structure configuration, wind, and operational objectives. Vertical ventilation is often more effective for attic or upper-floor fires where vertical release matches the fire's location.

82. B — Effective PPV requires a specific exhaust opening downstream of the fan; the airflow needs an exit path or it cannot effectively displace smoke and heat. The inlet-exhaust coordination is essential to PPV effectiveness.

83. B — Negative-pressure ventilation draws air out of the structure with smoke-ejector fans positioned at openings. The fans create a low-pressure zone at the opening, drawing smoke and heat outward through the exhaust path.

84. C — The cut should not be made directly over the structural members; the cut should be between members to release the heat and smoke through the roof decking. Cutting through structural members compromises the roof's load capacity and creates collapse risk.

85. D — The operator's personal preference independent of operational considerations is not a recognized factor for ventilation timing. Timing depends on coordination with attack crews, wind direction and intensity, and fire conditions and stage — all operational variables.

86. D — Hydraulic ventilation uses a fog stream directed out of an opening to entrain and remove smoke through the airflow created by the stream. The technique provides a backup ventilation method when mechanical ventilation is unavailable or insufficient.

87. C — Supply hose carries water from the source (hydrant or static source) to the pump, typically in larger diameters such as 2½, 3, 4, or 5 inches. The larger diameter reduces friction loss, allowing higher flows over longer distances.

88. A — Attack hose does not carry water from the hydrant to the pump; that is supply hose's function. Attack hose connects the pump to the nozzle for fire suppression, typically in smaller diameters (1½, 1¾, or 2½ inch) for handling and maneuverability.

89. A — A "spiral load specifically designed for high-rise vertical transport" is not a standard hose load; recognized hose loads include accordion, horseshoe, flat, and others. High-rise hose deployment uses dedicated high-rise packs rather than a specialized spiral load.

90. B — Hydrants should be opened slowly to prevent water hammer, the pressure surge that can damage the water main, the hydrant itself, or the supply hose. The slow opening allows the water flow to develop gradually without producing destructive pressure spikes.

91. B — Static water sources do not provide unlimited water with no depth or accessibility requirements; drafting requires adequate water depth (typically 2+ feet) and accessibility for the suction hose and strainer. Insufficient depth allows the strainer to draw air, breaking the priming vacuum.

92. C — The color of the hose exterior covering does not affect friction loss; the factors are hose diameter, flow rate (gpm), and hose length. Friction loss calculations use these variables to determine pressure loss along the hose.

93. B — Smooth-bore handlines operate at 50 psi nozzle pressure, the standard operating pressure for solid-stream handheld nozzles. The lower pressure produces a coherent stream with good reach and penetration while maintaining manageable nozzle reaction force.

94. B — Combination nozzles do not typically operate at 50 psi the same as smooth-bore; the standard is 100 psi nozzle pressure for combination (fog) nozzles, with lower-pressure options at 75 psi for some applications. The higher pressure atomizes water through the internal baffles.

95. A — The pump operator is responsible for water supply, pump operation, and hose-line pressure delivery — the complete pump-side operational responsibility. The role is critical to providing reliable water for attack crews throughout operations.

96. B — A "vortex nozzle" is not a standard fire-service nozzle type. Standard nozzles include smooth-bore (solid stream), combination (fog), and master stream nozzles, each with specific design and operational use.

97. C — Master streams cannot be operated by a single firefighter manually for any duration; the high flow rates (350+ gpm) and resulting nozzle reaction force require deck guns, monitors, ground monitors, or other stable appliances. Unmanned operation is the standard for sustained master streams.

98. A — Class A foam contains a surfactant that reduces water surface tension, improving water penetration into porous and tightly packed Class A combustibles. The wetting agent addresses the penetration limitation of plain water on deep-seated and densely packed fuels.

99. C — AFFF is not effective on polar solvents without special formulation; polar solvents dissolve the aqueous film. AR-AFFF (alcohol-resistant AFFF) contains polymer additives that form a protective membrane resistant to polar-solvent dissolution.

100. D — A 25% proportioning rate is not a standard fire-service foam proportioning rate; common rates are 1%, 3%, and 6%. The proportioning rate is matched to the foam concentrate's design and the fuel type being addressed.

101. B — Foam should be applied gently to allow the foam blanket to form across the fuel surface without disrupting it. Aggressive direct application or high-velocity streams can disrupt the foam blanket and reduce its vapor-suppression effectiveness.

102. C — Pump cavitation is not harmless and does damage the pump; vapor bubbles forming and collapsing in the impeller cause erosion and mechanical damage over time. The operator must address cavitation through throttle reduction, supply correction, or shutdown to prevent pump damage.

103. A — High-rise operations must account for elevation pressure loss (approximately 0.434 psi per foot of elevation). The pump operator must add this elevation loss to the friction loss and nozzle pressure to determine the required pump discharge pressure for upper floors.

104. A — Direct attachment of attack lines to the apparatus pump at ground level for upper floor delivery is not feasible at high-rise operations because the elevation pressure loss and hose length exceed the pump's reasonable capability. Standpipe systems and high-rise hose packs are used instead.

105. D — Class I standpipe systems have 2½-inch outlets for fire department use with adequate flow for trained personnel. The larger outlets support higher-flow attack lines used by fire department crews, with the 2½-inch hose appropriate to the typical fire department capability.

106. D — Class III standpipe systems are not equivalent to Class I systems with no additional features; Class III combines both 1½-inch and 2½-inch outlets, serving both occupant use and fire department use. The combined capability supports multiple-tier response.

107. A — Direct attack applies water directly to the fuel surface to cool it below ignition temperature, stopping the heat release from the burning fuel. The technique provides the most effective extinguishment when the fuel can be reached and the application is safe.

108. A — "Internal attack from the safety of the apparatus exterior" is contradictory and not a recognized attack method. Recognized attack methods include direct attack on the seat, indirect attack using fog stream, and transitional attack.

109. D — Indirect attack should not be used as the routine fire-attack method in residential structure fires; it is reserved for situations where direct attack is not safe or the seat of the fire cannot be reached. Direct attack on the seat is the typical residential approach.

110. C — Transitional attack uses a brief exterior application to reset interior conditions before crews commit to interior advance. The technique reduces heat release and improves interior conditions while preserving the option for interior attack and search operations.

111. C — An aggressive interior approach without regard for risk is not a consideration for defensive operations; defensive operations specifically reject interior risk in favor of exterior containment. The principle is risk-based, not aggressive interior approach.

112. D — Maximum risk in all situations regardless of saveable life or property is contrary to the risk management principle. The risk management hierarchy applies graduated risk: significant risk for civilian life safety, limited risk for property of value, and no risk for unoccupied structures without salvage value.

113. B — The fire chief establishes department policy, training, and overall organizational direction, providing strategic leadership rather than tactical scene operations. The chief may serve as IC at major incidents but is not always the on-scene commander.

114. C — Independent decision-making by each responding unit without coordination is contrary to ICS principles. ICS requires single point of authority, hierarchical structure, modular expansion, and unity of command — all addressing the need for coordinated rather than independent decision-making.

115. B — Unified command is used when multiple agencies or jurisdictions have shared authority for the incident. The structure preserves each agency's authority while providing single operational coordination, supporting effective multi-agency response.

116. D — The Finance Section does not direct tactical fire suppression operations; the Operations Section directs tactical operations, while Finance manages cost tracking, time recording, and incident financial administration. The section functions are distinct in ICS.

117. D — Fire prevention inspection during an active incident is not a recognized fireground assignment. Active fireground assignments include attack, search and rescue, ventilation, and other operational functions — not inspection activities.

118. B — Pre-incident planning is conducted during quiet times to gather information for use during incidents, capturing building information, hazards, water supplies, and operational considerations when time and conditions allow thorough examination.

119. B — Primary search is the rapid initial search to locate viable victims during firefighting operations, conducted as quickly as conditions allow to maximize the chance of locating viable occupants within the survivability window.

120. A — Secondary search is not performed before fire control is established; it is conducted after the initial search and fire control to provide thorough verification that no victims remain in the structure. The two-stage search approach addresses both speed and thoroughness.

121. A — A "wide-perimeter sweep with no reference point" is not a recognized search technique; recognized techniques use reference points (walls, ropes, hose lines) to maintain orientation. Reference-based searches prevent searcher disorientation and supports systematic coverage.

122. D — VES allows direct access to specific likely-victim locations via exterior ladder, with isolation of the search area by closing the door. The technique combines speed (direct access) with safety (door isolation) for targeted victim recovery in known or suspected locations.

123. A — Self-survival skills are not unnecessary for trained firefighters; they are essential operational skills covering recognition of changing conditions, MAYDAY procedures, and escape/rescue techniques. Self-survival is part of every firefighter's required skill set.

124. A — Continuing operations regardless of changing conditions contradicts survival doctrine. Survival principles require recognition of deterioration, PASS activation when in distress, and MAYDAY calls when necessary — not continued operations regardless of conditions.

125. D — RIC is staged for immediate response to firefighter MAYDAY situations, with personnel and equipment prepared for rapid rescue intervention. The staged readiness matches the time-criticality of firefighter rescue, where delays directly affect survival chances.

126. D — LUNAR and LIP formats are not identical across all jurisdictions with no variations; departments adapt the structured information formats to their specific operational needs and terminology. The core principle of structured information transmission is consistent, but specifics vary.

127. A — A "single-handed manual lift of a fully-equipped firefighter to standing position" is not a recognized rescue technique due to the combined weight (typically 200-300 lbs with equipment). Recognized techniques use drags, webbing, ropes, and multiple-rescuer techniques.

128. A — The survivability window for trapped occupants is limited by fire conditions; rapid search maximizes the chance of locating viable victims before conditions become unsurvivable. The time-criticality drives the urgency of primary search operations.

129. C — Salvage operations protect property contents from secondary damage during firefighting operations, using covers, removal of high-value items, water flow channeling, and other techniques. The integrated approach reduces overall property damage and improves outcomes.

130. C — Overhaul does require SCBA protection because the active fire is out; the atmosphere contains elevated carbon monoxide, hydrogen cyanide, and particulate combustion products that exceed safe exposure limits. SCBA discipline during overhaul addresses these continuing exposures.

131. D — Burning of damaged contents on-scene is not a recognized salvage technique; salvage protects contents through covers, removal, and water management. Burning damaged contents would destroy potentially salvageable property and may also destroy evidence.

132. D — Loss control integrates with fire suppression to reduce overall damage and improve property outcomes. The combination of suppression and active loss control during operations provides better property outcomes than either function alone.

133. C — Salvage covers do not need to be installed only after all fire activity has ended; covers should be pre-positioned where practical before water application to maximize protection from cumulative water exposure during operations.

134. B — Use of natural light without artificial illumination for cost savings is not a recognized overhaul consideration; overhaul requires adequate illumination for safe and thorough operations, with portable scene lighting used when natural light is inadequate.

135. A — Photoelectric detectors are more responsive to smoldering fires (larger smoke particles scatter the light beam effectively), while ionization detectors are more responsive to flaming fires (smaller particles disrupt the ion flow). The detector technology matches the specific smoke particle size.

136. C — Residential sprinklers do not reduce fire fatalities only when combined with smoke alarms; sprinklers independently provide substantial fire suppression and life safety. The combined effect of detection (warning) plus suppression (control) is even greater, but sprinklers alone are highly effective.

137. B — "Vacuum-charged systems" is not a recognized sprinkler system type. Recognized types are wet-pipe, dry-pipe, pre-action, and deluge — each with specific applications and activation characteristics.

138. A — Fire alarm systems include initiating devices (detectors and pull stations), notification appliances (horns, strobes), and control panels (the system brain). The three-component framework defines the typical fire alarm system architecture.

139. A — CO cannot be detected by human senses such as smell or taste at toxic concentrations; CO is colorless, odorless, and tasteless, with toxic effects occurring at concentrations not detectable without instruments. CO detectors provide warning before dangerous levels are reached.

140. B — Operations-level responders are trained for defensive operations around the hazard, including containment, isolation, and protection of personnel and property. Operations-level is the typical training level for most fire department personnel responding to hazmat incidents.

141. D — Placards are required on both rail cars and highway transport vehicles carrying hazardous materials in regulated quantities, not only on rail cars. DOT regulations require placarding on most modes of transport at threshold quantities.

142. A — Unrestricted access to all responders regardless of training and PPE level is contrary to hot-zone control; the hot zone is restricted to personnel with appropriate training and PPE to limit unnecessary exposure. Personnel access control is fundamental to scene safety.

143. A — The ERG provides first-responder information for hazardous materials incidents, organized by ID number, chemical name, and hazard class. The multiple access points support rapid lookup based on the identification information available at the scene.

144. B — The cold zone is not closer to the hazard than the warm zone; the cold zone is the outermost safe area, while the warm zone is the decontamination/limited-access area between the hot and cold zones. The zoning progresses from hot (closest to hazard) outward to cold.

145. A — Vapor density indicates whether a material's vapor will rise or settle relative to air; vapor densities less than 1 rise (lighter than air), while densities greater than 1 settle (heavier than air). The property affects where vapor accumulates and the appropriate response zone.

146. C — Hybrid and electric vehicles do require special operational considerations beyond conventional vehicles; the high-voltage systems present electrical hazards, and the battery systems can be involved in fire with unique characteristics. The special considerations affect both extrication and fire suppression.

147. B — Rapid extrication of all patients regardless of injury or scene conditions is not standard practice; rapid extrication is reserved for specific scenarios where scene safety is compromised or patient condition requires immediate removal. Standard extrication uses controlled procedures.

148. A — Hybrid and electric vehicles have high-voltage systems (typically 300-800V DC) that present shock and arcing hazards if compromised during extrication operations. The high-voltage isolation procedures (using service disconnects) are specific to these vehicles.

149. B — The Firefighter II provides factual observation contributions to the investigator who has NFPA 1033 qualifications. The role is to support the qualified investigator with operational observations, not to conduct independent cause determination.

150. C — "Hypothetical cause based on circumstantial reasoning" is not a standard NFPA fire-cause classification. Recognized classifications are accidental, natural, incendiary, and undetermined — based on evidence and the scientific method, not hypothetical reasoning.