1. Mechanical ventilation devices are most valuable when properly used:

A. with normal/natural ventilation.
B. in all situations where ventilation is necessary.
C. instead of natural ventilation.
D. to replace fog stream ventilation.

Reference: NFPA 1001, 5.3.11, 5.3.11(A) ,5.3.12, and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 572-573.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 415.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 572-573.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 415.
Answer: A

2. What is one problem with using doorways as ventilation openings?

A. Doors can shut, no matter how well they are propped open.
B. Since they are so much taller than they are wide, a venturi sets up negating the effect.
C. They admit too much air sending the ventilation process out of control.
D. This compromises entry and exit for human use.

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 414.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 414.
Answer: D

3. The side of a building that the wind is striking is called the _____ side. The opposite side is called the _____ side.

A. windward, leeward
B. leeward, windward
C. downwind, upwind
D. upwind, windward

Reference: NFPA 1001, 5.3.11, 5.3.11(A) 5.3.12, and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 570-571, Figure 11.52.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 407.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A) 5.3.12, and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 570-571, Figure 11.52.

Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 407.
Answer: A

4. One **disadvantage** of positive-pressure fans is that they:

A. can spread the fire if used improperly.
B. require the products of combustion to pass through them.
C. block up an otherwise usable doorway.
D. require a team of fire fighters several minutes to hang, set up, and seal.

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 645.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 573.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 417.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 645.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 573.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 417.
Answer: A

5. When ventilating a building, all of the following procedures can be used by firefighters **except** _____ ventilation.

A. vertical B. horizontal C. forced D. manual

Reference: NFPA 1001, 5.3.11, 5.3.11(A)(B), 5.3.12, and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 648, 652-653.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 543.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A)(B), 5.3.12, and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 648, 652-653.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 543..
Answer: D

6. An **advantage** of forced ventilation is that it:

A. may cause fire extension.
B. requires additional personnel for its operation.
C. ensures more positive control of the fire.
D. is dependent upon power.

Reference: NFPA 1001, 5.3.11, 5.3.11(A)(B), 5.3.12, 5.3.12(A)(B), 5.3.10 and 5.3.10(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 573.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A)(B), 5.3.12, 5.3.12(A)(B), 5.3.10 and 5.3.10(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 573.
Answer: C

7. The use of blowers, exhaust fans, and smoke ejectors for ventilation is called _____ ventilation.

A. vertical
B. natural
C. forced/mechanical
D. horizontal

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 572.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 415.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 572.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 415.
Answer: C

8. Proper ventilation results in an orderly movement of _____ through and out of the structure.

A. water fog
B. hose line crews
C. rescue personnel
D. heated fire gases

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.10 and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 631.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 541.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 403.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.10 and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 631.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 541.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 403.
Answer: D

9. The **primary** function of smoke ejectors or exhaust fans is:

A. localizing the fire.
B. removing heat and smoke.
C. providing fresh air for attack crews.
D. removing lighter-than-air gases.

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 644.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 574.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 415.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 644.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 574.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 415.
Answer: B

10. Forced/mechanical ventilation is accomplished by blowers, fans, or:

A. removal of windows.
B. vertical openings.
C. fog streams.
D. natural wind currents.

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 644.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 572.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 418.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 644.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 572.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 418.
Answer: C

11. Convection is:

A. transfer of heat through space by infrared rays.
B. transfer of heat through a solid medium.
C. not considered a method of heat transfer.
D. transfer of heat through liquids or gases by circulating currents.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 97.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 95.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 132.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 97.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 95.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 132.
Answer: D

12. When using a smoke ejector in a window for negative pressure ventilation, the airflow should lead to:

A. the inside.
B. There is no arrow for airflow.
C. either the inside or outside; it makes no difference.
D. the outside.

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 652.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 574.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 415.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 652.

IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 574.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 415.

Answer: D

13. The mixture of vapor to air that will ignite when subjected to an ignition source is known as the:

A. flash point. B. vapor density. C. explosive range. D. burning point.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 94.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 105.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 142.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 94.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 105.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 142.

Answer: C

14. Conservative estimates say that the presence of a screen in a window reduces the airflow by nearly _____ percent.

A. 20 B. 75 C. 50 D. 100

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 669.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 574.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 669.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 574.

Answer: C

15. The phase of fire characterized by temperature decline and diminishing fire is called:

A. ignition. B. growth. C. fully developed. D. decay.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 102.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 121.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 136 and 138.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 102.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 121.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 136 and 138.

Answer: D

16. The transfer of heat by the movement of gases or liquid is known as:

A. conduction.
B. radiation.
C. convection.
D. direct-flame contact.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 97.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 95.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 132.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 97.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 95.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 132.

Answer: C

17. Heat transfer that takes place in the form of electromagnetic waves is known as:

A. convection.
B. radiation.
C. conduction.
D. flame contact.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 99.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 95.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 132-133.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 99.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 95.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 132-133.

Answer: B

18. When the colder of two bodies in contact absorbs heat until both objects are the same temperature, _____ has taken place.

A. specific heat equalization
B. heat transfer
C. latent heat vaporization
D. osmosis transfer

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 96-97.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 93.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 96-97.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 93.

Answer: B

19. When the concentration of a gas is within the range where it can ignite, it is said to:

A. be at its ignition temperature.
B. have reached its boiling point.
C. be within its flammable/explosive range.
D. be at its flash point.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 94 and 911.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 105.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 142.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 94 and 911.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 105.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 142.
Answer: C

20. The principle which **most closely** describes how water extinguishes fire is:

A. removal of fuel.
B. reduction of temperature.
C. exclusion of oxygen.
D. inhibition of chain reaction.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 89.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 130.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 133.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 89.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 130.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 133.
Answer: B

21. In the fire tetrahedron, which of the following is the reducing agent?

A. Fuel
B. Heat
C. Oxygen
D. Chemical chain reaction

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 88.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 88.
Answer: A

22. At room temperature, combustion is supported at oxygen concentrations as low as _____ percent.

A. 5
B. 10
C. 14
D. 20

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)

Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 95.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 103.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 95.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 103.
Answer: C

23. The three physical states of fuel are:

A. smoke, heat, and light.
B. solid, liquid, and gas.
C. conduction, convection, and radiation.
D. atom, molecule, and compound.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 93.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 97 and 99.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 129.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 93.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 97 and 99
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 129.
Answer: B

24. A fire in the presence of a higher-than-normal concentration of oxygen will:

A. burn slower than normal.
B. burn faster than normal.
C. not be effected by the oxygen.
D. not burn if oxygen is too rich.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 95-96.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 104.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 138.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 95-96.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 104.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 138.
Answer: B

25. _____ is described as the point-to-point transmission of heat energy.

A. Conduction
B. Radiation
C. Convection
D. Flashover

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 97.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 94.

Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 132.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 97.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 94.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 132.
Answer: A

26. The chemical decomposition of a substance through the action of heat **best** defines:

A. oxidation.
B. pyrolysis.
C. boiling point.
D. heat of decompression.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 93.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 90.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 131.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 93.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 90.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 131.
Answer: B

27. Which of the following **are not** products of combustion.

A. convection, conduction, radiation, and direct contact.
B. fire gases, heat, smoke, and light.
C. fire gases, water vapor, and carbon particles.
D. carbon monoxide, carbon dioxide, sulphur dioxide, and hydrogen cyanide.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 96-99 and 103.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 107-109.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 131.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 96-99 and 103.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 107-109.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 131.
Answer: A

28. _____ is the transition between the growth and fully developed stages of fire.

A. Flashover
B. Backdraft
C. Flash point
D. Ignition temperature

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 102 and 107.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 137.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 102 and 107.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 137.
Answer: A

29. Fire can be extinguished by:

A. reducing heat, removing oxygen, removing fuel, or stopping the chemical chain reaction.
B. reducing radiation, conduction, or convection.
C. reducing heat, increasing oxygen, or removing fuel.
D. increasing the flammable limits of the material on fire.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.8, 5.3.8(A), 5.3.10 and 5.3.10(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 89.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 130.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 133.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.8, 5.3.8(A), 5.3.10 and 5.3.10(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 89.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 130.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 133.
Answer: A

30. Which of the following is the first stage/phase of fire?

A. Incipient/ignition B. Fully developed C. Growth D. Decay

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 100.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 114.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 135.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 100.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 114.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 135.
Answer: A

31. The term vapor density refers to the weight of a gas as compared to the weight of:

A. water. B. air. C. carbon. D. nitrogen.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)

Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 95.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 97.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 141.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 95.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 97
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 141.
Answer: B

32. What potential ventilation hazard do thermopane windows make more likely?

A. Rollover
B. Negative-pressure
C. Backdraft
D. Paradoxical ventilation

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 406-407.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 406-407.
Answer: C

33. A product of combustion that contains a mixture of oxygen, hydrogen cyanide, CO_2, CO, and finely divided carbon particles is:

A. heat.
B. flame.
C. smoke.
D. vapor.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 163-164.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 108.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 131.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 163-164.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 108.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 131.
Answer: C

34. A condition that could be a factor leading to a backdraft situation is:

A. natural ventilation.
B. lack of fire stops.
C. confined concentration of products of incomplete combustion.
D. rapid extinguishment of products of combustion.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 107 and 637.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 122.

Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 140.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 107 and 637.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 122.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 140.

Answer: C

35. The movement of heat through a steel beam to an unexposed part of a building where it starts another fire is an example of:

A. conduction.
B. radiation.
C. convection.
D. direct-flame contact.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 99.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 94.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 132.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 99.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 94.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 132.

Answer: A

36. Compartment fires in the _____ stage are generally fuel/oxygen controlled.

A. ignition
B. growth
C. fully-developed
D. flashover

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 101.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 118.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 137.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 101.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 118.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 137.

Answer: B

37. During _____, conditions in the compartment change very rapidly.

A. rollover
B. growth
C. flashover
D. fully-developed

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 99, 636-637.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 118.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 137.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 99, 636-637.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 118.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 137.
Answer: C

38. Just prior to flashover, what are the conditions within the burning compartment?

A. Temperatures are rapidly increasing
B. Additional fuel packages are becoming involved
C. Fuel packages in the compartment are giving off combustible gases
D. All the above are occurring.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 107.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 119.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 137-138.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 107.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 119.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 137-138.
Answer: D

39. The _____ stage occurs when all combustible materials in the compartment are involved in the fire.

A. ignition B. growth C. flashover D. fully-developed

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 102.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 121.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 136.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 102.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 121.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 136.
Answer: D

40. Besides the growth stage, in what other stage is the fire fuel controlled?

A. rollover B. ignition C. flashover D. decay

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 102.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 121.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 136.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 102.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 121.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 136.

Answer: D

41. The amount of heat energy released over time in a fire is called:

A. ignition rate.
B. heat release rate.
C. heat energy rate.
D. rate of combustion.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 103.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 102-103.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 103.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 102-103.

Answer: B

42. What is the rule of thumb relating smoke movement to fire temperature?

A. There is no rule of thumb; these characteristics are unrelated.
B. The hotter the fire, the slower the smoke moves.
C. Smoke moves slowly at all temperatures up to about 1,350ºF; above that it moves fast.
D. The hotter the fire, the faster the smoke moves.

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 108.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 108.

Answer: D

43. Pyrolysis is defined as:

A. a physical reaction that produces heat.
B. the concentration level of a substance at which it will support ignition and continuous burning.
C. a state where a balance has occurred in a mixture.
D. decomposition or transformation of a compound caused by heat.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 93 and 112.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 90.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 93 and 112.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 90.
Answer: B

44. Combustion is:

A. the point at which the need for outside heat application ceases and a material sustains combustion based on its own generation of heat.
B. a chemical reaction that liberates heat.
C. the chemical action producing heat and light in which the heat maintains the chemical chain reaction continuing the process.
D. the concentration level of a substance at which it will burn.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 87.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 100.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 131.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 87.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 100.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 131.
Answer: C

45. The fire triangle is composed of:

A. heat, chemical reaction, fuel.
B. heat, fuel, and oxygen.
C. oxygen, nitrogen, fuel.
D. fuel, oxygen, LEL.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 88.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 87.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 130.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 88.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 87.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 130.
Answer: B

46. The fire tetrahedron includes all the elements of the fire triangle plus:

A. radiation energy.
B. chemical reaction.
C. carbon dioxide.
D. carbon monoxide.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)

Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 88.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 87-88.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 130.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 88.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 87-88.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 130.
Answer: B

47. The leading killer(s) of people in homes during a fire is/are:

A. smoke and toxic gases.
B. carbon dioxide poisoning.
C. slips and falls.
D. burns.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 353.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 108.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 353.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 108.
Answer: A

48. Which of the following gases **is** **not** produced in fires?

A. Carbon monoxide
B. Hydrogen chloride
C. Carbon dioxide
D. Oxygen

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 631.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 108.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 131.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 631.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 108.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 131.
Answer: D

49. Which of the following **is** **not** a benefit of proper ventilation?

A. More oxygen is fed to the fire.
B. Heat is removed from the structure.
C. Visibility is improved by removing smoke from the structure.
D. It allows occupants of the structure more survival time.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 631.

IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 541.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 405.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 631.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 541.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 405.
Answer: A

50. In what type of occupancy would ventilation **not be** performed as part of extinguishment?

A. Multifamily residential
B. Beauty shops
C. Computer rooms
D. Commercial kitchen

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5,3,10, 5,3,10(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 634.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5,3,10, 5,3,10(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 634.
Answer: C

51. What factor(s) must be considered when venting?

A. Access to the vent site
B. Weather conditions
C. Potential of fire spread
D. All of the above.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 634.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 555.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 634.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 555.
Answer: D

52. By venting an enclosure, the heat level is kept from becoming capable of producing:

A. flashover.
B. backdraft.
C. rollover.
D. Both A and B are correct.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 637-639.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 548, 556, and 560.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 405.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 637-639.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 548, 556, and 560.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 405.
Answer: D

53. Rollover occurs when:

A. fire begins to ignite smoke overhead in "fingers of fire" that reach out and begin to consume fuel in the gaseous state.
B. everything in a confined area ignites at almost the same time.
C. unburned smoke is heated in the absence of oxygen and when oxygen is introduced, an explosive force is produced.
D. pressurized smoke rises to the ceiling and then begins to rapidly bank down, resulting in reduced visibility.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 107 and 639.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 118.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 140.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 107 and 639.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 118.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 140.
Answer: A

54. A British Thermal Unit (BTU) is:

A. the amount of heat required to raise one pound of water one degree Fahrenheit.
B. a substance or an agent that causes two or more objects or parts to bind.
C. decomposition or transformation of a compound caused by light.
D. the concentration level of a substance at which it will burn.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 89.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12 and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 89.
Answer: A

55. A hydrocarbon is:

A. an ideal extinguishing agent.
B. the basic building block of all inorganic materials.
C. any organic compound that contains only carbon and hydrogen.
D. a catalyst in the breakdown of molecules.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 89.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 130.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 89.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 130.
Answer: C

56. A compound is:

A. a combination of substances joined in a chemical bond that cannot be separated without chemical interaction.
B. the process in which liquids are converted to a gas or vapor.
C. an inorganic substance.
D. the mass per unit volume of a substance under specified conditions of pressure and temperature.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 88.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 88.
Answer: A

57. What is one of the toxic gases often present in smoke?

A. Zinc oxide
B. Nitrogen sulfide
C. Hydrogen cyanide
D. Sodium hydroxide

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 164.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 183.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 131.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 164.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 183.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 131.
Answer: C

58. What type of ventilation occurs when clean air is blown into a structure to force fire gases out?

A. Inside out
B. Positive pressure
C. Cyclic replacement
D. First in, first out

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, pages 645-646.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 575.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 416.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, pages 645-646.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 575.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 416.
Answer: B

59. The normal concentration of oxygen in the earth's atmosphere is _____ percent.

A. 21 B. 16 C. 25 D. 78

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 95.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 103.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 129 and 48.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 95.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 103.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 129 and 48.
Answer: A

60. If a gas has a vapor density greater than one when it escapes from its container:

A. it will rise.
B. its movement will be dependent on wind direction and speed.
C. its movement will be dependent on temperature.
D. it will sink and collect at low points.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 95.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 97.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 141.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 95.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 97.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 141.
Answer: D

61. The acronym BLEVE stands for:

A. barometric level emergency valve enclosure.
B. bring local emergency vehicles early.

C. boiling liquid expanding vapor explosion.
D. boiling liquid emergency valve exit.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 105 and 112.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 774.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 142.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 105 and 112.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 774.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 142.
Answer: C

62. Ignition temperature is:

A. the term used to denote a place where heat is drained away from a source.
B. the temperature at which a material sustains combustion.
C. a catalyst in the breakdown of molecules.
D. a chemical reaction that absorbs heat.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 94 and 112.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 90.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 129.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 94 and 112.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 90.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 129.
Answer: B

63. What is the relationship between flammable limits and temperature?

A. There is no relationship between the two.
B. The temperature is inversely proportionate to flammable limits.
C. Flammable limits can change depending on temperature.
D. Flammable limits are not variable.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 105.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 105.
Answer: C

64. Which of the following materials has the greatest flammable limit range?

A. Carbon monoxide
B. Kerosene
C. Butane
D. Natural gas

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 94.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 105.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 94.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 105.
Answer: A

65. What is one term for the spread of fire from one floor to another via the exterior windows?

A. Laddering
B. Leap-frogging
C. Stack-effect
D. Trickling

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 408.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 408.
Answer: B

66. The size of an outside fire in the fully developed stage is dependent on:

A. oxygen.
B. temperature.
C. available fuel.
D. barometric pressure.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.8, 5.3.8(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 102.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 802.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 136.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.8, 5.3.8(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 102.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 802.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 136.
Answer: C

67. The size of an inside fire in the fully developed stage is dependent on:

A. fuel.
B. the supply of oxygen.
C. occupancy.
D. time of day.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 102.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 138.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 102.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 138.
Answer: B

68. Which of the following materials is a poor conductor of heat?

A. Wood B. Steel C. Aluminum D. Copper

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13, and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 97.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 94.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 132.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13, and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 97.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 94.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 132.
Answer: A

69. Thermal layering is:

A. a column of heat rising from a source.
B. a process in which the molecules of a liquid are liberated into the atmosphere at a rate greater than the rate at which the molecules return to a liquid.
C. the layered configuration of heat with higher temperatures at the upper levels and cooler temperatures at the lower levels.
D. decomposition or transformation of a compound caused by heat.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 101 and 112.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 117.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 140.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 101 and 112.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 117.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 140.
Answer: C

70. Which type of heat transfer is a major contributor to flashover?

A. Radiation B. Conduction C. Convection D. Nuclear

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 107.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 118.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 138.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.10, 5.3.10(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 107.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 118.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 138.
Answer: A

71. A Class A fire is fueled by:

A. electricity.
B. ordinary combustible materials.
C. liquids.
D. metals.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 96 and 215.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 110.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 134.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 96 and 215.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 110.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 134.
Answer: B

72. Positive-pressure ventilation is:

A. pulling smoke out
B. blowing fresh air in.
C. removing oxygen.
D. increasing thermal layering.

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, pages 645-646.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 575.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 416.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, pages 645-646.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 575.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 416.
Answer: B

73. Who should operate building HVAC systems to assist in ventilation?

A. The incident safety officer
B. Firefighters under direct supervision of the incident safety officer
C. Only building engineers or maintenance superintendents
D. Truck company personnel

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 579.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 579.
Answer: C

74. Which of the following is an advantage of positive pressure ventilation?

A. Hidden fires may be accelerated.
B. Exposed buildings can be pressurized to reduce fire spread into them.
C. Air recirculation, called churning, readily occurs.
D. Interior carbon monoxide levels may be increased if the exhaust from fans driven by internal combustion engines is allowed to enter.

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 578.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 578.
Answer: B

75. Which of the following statements regarding positive pressure ventilation (PPV) is correct?

A. When performing PPV, the exit opening must be a window.
B. When performing PPV, the exit opening must be larger than the entry point.
C. Once the PPV entry point is selected, the exit opening can be created on any of the three remaining sides of the building.
D. As long as the PPV pressure is higher inside the building, the smoke within is forced through the ventilation exit opening to the lower pressure zone outside.

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 653.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 575.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 417.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 653.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 575.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 417.
Answer: D

76. Which of the following is a **disadvantage** of positive pressure ventilation?

A. The velocity of air currents within the structure is minimal.
B. The placement of fans does not interfere with ingress or egress.
C. An intact structure is required.
D. Heat and smoke may be directed away from unburned areas or paths of exit.

Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 578.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 417.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11 and 5.3.11(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 578.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 417.
Answer: C

77. Which of the following tools is recommended for opening a thin sheet-metal roof?

A. Power saw
B. Sheet-metal cutters
C. Halligan tool
D. Both A and B are correct.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 566.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 566.
Answer: D

78. Of the following tools used in ventilation operations, a _____ would be **best** for sounding the roof.

A. nozzle
B. pickhead axe
C. power saw with extended chain bar
D. truss finder

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 657.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 560.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 420.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 657.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 560.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 420.
Answer: B

79. Which of the following tools is recommended for breaking through the ceiling below a vent hole?

A. Flathead axe handle
B. A pike pole
C. Adze end of a Halligan tool
D. Power saw with extended chain bar

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 583 and 585.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 429.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 583 and 585.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 429.
Answer: B

80. What is the term for those plastics that will melt under fire conditions?

A. Thermodynamic
B. Thermosupple
C. Thermoplastic
D. Isothermal

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, and 5.3.10(A)(B)
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 157.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, and 5.3.10(A)(B)
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 157.
Answer: C

81. The recommended method to prevent a backdraft explosion is _____ ventilation.

A. side
B. lateral
C. vertical
D. passive

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 546.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 140-141.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 546.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 140-141.
Answer: C

82. After a roof has been opened up, the firefighter must:

A. direct a hose line into the opening.
B. ensure the ceiling below the cut is opened.
C. make another opening on the opposite side of the pitched roof.
D. remove any natural roof openings.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 559.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 429.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 559.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 429.
Answer: B

83. When cutting through a roof, a firefighter should attempt to:

A. remove the ceiling joist in the ventilation hole.
B. cut a large circular hole.
C. make the opening square or rectangular.
D. stand to the downwind side.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 657-659.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 562-563.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 427.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 657-659.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 562-563.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 427.
Answer: C

84. Wood can be impregnated with _____ to make it **more** **difficult** to ignite and slower burning.

A. aluminum oxide B. mineral salts C. mineral spirits D. nothing

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 156.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 156.
Answer: B

85. In high-rise buildings, mushrooming on top floors is most likely if there is:

A. sufficient heat buildup to cause the upward movement of smoke and fire gases.
B. admission of sufficient oxygen to cause flashover.
C. an adequate roof opening to discharge smoke and fire gases.
D. enough water applied to cool the gases as they are leaving the seat of the fire.

Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.10 and 5.3.10(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 551.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.10 and 5.3.10(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 551.
Answer: A

86. When done properly, trench ventilation:

A. will help prevent horizontal fire spread.
B. will require the use of more water for fire suppression.
C. consists of three separate holes cut in a U shape.
D. will prevent the normal vertical spread of fire.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 660 and 664.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 567.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 432.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 660 and 664.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 567.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 432.

Answer: A

87. An important safety precaution that should be practiced when working on a roof is to:

A. cut all guy wires to prevent tripping over them.
B. provide a secondary means of escape.
C. have more than two firefighters on the roof at all times.
D. tie oneself to the roof ladder.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 665.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 558-559.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 420.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 665.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 558-559.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 420.

Answer: B

88. Directing fire streams into ventilation openings can _____ the ventilation process.

A. defeat B. assist C. supplement D. enhance

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 660.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 569.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 660.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 569.

Answer: A

89. When cutting through a roof, a firefighter should avoid:

A. cutting through joists, rafters, or trusses.
B. making one large opening.
C. using a power saw.
D. removing the built-up roof material prior to cutting.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 658.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 558.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 427.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 658.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 558.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 427.

Answer: A

90. When a backdraft situation exists in a building, which of the following actions will **most** **likely** reduce the probability of an explosion?

A. Opening a window on the windward side and directing a fog stream into the window
B. Ventilating the building at its highest point
C. Opening a door on the leeward side
D. Opening a door or window on opposite sides of the building simultaneously

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 546.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 405.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 546.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 405.

Answer: B

91. One application that uses laminated wood instead of solid lumber is:

A. short, straight beams.
B. manufactured curved beams.
C. stair tread risers.
D. stair treads.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 155.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 155.

Answer: B

92. When exposed to intense heat, a lightweight metal truss can:

A. maintain its structural integrity.
B. often contain a fire to a specific area.
C. be expected to fail in 5 to 10 minutes.
D. be expected to support firefighting operations for at least 20 minutes.

Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.10 and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 660.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 156.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.10 and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 660.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 156.
Answer: C

93. Directing fire streams downward through roof openings can cause the heat and smoke to be:

A. used as an advantage in fire extinguishment.
B. cooled off and to mushroom throughout the fire building.
C. discharged to the leeward openings.
D. forced back into the building, possibly injuring occupants and firefighting personnel.

Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.10 and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 660.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 569.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.10 and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 660.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 569.
Answer: D

94. Trench ventilation operations must be completed before:

A. fire attack.
B. the fire reaches the smoldering stage.
C. the fire reaches the trench.
D. extinguishment begins.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 660.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 567.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 433.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 660.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 567.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 433.

Answer: C

95. The roof type on which it is **most difficult** to operate is the _____ roof.

A. mansard B. shed C. gambrel D. arched

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 565.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 565.

Answer: D

96. When opening roofs, which of the following **is not** a recommended safety practice?

A. Utilizing natural openings
B. Cutting large holes rather than small ones
C. Insuring that main structural supports are not cut
D. Standing on the leeward side of the hole while working

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 655-658.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 558.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 429.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 655-658.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 558-560 and 562.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 429.

Answer: D

97. Trench ventilation is sometimes referred to as _____ ventilation.

A. strip B. top-side C. mechanical D. horizontal

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 660.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 567.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 660.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 567.

Answer: A

98. The **best** tool to use in initiating ventilation of a tile/slate roof is a:

A. reciprocating saw.
B. power saw.
C. pry bar.
D. sledge hammer.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 564.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 564.
Answer: D

99. A power saw should be started on the ground to ensure operation. Before hoisting or carrying to the roof, it should be:

A. refueled and the blade tightened.
B. shut off.
C. tested on available material.
D. cooled for safety and handling.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 597.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 562.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 427.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 597.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 562.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 427.
Answer: B

100. When ventilating through a sky light containing wired glass, it is considered **best** to create the opening by:

A. removing the frame.
B. breaking out the glass at either end.
C. using a power saw to cut around the perimeter.
D. breaking out all the glass with a flat-head axe.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 653.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 561.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 653.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 561.
Answer: A

101. When opening a roof, stand _____ the cut.

A. above
B. below
C. on the windward side of
D. on the leeward side of

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 652.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 558.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 427.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 652.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 558.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 427.
Answer: C

102. From a life safety point of view, the advantage(s) of proper ventilation for building occupants is/are that it:

A. improves visibility.
B. reduces the danger of backdraft explosions.
C. removes toxic smoke.
D. All of the above.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 631.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 541.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 405.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 631.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 541.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 405.
Answer: D

103. The phenomenon by which heat, smoke, and fire gases will travel upward to the highest point and become trapped, accumulate, bank down, and spread out laterally is known as:

A. backdraft. B. mushrooming. C. flashover. D. buoyancy.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 551 and 544.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 403.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 551 and 544.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 403.
Answer: B

104. Ventilation is the:

A. act of gaining access to secured buildings or areas.

B. cooling of combustible gases below their flash points.
C. planned removal of pressure, heat, smoke, and gases through predetermined paths.
D. removal of smoke and gases from an enclosed area through undetermined paths.

Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 630.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 541.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 403.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 630.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 541.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 403.
Answer: C

105. Ventilation should occur:

A. only if the fire is endangering civilian life safety.
B. at all structure fires.
C. only at structure fires where the fire is on the top floor.
D. only at structure fires where the building will be a total loss.

Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 631.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 541-542.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 631.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 541-542.
Answer: B

106. Smoke and heat collects at a structure starting from the:

A. lowest point. B. windward side. C. highest point. D. leeward side.

Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 632.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 550.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 405.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 632.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 550.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 405.
Answer: C

107. The two types of horizontal ventilation are:

A. natural and mechanical/forced.
B. hydro and electric.
C. manual and mechanical.
D. leeward and windward.

Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 643-644.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 547.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 411.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 643-644.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 547.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 411.
Answer: A

108. There are _____ types of standard building construction.

A. five
B. seven
C. three
D. eight

Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.10 and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 393.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 146.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 648.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.10 and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 393.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 146.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 648.
Answer: A

109. Type I is _____ construction.

A. noncombustible
B. heavy timber
C. ordinary
D. fire resistive

Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.10 and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 393.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 146.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 648 and 157.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.10 and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 393.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 146.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 648 and 157.
Answer: D

110. _____ construction is often is often used in mill construction.

A. Frame
B. Ordinary
C. Heavy timber
D. Noncombustible

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 397.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 148.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 160.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 397.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 148.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 160.
Answer: C

111. The **<u>most</u> <u>common</u>** type of construction material in North America is:

A. corregated metal. B. steel. C. masonary. D. wood.

Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 390 and 398.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 141.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 160.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A)(B), 5.3.11 and 5.3.11(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 390 and 398.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 141.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 160.
Answer: D

112. What will happen to gypsum board that is exposed to fire for a prolonged time?

A. It will fail.
B. It will spall.
C. It will discolor, only.
D. Nothing whatsoever.

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, and 5.3.10(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 145.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 155.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, and 5.3.10(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 145.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 155.
Answer: A

113. Which of the following statements regarding trench cuts is **<u>incorrect</u>?**

A. The trench cut is an offensive action.
B. The trench cut promotes vertical air flow.
C. It is not opened until the entire cut is complete.
D. It is made using any available building feature.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)

Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 660 and 664.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 567.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 432.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 660 and 664.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 567.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 432.
Answer: A

114. A type of wood framing that has vertical channels going from floor to floor, allowing a fire to travel uninterrupted is a _____ frame.

A. platform B. open C. balloon D. box

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, 5.3.10(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 398.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 553-554, Figure 11.18.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 162.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, 5.3.10(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 398.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 553-554, Figure 11.18.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 162.
Answer: C

115. The weight of the building materials and any part of the building permanently attached or
built in is the definition of a(n) _____ load.

A. impact B. fire C. design D. dead

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 385 and 410.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 175.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 385 and 410.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 175.
Answer: D

116. A load the engineer planned for, or anticipated, in the building design is the definition of
a(n) _____ load.

A. concentrated B. impact C. design D. dead

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 386 and 410.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 386 and 410.
Answer: C

117. A load perpendicular to the cross section of the supporting element that does not pass through the center of the mass is a(n) _____ load.

A. eccentric B. torsion C. undesigned D. axial

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 386.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 386.
Answer: A

118. At _____°F, the length of a steel structural member will begin to elongate.

A. 800 B. 1100 C. 1400 D. 1000

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, 5.3.10(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 390-391.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 143.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 154 and 169.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, 5.3.10(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 390-391.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 143.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 154 and 169.
Answer: D

119. Steel performs well under:

A. direct flame impingement.
B. corrosive conditions.
C. compression.
D. exposure to high heat.

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 390.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 154.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 390.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 154.
Answer: C

120. Concrete has excellent _____ strength when it cures.

A. shear B. compressive C. torsional D. tensile

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 391.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 144.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 154.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 391.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 144.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 154.
Answer: B

121. Walls of masonry construction have _____ lateral stability.

A. excellent B. adequate
C. very little D. very good load-bearing

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, 5.3.10(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 391.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, 5.3.10(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 391.
Answer: C

122. The **most common** type of building material in use today is:

A. steel. B. wood. C. concrete. D. plastics.

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 390.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 141.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 155.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 390.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 141.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 155.
Answer: B

123. Occupancies are usually broken down into five basic areas. Which of the following **is not** one of those areas?

A. Residential B. Business C. Industrial D. Fire resistive

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)

Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 401.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 650 and 656.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 401.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 650 and 656.
Answer: D

124. A _____ is a connecting plate used in truss construction that can be made of flat steel stock, light gauge metal, or plywood.

A. joint B. gusset plate C. column D. joist

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11, 5.3.11(A), 5.3.10 and 5.3.10(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 404.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 139 and 156.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 423.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11, 5.3.11(A), 5.3.10 and 5.3.10(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 404.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 139 and 156.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 423.
Answer: B

125. Under what conditions will gypsum burn?

A. It will burn under the same conditions as wood.
B. It will burn only if fanned with room air.
C. Only in an atmosphere of pure oxygen
D. It will not burn under any conditions.

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, and 5.3.10(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 145.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 155.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, and 5.3.10(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 145.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 155.
Answer: D

126. For firefighters working in or around a structure, a parapet wall presents what type of hazard?

A. Minimal access hazard
B. Extreme collapse hazard
C. Wall failure will cause the adjacent structure to fall
D. Minimal electrical hazard

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, 5.3.10(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 406.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 154.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, 5.3.10(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 406.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 154.
Answer: B

127. The fire service must be aware that synthetic materials:

A. can overwhelm a sprinkler system.
B. are found in interior and exterior finish work.
C. produce large amounts of toxic gas when burned.
D. can result in spontaneous combustion.

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 783.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 783.
Answer: C

128. What is one warning signal of possible backdraft conditions?

A. Glass smoke-stained and blackened due to heavy carbon deposits from the smoke.
B. Smoke observed pouring out a burned-through opening in the roof
C. Front door unaccountably wide open
D. Upper windows observed to be open or shattered

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 637.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 124.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 140.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 637.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 124.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 140.
Answer: A

129. The basic shape of the rigid framework of the truss is a(n):

A. square. B. rectangle. C. triangle. D. oval.

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)

Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 403.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 158.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 422.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 403.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 158.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 422.
Answer: C

130. A chord is:

A. a beam or joist.
B. the main member of a truss, the top or bottom structural element.
C. a framing member that supports floor or roof decking.
D. a large structural member used to support beams or joists.

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 403.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 155.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 403.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 155.
Answer: B

131. What effect does humid, rainy, or foggy weather have on smoke?

A. It allows the smoke to rise out of the building.
B. It prevents the smoke from rising out of the building.
C. It causes the smoke to change color.
D. It helps the smoke from a chimney to rise in a column.

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 671.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 671.
Answer: B

132. When performing roof ventilation, the primary hole should be cut:

A. directly over the fire, if possible.
B. as far away from the fire as possible.
C. directly in the firefighters' escape path.
D. as close to the edge of the roof as practical.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 656.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 544.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 424.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 656.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 544.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 424.
Answer: A

133. Which of the following roof structures provide(s) quick and effective initial ventilation?

A. Scuttle covers B. Roof level skylights C. Hatches
D. All of the above. E. F.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 655 and 656.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 560-561.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 425.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 655 and 656.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, pages 560-561.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 425.
Answer: D

134. When performing vertical ventilation, the most effective, quickest, and most efficient way to get a larger opening is by using the _____ cut.

A. trench B. triangular C. expandable D. lower

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 657.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 657.
Answer: C

135. The term for the open space between the ceiling of the top floor and the underside of the roof of a building is the:

A. roof chase. B. cockloft. C. head space. D. mantle.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 641.

IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 138.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 439.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 641.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 138.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 439.
Answer: B

136. **Modern** wood-frame construction uses a technique that builds one floor at a time and inserts a plate between each floor that acts as a fire stop. This technique is called:

A. flitch-plate. B. platform-frame. C. balustrade. D. awning.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 398.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 140.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 162.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 398.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 140.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 162.
Answer: B

137. What does vertical ventilation require that horizontal ventilation does not?

A. Positive-pressure fans
B. Openings in the roof or highest part of the building
C. Negative-pressure fans
D. Airtightness everywhere but the vent opening

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 648.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 556.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 411.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 648.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 556.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 411.
Answer: B

138. The term that refers to how a building is used is:

A. ownership. B. occupancy. C. design type. D. residence.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 401.

Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 175.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 401.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 175.
Answer: B

139. Type V construction is:

A. fire resistive.
B. wood frame.
C. all masonry.
D. masonry and synthetics.

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10 and 5.3.10(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 398.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 149.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 160.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, page 398.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 149.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 160.
Answer: B

140. What danger is suggested by the observation of smoke puffing in and out of a structure?

A. Impending structural collapse
B. The presence of backdraft conditions
C. Weak structural roofing members
D. Untempered, unreinforced glazing in windows

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, pages 637 and 639.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 124.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 140.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
Delmar, Firefighter's Handbook, 3rd Edition, pages 637 and 639.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 124.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 140.
Answer: B

141. When trapped moisture in concrete is heated to steam and expands, causing parts of the concrete to break away, this is known as:

A. delamination. B. depolymerizing. C. spalling. D. spation.

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, page 391.

IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 140.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 154.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, page 391.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 140.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 154.
Answer: C

142. What does the observation of a steel beam bending under fire suggest?

A. Nothing, this is normal and it will bend back when it cools.
B. Imminent failure
C. Imminent ignition
D. Underway release of toxic ferrous oxalate.

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 390-391.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 143.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 154.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, and 5.3.10(A)(B)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 390-391.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, page 143.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 154.
Answer: B

143. The observation of glass blocks in a wall tell the fire fighters that:

A. there is an automatic sprinkler system in that room.
B. there is a skylight in that room.
C. the wall has not been subjected to fire.
D. the wall is not load-bearing.

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, and 5.3.10(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 145.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 155.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, and 5.3.10(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 145.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 155.
Answer: D

144. While no exact temperature is associated with flashover, a range from approximately _____ degrees Fahrenheit is widely accepted.

A. 400-900 B. 900-1200 C. 1200-1500 D. 1500-1900

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 120.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 137 and 405.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 120.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 137 and 405.
Answer: B

145. Which of the following is another name for a Lamella arched roof?

A. Bowstring truss arched roof
B. Buttressed arched roof
C. Parapet arched roof
D. Trussless arched roof

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 564.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 564.
Answer: D

146. Which of the following describes an opening sometimes cut in a roof between a trench cut and the fire?

A. Kerf cut
B. Heat hole
C. Louver cut
D. Inspection cut

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 567.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 567.
Answer: B

147. Which of the following most accurately describes a Kerf cut?

A. A small opening that will be enlarged once the rafters are located.
B. A single cut the width of the saw blade made in a roof to check for fire extension.
C. Sometimes called a center rafter cut.
D. A rectangular exit opening cut in a roof, allowing a section of roof deck to be tilted.

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 562.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 424-425.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 562.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 424-425.
Answer: B

148. Which of the following **is not** a type of opening used in vertical ventilation operations?

A. Kerf cut
B. Inspection/evaluation cut
C. Louver cut
D. Higbee cut

Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 562.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 424-427.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12 and 5.3.12(A)(B)
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 562.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, pages 424-427.
Answer: D

149. The usual cause of collapse of open web steel joist is the:

A. amount of heat generated by the fire in a structure.
B. poor method of construction.
C. impact load of firefighters on the roof.
D. All of the above

Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, 5.3.10(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 404.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 156.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 422.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.12, 5.3.12(A), 5.3.10, 5.3.10(A), 5.3.11 and 5.3.11(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, page 404.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 156.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 422.
Answer: A

150. Heat can travel throughout a burning building by one or more of the following methods:

A. conduction, radiation, and convection.
B. extension, conduction, and exposure.
C. convection, extension, and expansion.
D. conduction, radiation, and expansion.

Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)
Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 97-99.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 93.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 132.

Approved by Committee - 12-08-07
Reference: NFPA 1001, 5.3.11, 5.3.11(A), 5.3.12, 5.3.12(A), 5.3.13 and 5.3.13(A)

Session 5 ans

Delmar, Firefighter's Handbook, 3rd Edition, 1st Printing, pages 97-99.
IFSTA, Essentials of Fire Fighting and Fire Department Operations, 5th Edition, 1st Printing, page 93.
Jones and Bartlett, Fundamentals of Fire Fighter Skills, 2nd Edition, 1st Printing, page 132.
Answer: A