Hazardous Materials for First Responders

Questions and Answers

From IFSTA Hazmat for First Responders 4th Edition

Personal Protective Equipment

1. Which OSHA regulation includes permissible practices, definitions and the selection of respirators?
p. 383

A.) 29 CFR 1910.129
*B.) 29 CFR 1910.134
C.) 29 CFR 1910.137
D.) 29 CFR 1910.122

2. Which NFPA standard defines three classes of ensembles?
p. 395

A.) NFPA 1951
B.) NFPA 1991
*C.) NFPA 1994
D.) NFPA 1971

3. Which is considered the most important piece of protective equipment the responder wears in terms of preventing dangerous exposures to harmful substances?
p. 383

A.) Vapor-protection
*B.) SCBA
C.) Boots
D.) Jumpsuit

4. What protects against certain contaminants in the ambient air?
p. 386-387

A.) PRFs
B.) SARs
*C.) APRs
D.) SCBA

5. Where are cooling vests worn?
p. 421

A.) Cooling vests are not used
*B.) Beneath PPE
C.) Between PPE and over coveralls
D.) Over PPE

6. What is used for respiratory protection with the Level C ensemble?
p. 411

A.) SCBA
B.) PMR
*C.) APR
D.) SAR

7. Which EPA ensembles will the ERG only reference?
p. 413

*A.) Levels A and B
B.) Levels B and C
C.) Levels C and D
D.) Levels B and D

8. Which is NOT a limitation of respiratory equipment?
p. 392

A.) Limited visibility
B.) Decreased mobility
C.) Decreased ability to communicate
*D.) Chemical general

9. Which of the following are cracking and brittleness examples of?
p. 406

A.) Influxation
*B.) Degradation
C.) Permeation
D.) Penetration

10. Which type does NIOSH assign to SARs?
p. 386

A.) Type B respirator
*B.) Type C respirator
C.) Type A respirator
D.) Type D respirator

11. What is the first level of body armor to utilize plates?
p. 407

A.) Type IV
B.) Type V
*C.) Type III
D.) Type II

12. Which organization issues a special approval and label identifying the SCBA as appropriate for use during terrorist incidents?
p. 384

A.) OSHA
*B.) NIOSH
C.) NIST
D.) NFPA

13. In which situation is the standard structural firefighting ensemble including SCBA adequate?
p. 416

A.) Biologicals
*B.) Incendiaries
C.) TIMs
D.) Radiologicals

14. Which standards apply for eye protection apply to the facepiece lens design and testing?
p. 383

A.) OSHA
*B.) ANSI
C.) NFPA
D.) NIOSH

15. Which standard should be consulted for guidance when selecting gloves that will protect workers and assist employers in compliance with OSHA regulations?
p. 396

A.) ANSI/ISEA 107-2004
B.) ANSI/ISEA 187-2003
*C.) ANSI/ISEA 105-2005
D.) ANSI/ISEA 189-2003

16. How many challenge chemicals is listed in the NFPA standard for vapor-protective clothing?
p. 403

A.) 12
*B.) 21
C.) 27
D.) 19

17. What occurs when the body's system of temperature regulation fails and body temperature rises to critical levels?
p. 420

A.) Heat fatigue
*B.) Heat stroke
C.) Heat cramps
D.) Heat exhaustion

18. In which type of environment should PAPRs not be used?
p. 389

*A.) Explosive
B.) Haz mat
C.) Chemical
D.) WMD

19. Which of the following is NOT a primary environmental condition that causes cold-related stress?
p. 421

A.) Low temperatures
*B.) Low/cool winds
C.) Cold water
D.) Dampness

20. Which NFPA standard specifies the minimum selection, care and maintenance requirements for structural fire fighting protective ensembles?
p. 395

*A.) NFPA 1851
B.) NFPA 1999
C.) NFPA 1992
D.) NFPA 1975

21. Which of the following is NOT considered an advantage of using SCBA?
p. 384

A.) Maneuverability
B.) Independence
C.) Protection from toxic atmospheres
*D.) Length of air supply duration

22. Which is often a result of faulty manufacturing or problems with the inherent design of the suit?
p. 406

*A.) Penetration
B.) Permeation
C.) Degradation
D.) Influxation

23. Which of the following is a common limitation of the protective suits?
p. 403

A.) Is bulky
*B.) Contributes to heat stress
C.) Does not provide full body coverage
D.) Requires multiple personnel to don

24. In which situation is use of the SAR NOT approved?
p. 385

*A.) Fire fighting
B.) Terrorism
C.) Chemical agents
D.) Haz mat

25. Which of the following is NOT a limitation of the APR?
p. 388

A.) Need for a normal oxygen content of the atmosphere before use
B.) Limited life of its filters and canisters
C.) Need for constant monitoring of the contaminated atmosphere
*D.) Danger of damage to the unit

26. Which feature does most protective clothing possess?
p. 401

A.) Impermeable to flame
*B.) Impermeable to moisture
C.) Impermeable to heat
D.) Impermeable to chemicals

27. Which NFPA standard will new ensembles meet in the next generation of firefighters' protective clothing?
p. 399

A.) NFPA 1961
B.) NFPA 1951
C.) NFPA 1981
*D.) NFPA 1971

28. Who maintains and disseminates an approval list for the SCBA's approved for use in terrorist incidents?
p. 385

A.) NIST
*B.) NIOSH
C.) OSHA
D.) NFPA

29. In which event does the full facepiece not have to be used?
p. 387

A.) Fire at a haz mat incident
B.) WMD incident
C.) Terrorism incident
*D.) Explosion with lots of dust

30. Which of the following is NOT listed as a design consideration for protective clothing?
p. 414

A.) Clothing construction
B.) Seam and closure construction
C.) Comfort
*D.) Visibility

31. Which NFPA standard deals with PASS requirements?
p. 396

A.) NFPA 2112
B.) NFPA 1975
C.) NFPA 2113
*D.) NFPA 1982

32. Which are designed to be worn for a limited amount of time (such as 15 minutes)?
p. 391

A.) SARs
B.) Combined respirators
*C.) Escape respirators
D.) SCBA

33. Which is a process that occurs when a chemical passes through a fabric on a molecular level?
p. 405

A.) Penetration
*B.) Permeation
C.) Influxation
D.) Degradation

34. What is the total out of the bag usage of the JSLIST ensemble?
p. 418-419

A.) 90 days
B.) 45 days
*C.) 120 days
D.) 60 days

35. Which of the following must be worn with vapor-protective ensembles?
p. 403

A.) Combination SCBA/PAPR
B.) Negative-pressure SCBA
*C.) Positive-pressure SCBA
D.) Combination SCBA/APR

36. What position should the cylinder valve be in when donning the Level A suit?
p. 425

A.) Fully closed
B.) Half open
*C.) Fully open
D.) One-third closed

37. Which of the following does the joint service lightweight integrated suit technology protective overgarment NOT protect the wearer against?
p. 418

A.) Liquid agents
B.) Vapor CB agents
C.) Solid agents
*D.) Gamma particles

38. Which NIOSH standard deals with the approval of respiratory protective devices?
p. 383

A.) 42 CFR 91
B.) 42 CFR 83
C.) 42 CFR 92
*D.) 42 CFR 84

39. Which of the following MOPP levels will the firefighters NOT use?
p. 419

*A.) 5
B.) 4
C.) 0
D.) 1

40. What is the last thing that needs to be donned when using a Level B suit?
p. 426

A.) Outer protective boots
B.) Inner protective boots
*C.) Outer protective gloves
D.) Inner protective gloves

41. Which situation would NOT require the usage of Level A protective equipment?
p. 410

*A.) Type and atmospheric concentration of substances have been identified and require a high-level of respiratory protection but less skin protection
B.) Operations being conducted in confined or poorly ventilated areas
C.) Substances are present with know or suspected skin toxicity
D.) Chemical hazards are unknown or unidentified

42. What will a majority of responders be wearing initially?
p. 415

A.) Level A ensemble
B.) Level B ensemble
C.) Station uniform
*D.) Turnout gear

43. Which component of the Level D ensemble is considered optional?
p. 412

A.) Safety glasses
B.) Coveralls
*C.) Gloves
D.) Hardhat

44. Which is a local freezing and tissue damage due to prolonged exposure to extreme cold?
p. 421

A.) Frostrash
B.) Frostnip
*C.) Frostbite
D.) Frostfoot

45. Who is the focus of the Chemical-Protective Clothing/Respiratory Protection Management Program?
p. 405

A.) Wearer, victim and bystander
B.) Victim
*C.) Wearer
D.) Bystander

46. Which NFPA standard specifies the minimum requirements for the selection, care and maintenance of open-circuit SCBA?
p. 382

A.) NFPA 1981
B.) NFPA 1910
*C.) NFPA 1852
D.) NFPA 1842

47. In which zone may EMS be protected with the low-cost ensemble consisting of high-quality respirator, butyl rubber gloves and commercial chemical overgarment?
p. 418

*A.) Cold
B.) Hot
C.) Cool
D.) Warm

48. Which type of protective clothing do standards developed by NIOSH and NFPA primarily apply to?
p. 394

A.) Structural fire fighting gear
*B.) Chemical-protective clothing
C.) Body armor
D.) Bomb suits

49. Which standard establishes a minimum level of protection for emergency response personnel against adverse vapor, liquid-splash and particulate environments during CBRN terrorism incidents?
p. 394

A.) NFPA 1951
B.) NFPA 1971
C.) NFPA 1994
*D.) NFPA 1991

50. How much water should the firefighter drink every 15 to 20 minutes ideally?
p. 420

A.) 14 ounces (400 ml)
B.) 18 ounces (500 ml)
*C.) 7 ounces (200 ml)
D.) 11 ounces (300 ml)

51. How many groups does 29 CFR 1910.120 apply to?
p. 396

A.) Seven
*B.) Five
C.) Eleven
D.) Nine

52. When is respiratory equipment initially inspected?
p. 423

*A.) When it is purchased
B.) After the initial use
C.) During manufacture
D.) Before it is first used

53. Which is a heat related illness resulting from prolonged exposure to high temperatures and characterized by excessive sweating and abdominal cramps?
p. 420

*A.) Heat cramps
B.) Heat stroke
C.) Heat rash
D.) Heat exhaustion

54. Which of the following protective suits is extremely heavy and limits the wearer's dexterity?
p. 407

A.) Structural fire fighting ensemble
B.) Body armor
*C.) Bomb disposal suit
D.) Chemical-protective clothing

55. What level ensemble is firefighter structural protective clothing?
p. 412

*A.) Level D
B.) Level A
C.) Level C
D.) Level B

56. What are the two different types of SCBA available to first responders?
p. 381

*A.) Open and closed circuit
B.) Powered and supportive
C.) Gas and vapor removing
D.) Particulate and vapor removing

57. Which of the following is adequate for use only at an explosives/ballistics incident?
p. 417

A.) Haz mat/chemical protective ensemble
B.) Bomb suit
*C.) Body armor with duty uniform
D.) US&R ensemble

58. Which NFPA standard contains performance requirements for a CBRN Technical Rescue Protective Ensemble for use during entry into CBRN atmospheres that are not IDLH?
p. 395

A.) NFPA 1992
B.) NFPA 1999
C.) NFPA 1971
*D.) NFPA 1951

59. What is the first thing that needs to be donned when using structural firefighting PPE?
p. 428

A.) Coat and trousers
*B.) Trousers and boots
C.) Protective hood and coat
D.) Coat and SCBA

60. Which class ensemble is intended for use at terrorism incidents involving biological particulate hazards with concentrations below IDLH levels?
p. 395

A.) Class 1
*B.) Class 4
C.) Class 2
D.) Class 3

61. Which type of SCBA is allowed to be used at incidents where responders are exposed to hazardous materials?
p. 384

A.) Pressure-demand open-circuit
B.) Pressure-relayed open-circuit
*C.) Positive-pressure open-circuit
D.) Negative-pressure open-circuit

62. What is the first step taken when donning a Level B suit?
p. 426

A.) Ensure proper seal of facepiece
*B.) Perform a visual inspection
C.) Don work boots
D.) Don SCBA

63. What efficiency must the HEPA filters used for medical emergencies be?
p. 388

*A.) 99.97 percent
B.) 95 percent
C.) 99 percent
D.) 97.99 percent

64. Which is NOT a component of the Level A protective ensemble?
p. 409

*A.) Positive-pressure SCBA with half facepiece and glasses
B.) Chemical-resistant inner gloves
C.) Two-way radios worn outside of the suit
D.) Vapor-protective suits

65. What is usually used to close gaps within the nonencapsulating suit?
p. 402

A.) Rope
*B.) Tape
C.) Plastic
D.) Material

66. Which of the following are neither encapsulating nor nonencapsulating suits resistant to?
p. 402

*A.) Heat
B.) Gases
C.) Vapors
D.) Liquids

67. Where is the label placed for SCBA that demonstrate compliance to the CBRN criteria?
p. 385

*A.) SCBA backplate
B.) SCBA cylinder
C.) SCBA supply line
D.) SCBA regulator

68. The atmosphere contains less than what oxygen concentration when Level B clothing is recommended?
p. 411

A.) 25.5 percent
*B.) 19.5 percent
C.) 21.5 percent
D.) 23.5 percent

69. Which of the following does the Level B ensemble provide protection from?
p. 410

A.) Solid-collision
*B.) Liquid-splash
C.) Vapor exposure
D.) Gaseous exposure

70. Which statement about protective equipment is NOT correct?
p. 392

A.) Protective clothing must be worn whenever a wearer faces potential hazards from thermal exposure
B.) Emergency responders must be concerned with safety when choosing and using protective clothing
C.) Traditionally body armor was not designed with chemical protection in mind
*D.) Respiratory protection creates a protective ensemble that will protect against any hazard

71. Which standard specifies minimum requirements for design and performance of new flash fire protective garments?
p. 396

A.) NFPA 2113
*B.) NFPA 2112
C.) NFPA 1951
D.) NFPA 1975

72. What may be necessary if structural protective equipment is exposed to permeating types of chemicals?
p. 398

*A.) Discard it
B.) Decon it
C.) Wash it
D.) Recycle it

73. Which of the following hazards will chemical-protective clothing and respiratory protection NOT provide adequate protection against?
p. 380

A.) Hazardous environments
B.) CBR materials
C.) Industrial chemicals
*D.) Thermal hazards

74. What do vapor- and gas-removing filters typically use to remove the targeted gas or vapor from the air?
p. 389

A.) Respiration filter
*B.) Sorbent material
C.) Sorbent/catalyst combination
D.) Catalyst

75. Against which type of radiation is the US&R ensemble adequate?
p. 416

A.) Beta
B.) X
*C.) Alpha
D.) Gamma

76. Which part of the encapsulating suit may be separate?
p. 402

A.) Belt
B.) Pants
C.) Vest
*D.) Boots

77. Up to what temperature is the wearer protected when wearing a fire-entry suit?
p. 401

A.) 2,600 degrees Fahrenheit (1 420 degrees Celsius)
*B.) 2,000 degrees Fahrenheit (1 093 degrees Celsius)
C.) 2,400 degrees Fahrenheit (1 311 degrees Celsius)
D.) 2,200 degrees Fahrenheit (1 202 degrees Celsius)

78. Which of the following is NOT a question about the physical properties of protective clothing that needs to be considered during selection?
p. 414

A.) Is the material flexible enough to allow users to perform needed tasks?
*B.) Can the material be used under conditions other than CBRN incidents?
C.) Will the material maintain its protective integrity and flexibility during hot and cold extremes?
D.) Will the material resist tears, punctures, cuts and abrasions?

79. Which of the following is the haz mat/chemical protective ensemble (Level A and B only) effective against?
p. 417

A.) Incendiaries/fires
B.) Radiological agents
C.) TIMs
*D.) Chemical warfare agents

80. Which chemical is NOT tested for permeation in the vapor-protective suit?
p. 404

A.) Sulfuric acid
B.) Toluene
*C.) Ethylene glycol
D.) Chlorine gas

81. How many responders should be assigned in each group as a minimum when operating in the hot zone?
p. 422

A.) Six
*B.) Two
C.) Eight
D.) Four

82. Which organization must certify all SCBA for immediately dangerous to life or health atmospheres?
p. 383

*A.) NIOSH
B.) IFSTA
C.) NFPA
D.) OSHA

83. Which NFPA standard will the new standard for a new CBRN ensemble for law enforcement officers be based upon?
p. 397

A.) NFPA 1951
B.) NFPA 1991
C.) NFPA 1971
*D.) NFPA 1994

84. What oxygen level must be present when using Level C ensembles?
p. 412

*A.) Between 19.5 and 23.5 percent
B.) Between 20.5 and 25.5 percent
C.) Between 21.5 and 24.5 percent
D.) Between 18.5 and 21.5 percent

85. Which of the following will the structural fire fighting protective ensemble provide adequate protection?
p. 399

A.) Shrapnel
B.) Projectiles
*C.) Thermal damage
D.) Mechanical blast effects

86. Which NFPA standard specifies the minimum requirements for the design, performance, testing and certification of open-circuit SCBA?
p. 382-383

A.) NFPA 1842
B.) NFPA 1852
*C.) NFPA 1981
D.) NFPA 1910

87. Which MOPP level ensemble is designed for use upwind from any threat with little danger of exposure to hazardous vapors?
p. 418

*A.) Level Alpha
B.) Level Beta
C.) Level 2
D.) Level 0

88. Which of the following is NOT part of the medical evaluation conducted on responders while wearing PPE?
p. 422

*A.) Hydration level
B.) Respirations
C.) Blood pressure
D.) Body weight

89. Which is an optional piece of equipment in the Level B ensemble?
p. 410

A.) Hooded chemical-resistant clothing
B.) Chemical-resistant inner gloves
C.) Hardhat
*D.) Disposable, chemical-resistant outer boot covers

90. Which is usually a sign of heat stroke?
p. 420

A.) Confusion
B.) Hot, dry skin
*C.) Lack of sweating
D.) Convulsions

91. Which of the following activities should NOT require the use of CPC?
p. 404-405

*A.) Exposure protection
B.) Emergency monitoring
C.) Evacuation
D.) Rescue

92. Which material should undergarments be made from to allow for more effective cooling of the firefighter?
p. 421

*A.) Cotton
B.) Nylon
C.) Lycra
D.) Polyester

93. Which level of EPA chemical protection ensemble includes the use of liquid-splash protective clothing?
p. 403

A.) Level C
B.) Level A
C.) Level D
*D.) Level B

94. Up to how much hose is used with a supplied-air respirator?
p. 385

A.) 400 feet (122 m)
B.) 600 feet (182 m)
C.) 200 feet (61 m)
*D.) 300 feet (91 m)

95. Which should be donned first when using a Level A suit?
p. 425

*A.) Outer boots
B.) Inner gloves
C.) SCBA regulator
D.) Hard hat

96. Which can only protect the wearer against large-sized particulates?
p. 388

A.) SARs
*B.) Particle masks
C.) APRs
D.) HEPA masks

97. What NFPA standard sets the minimum design criteria for liquid-splash protective clothing?
p. 402

A.) NFPA 1975
*B.) NFPA 1992
C.) NFPA 1991
D.) NFPA 1971

98. Which of the following is NOT something that needs to be answered when determining if an APR can be used at the incident?
p. 387

A.) What is the oxygen level?
B.) Is the hazard a vapor or a gas?
C.) What is the hazard?
*D.) Is there a wind affecting the spread?

99. Where on the facepiece is the filter placed when using APRs?
p. 387

A.) Back
B.) Top
*C.) Side
D.) Front

100. In which of the following situations is a structural fire fighting ensemble NOT protective enough?
p. 398-399

A.) There is a chance of fire and this type of protection is appropriate
*B.) Contact with splashes of nerve agents is short lived
C.) Total atmospheric concentrations do not contain high levels of chemicals that are toxic to the skin
D.) CBR hazards have been identified

101. What position should the cylinder valve be in when donning the Level A suit?
p. 425

A.) Fully closed
B.) Half open
*C.) Fully open
D.) One-third closed

102. Which can only protect the wearer against large-sized particulates?
p. 388

A.) SARs
*B.) Particle masks
C.) APRs
D.) HEPA masks

103. Which of the following MOPP levels will the firefighters NOT use?
p. 419

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105. Which are designed to be worn for a limited amount of time (such as 15 minutes)?
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107. Which class ensemble is intended for use at terrorism incidents involving biological particulate hazards with concentrations below IDLH levels?
p. 395

A.) Class 1
*B.) Class 4
C.) Class 2
D.) Class 3

108. Which selection factor takes into account the chemical resistance of the material?
p. 413

A.) Equipment available
B.) CBRN hazards
*C.) Exposure duration
D.) Physical environment

109. Which organization must certify all SCBA for immediately dangerous to life or health atmospheres?
p. 383

*A.) NIOSH
B.) IFSTA
C.) NFPA
D.) OSHA