

FIRE ACADEMY

Candidate Preparation

Questions Pertaining to Probationary Firefighter Reading Assignments (Cycles 1-26)

Cycle 11

Choose the answer that is most correct

Chapter 20: Foam/Car Fires/Alt Fuels

- 1) Which of the following is considered firefighting foam that is resistant to the detrimental effects of water-soluble substances such as alcohol and polar solvents?
 - A) Aerated Foam
 - B) Aqueous Film Forming Foam (AFFF)
 - C) Alcohol Foam
 - D) Hi-Ex Foam

- 2) Which of the following is a foam that is a combination of synthetic, fluorinated, surfactant foaming agents which spread quickly, providing a film across the surface of hydrocarbon fuels?
 - A) Aerated Foam
 - B) Aqueous Film Forming Foam (AFFF)
 - C) Alcohol Foam
 - D) Hi-Ex Foam

- 3) Which of the following is correct regarding non-aerated foam?
 - A) The foam blanket that is produced by a non-aerating nozzle is not as stable as one that is produced with aerated foam.
 - B) Non-aerated foam is produced by a nozzle that forces air through the foam solution.
 - C) A foam nozzle that is non-aerating generally has a less reach than an aerating nozzle.

- 4) A foam chute is a plastic sleeve used to deliver which type of foam from the generator to the fire?
 - A) Aqueous Film Forming Foam (AFFF)
 - B) Aerated Foam
 - C) Hi-Ex Foam
 - D) Alcohol Foam

- 5) A proportioning device that employs a venturi action to pick up foam concentrate from a container and introduce it into a stream of water thus producing foam solution is called a (n)?
- A) Educator
 - B) Aerator
 - C) Venturi
 - D) Hi-Ex
- 6) The ability of a foam blanket to resist direct flame contact is called?
- A) Burn-back resistance
 - B) Drainage time
 - C) Flashback resistance
 - D) Fuel shedding
- 7) The ability of a foam blanket to resist ignition by flammable vapors coming in contact with a hot surface or a spark is called?
- A) Burn-back resistance
 - B) Drainage time
 - C) Flashback resistance
 - D) Fuel shedding
- 8) The ability of foam to resist saturation by hydrocarbons is called
- A) Burn-back resistance
 - B) Drainage time
 - C) Flashback resistance
 - D) Fuel shedding
- 9) How many of the following are considered hydrocarbons? (more than one)
- A) Methane
 - B) Butane
 - C) Ethane
 - D) Diesel
 - E) Gasoline
- 10) The Department presently uses the following low expansion foams. (More than one correct)
- A) AFFF
 - B) AR-AFFF
 - C) Protein Foam
 - D) Universal Gold
 - E) Hi-Ex Foam

True or False (Question 12-15)

- 11) _____ Methyl Tertiary Butyl Ether (MTBE) is a slightly polar additive, added to gasoline to meet the Federal Air Standards
- 12) _____ Surfactant is a chemical that lowers the surface tension of a gas.
- 13) _____ Hi-Ex foam concentrate is a detergent based liquid which when mixed with water and deployed with an aerating device produces lightweight foam with an expansion ratio from 200/1 to 1000/1.
- 14) _____ Protein Foam produces fair to good burn back resistance which is why it is still used by the FDNY.

Matching (Questions 15-17)

It is imperative that the correct foam concentrate is used for the situation encountered. To ensure that foam concentrates are not mixed, containers are color-coded (banded) around the top. Match the following foams to their color-coded band.

15) AR-AFFF	A) Yellow
16) AFFF	B) Red
17) Hi-Expansion	C) Black

Chapters 16: Taxpayer Tactics

- 1) The duties of the 1st Ladder company to arrive inside team (Officer, Can and Forcible Entry FF) for a Taxpayer store fire include all of the following except:
- A) Provide and maintain an unobstructed path through which the hose line can advance.
 - B) Open ceilings, ducts and partitions
 - C) Ventilate the roof
 - D) Search and removal of victims
- 2) The Inside team tool assignments, for a fire in a store, include all of the following except:
- A) 6' hook
 - B) Pressurized water extinguisher
 - C) Maul and halligan
 - D) Hydra ram
 - E) 6' halligan hook

- 3) Roof FF position, duties and tool assignments for a Taxpayer store fire are correct in all of the following except:
- A) Perform vertical ventilation (open skylights and scuttles)
 - B) Access to roof of fire building via portable ladder
 - C) Tool assignment is the 6' halligan hook and halligan
 - D) For fires above the cellar, the saw and halligan are taken

Chapters 12: Taxpayer Tactics

- 1) A fire in a taxpayer is usually a fast-spreading and difficult fire to control and extinguish. It calls for many hand lines stretched quickly to the proper locations to prevent a large loss. When heavy or medium fire conditions are encountered the initial lines should be _____.
- A) 1 $\frac{3}{4}$ "
 - B) 2 $\frac{1}{2}$ "
 - C) 2"
 - D) 3 $\frac{1}{2}$ "
- 2) For a fire in a cellar of a taxpayer, the Second engine company's responsibility include all of the following except:
- A) To control the first floor if the first engine company has advanced into the cellar via the interior cellar entrance.
 - B) Serve as a backup or protection line for the first engine company
 - C) Stretch into the cellar via the interior stairs or the outside entrance if the first unit's line has to control the first floor.
 - D) Supply a 3 $\frac{1}{2}$ " line to a tower ladder

Chapters 9: Taxpayer Tactics

- 1) Which of the following statements regarding Taxpayers is incorrect?
- A) The term "Taxpayer" is not defined or recognized in the building code. The term originally referred to the practice of real estate investors who, while holding land for speculation, resorted to minimal investment in construction to produce income to offset the cost of taxes.
 - B) These structures were usually of cheap and flimsy construction with little or no fire retarding features
 - C) Supermarkets and one-story shopping centers of more recent construction do not fit the above description but contain many of the inherent hazards associated with taxpayers
 - D) A taxpayer building is commonly taken to mean a business structure one or two stories in height. With areas varying from 20'x50' to areas of whole city blocks, the most common size being approximately 200'x200'

- 2) In what era were Taxpayers usually built larger in area but one tenant occupancies such as supermarkets, bowling alleys, restaurants and factories.
- A) Older type: Built up until the 1920's
 - B) Built from the 1920's into the 1960's
 - C) Newer types built since 1960's
- 3) In what era did Taxpayers have original ceilings made of tin, with as many as two or three suspended ceilings found due to renovations?
- A) Older type: Built up until the 1920's
 - B) Built from the 1920's into the 1960's
 - C) Newer types built since 1960's
- 4) Which of the following is incorrect regarding Newer types of taxpayers built since 1960's?
- A) May have 2nd floor with separate occupants such as large meeting halls, Dance halls, restaurants, etc. or may be broken up into small offices
 - B) Combustible construction material has been reduced
 - C) Steel bar joists used to support the floors and roofs in lieu of wood beams
 - D) Floor and roof may be concrete poured on top of metal decking
- 5) Which of the following statements regarding Taxpayers is incorrect?
- A) In some cases, due to variances sprinkler systems may only be found in cellar areas.
 - B) A Backdraft is possible when a fire burns within a structure, particularly a sealed or closed occupancy and the fire is unable to vent itself to the outer air, the available air supply within the structure is used up quickly and the flames subside. A high heat condition, with combustible gases and highly heated contents may now be present in the structure. All that is missing is a source of air or oxygen to create an explosive fire.
 - C) Canopies or marquees are extensions that are supported by cables which go through the wall and are attached inside the building to non-combustible members in the cockloft.
 - D) Fires in cockloft can weaken attachments or supports causing sudden canopy or marquee collapse, along with long section of parapet wall without any warning.
- 6) Cast iron columns are unpredictable and fail on the average in about _____ minutes.
- A) 10
 - B) 20
 - C) 30
 - D) 40
- 7) Cocklofts are the common area extending over all the stores in the structure. The height of the cockloft varies and can be found in which one of the following choices?
- A) 2'-3'
 - B) 4'-6'
 - C) 4" to more than 6'
 - D) 4"-6"

- 8) In terms of collapse possibilities, which of the following structural members will cause the most damage if failure occurs?
- A) Girder
 - B) Column
 - C) Beam
 - D) Deck
- 9) Which one of the following has a greater effect on collapse: impact load or the same weight carried as a stationary load?
- A) Impact load
 - B) Stationary load
- 10) Which of the following may be causes of collapse during fire operations in Taxpayers? (more than one answer)
- A) Backdrafts blowing out walls or floor
 - B) Heating of unprotected structural members.
 - C) Presence of water absorbent materials such as rags, paper, clothing which increase floor loads when wet.
 - D) Water, ice or snow loads on the roof
 - E) Vibration or movement in or near a weakened building
- 11) Warning signs that will signal a potential structural collapse include all of the following except?
- A) Heavy body of fire which has been burning out of control for 15 minutes or more
 - B) Walls leaking smoke or water
 - C) Cracking or groaning noises which may indicate strain being placed on structural members.
 - D) Presence of heavy equipment or signs on the roof
- 12) Which type of roof is inherently spongy?
- A) Gable
 - B) Inverted
 - C) All flat roofs
 - D) Built up roof
- 13) Some characteristics of New type construction (supermarkets, etc.) include all of the following choices except?
- A) Many are built on concrete slab foundation
 - B) For the most part roofs are constructed of "Bar Joists"
 - C) Partition walls are well constructed of steel and aluminum studs which employs gypsum blocks and sheathing as a bearing or non-bearing wall system
 - D) Decorative metal cornices or small signs, attached to the front wall sometimes provide access to the cockloft
- 14) **True or False:** In both the older and newer Taxpayer, exit facilities are poor.

- 15) In all Taxpayer construction, fire can spread both horizontally and vertically. Which of the following are avenues for fire spread? (more than one answer)
- A) Via common cockloft
 - B) Through flimsy partitions
 - C) "I" beams
 - D) Party walls
 - E) Via ducts
 - F) Convection (mushrooming at upper levels)
 - G) Via voids
- 16) **True or False:** The most common type of floors are tongue and groove boards, or plywood supported by wood floor joists.
- 17) An exceptionally hazardous condition is when _____ is placed over wood joist floor construction.
- A) Terrazzo
 - B) Firefighters
 - C) Stock
 - D) Refrigeration machines
- 18) Which of the following occupancies has the potential to contain many different aerosol sprays, refrigerants, compressed cylinders, lye in containers and other corrosives and caustics?
- A) Drug stores
 - B) Paint stores
 - C) Supermarkets
 - D) Bakeries
- 19) Mezzanine areas may be found in some Taxpayers. Characteristics can be found in all of the following except?
- A) Their location, area and use will differ. Most cases will be for storage of goods.
 - B) Can be offices which will be predominant in supermarkets and factories
 - C) The load bearing components will be of light construction
 - D) The height of the ceilings will be below average
 - E) In the majority the area will be enclosed
- 20) In Taxpayers, there may be as many as _____ or _____ dropped ceilings found in a particular store.
- A) 1, 2
 - B) 2, 3
 - C) 3, 4
 - D) 4, 5

Chapter 3: Victim Removal via Aerial Ladder

- 1) Which of the following is incorrect regarding aerial ladder placement?
 - A) When placing aerial ladder to roof extend the ladder so that the tip is at least 5' above the point where the ladder comes in contact with the building.
 - B) When placing ladder to a window, the tip should be less than 6" over the window sill.
 - C) When placing alongside a fire escape, ladder should rest against building wall with the tip at least 3' above the balcony railing.
 - D) The aerial ladder is not to be placed on a fire escape railing.

- 2) When placing aerial ladder to a window, the recommended distance of the tip from the objective is 2-6". In case of rescue, what distance should be used?
 - A) No distance (place directly on sill)
 - B) 2" positioning
 - C) 3" positioning
 - D) 6" positioning

- 3) Which of the following is incorrect when climbing or descending the aerial ladder?
 - A) Member should always face aerial when climbing or descending.
 - B) Eyes should look up or forward.
 - C) Stand on rung with heel of foot.
 - D) Member must have one hand in contact with aerial at all times unless secured to aerial with leg lock or with personal harness hook to rung.
 - E) On steep angles it may be necessary to grab rungs.

Chapter 5: PSS Bag Repacking

True or False (Questions 1-7)

- 1) The PSS bag is laid out on a clean flat work area on its back with bag opening facing towards member.
- 2) Place the figure 8 stopper knot on the left edge of flap closure just above rope storage section.
- 3) Weave rope to opposite edge of flap and return to the right edge, folding the rope to the previous row. Continue this process making five flat rows. Slide five folds into storage section of bag.
- 4) Repeat this process until approximately 18 inches of rope with EXO remain.
- 5) Be sure to maintain 8 inches of rope between eye hook and EXO.
- 6) The rope shall have a 12-inch loop between the "U" shaped rope guide and the EXO.
- 7) The EXO should be placed flat side down on top of the rope separation flap with the handle of the EXO facing away from the body if the bag were mounted on the waist band of the personal harness.

Cycle 11 Answer Key

Chapter 20: Foam pages 1-2

1. C (CH20 Alcohol Foam) pg. 16
2. B (CH20 AFFF) pg. 16
3. A (CH20 Non-Aerated) pg. 18
4. C (CH20 Foam Chute) pg. 17
5. A (CH20 Eductor) pg. 16
6. A (CH20 Burn-Back) pg. 16
7. C (CH20 Flashback) pg. 17
8. D (CH20 Fuel Shedding) pg. 17
9. All (CH20 Hydrocarbons) pg. 17
10. A, B, & D (CH20 sec 2.3) pg. 2
11. T (CH20 MTBE) pg. 18
12. F (CH20 Surfactant) pg. 18
13. T (CH20 Hi-Ex Foam) pg. 17
14. F (CH20 sec 2.3) pg. 2
15. B (CH20 sec 4.1) pg. 5
16. C (CH20 sec 4.1) pg. 5
17. A (CH20 sec 4.1) pg. 5

Chapter 16: Taxpayer Tactics

1. C (CH16) pg. 23
2. E (CH16) pg. 23
3. C (CH16) pg. 24

Chapter 12: Taxpayer Tactics

1. B (CH12) pg. 139
2. D (CH12) pg. 139

Chapter 9: Taxpayer Tactics

1. D (CH9) pg. 36
2. B (CH9 sec 2) pg. 37
3. A (CH9 sec 1) pg. 36
4. A (CH9 sec 2-3) pg. 37
5. C (CH9) pg. 37-38
6. C (CH9) pg. 39
7. C (CH9) pg. 39
8. B (CH9) pg. 39
9. A (CH9) pg. 40
10. All (CH9) pg. 40
11. A (CH9) pg. 41
12. B (CH9) pg. 41
13. D (CH9) pg. 42, pg. 36 sec 1
14. True (CH9) pg. 42

15. All (CH9) pg. 43
16. True (CH9) pg. 43
17. A (CH9) pg. 43
18. C (CH9) pg. 44
19. E (CH9) pg. 45
20. B (CH9) pg. 46

Chapter 3: Victim Removal via Aerial Ladder

1. C (CH3) pg. 33
2. B (CH3) pg. 33
3. C (CH3) pg. 34

Chapter 5: PSS Bag Repacking

1. False (CH5) pg. 119
2. False (CH5) pg. 119
3. True (CH5) pg. 119
4. True (CH5) pg. 119
5. True (CH5) pg. 119
6. False (CH5) pg. 119
7. True (CH5) pg. 120