

Ventilation

Name \_\_\_\_\_

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) Which of the following is NOT a life-safety reason for fireground ventilation? 1) \_\_\_\_\_
  - A) It expedites search and rescue operations.
  - B) It reduces interior temperature.
  - C) It reduces damage caused by water.
  - D) It provides an escape path for the steam when water is vaporized.
  
- 2) Density of the smoke \_\_\_\_\_ the amount of suspended particles. 2) \_\_\_\_\_
  - A) decreases with
  - B) is not affected by
  - C) increases with
  - D) changes color with
  
- 3) Responsibilities of the leader on the roof include all of the following EXCEPT: 3) \_\_\_\_\_
  - A) ensuring the safety of all personnel who are assisting in the opening of the building.
  - B) ensuring the team stays on the roof throughout fire suppression operations.
  - C) ensuring that the roof is safe to operate on.
  - D) ensuring that only the required openings are made.
  
- 4) All of the following are warning signs of an unsafe roof condition EXCEPT: 4) \_\_\_\_\_
  - A) smoke coming from the roof.
  - B) fire coming from the roof.
  - C) hard asphalt.
  - D) "spongy" roof.
  
- 5) Pitched roofs: 5) \_\_\_\_\_
  - A) do not usually involve rafters or trusses.
  - B) have much different procedures for opening than flat roofs.
  - C) are not usually very steep.
  - D) have a more pronounced downward slope than flat roofs.
  
- 6) Which of the following statements about trench ventilation is LEAST accurate? 6) \_\_\_\_\_
  - A) The opening cannot be created ahead of the advancing fire.
  - B) It is used to stop the spread of fire in a long, narrow structure.
  - C) A large ventilation opening is often cut between the trench cut and the fire.
  - D) It is performed by cutting a trench that is at least 4 feet (1.2 m) wide.
  
- 7) Which of the following is NOT a way in which basement ventilation can be accomplished? 7) \_\_\_\_\_
  - A) Interior vertical ventilation can be performed using natural paths from the basement.
  - B) Vertical ventilation can be performed by cutting a trench alongside the basement and breaking through the wall.
  - C) If the basement has windows, horizontal ventilation can be applied.
  - D) Interior vertical ventilation can be performed by cutting a hole in the floor near a ground-level door or window.

- 8) Which of the following statements BEST describes negative-pressure ventilation? 8) \_\_\_\_\_
- A) It uses a high-volume fan to create a slightly higher pressure inside a building than that outside.
  - B) It uses fans to develop artificial circulation or enhance natural ventilation to expel smoke from a structure.
  - C) Fans work best if they exhaust in the opposite direction as the prevailing wind.
  - D) Fans pull air from the outside of the building to the interior.
- 9) Which of the following statements about hydraulic ventilation is LEAST accurate? 9) \_\_\_\_\_
- A) It is used to clear the room or building of smoke before a fire has been controlled.
  - B) It uses the air movement created by a fog stream to help draw products of combustion out of the structure.
  - C) It may be used in situations where other types of forced ventilation are unavailable.
  - D) It can be used to clear the building of heat and gases after a fire has been controlled.
- 10) Which of the following is a disadvantage of hydraulic ventilation? 10) \_\_\_\_\_
- A) It can only be used after positive-pressure ventilation has been used.
  - B) The operation may have to be interrupted when the nozzle team has to leave the area to replenish their air supply.
  - C) There may be a decrease in the amount of water damage within the structure.
  - D) It can only be used in freezing temperatures.
- 11) Which of the following is NOT an advantage of positive-pressure ventilation over negative-pressure ventilation? 11) \_\_\_\_\_
- A) Removal of smoke and heat from a structure or vessel is more efficient.
  - B) Hidden fires may not be accelerated and spread throughout the building.
  - C) Firefighters can set up positive-pressure ventilation without entering the smoke-filled environment.
  - D) The placement of fans does not interfere with ingress or egress.
- 12) All of the following are considerations affecting ventilation EXCEPT: 12) \_\_\_\_\_
- A) Is a RIC available?
  - B) Do fire and structural operations allow for ventilation at this time?
  - C) Is there a need for ventilation at this time?
  - D) Where is ventilation needed?
- 13) All of the following are safety precautions to observe when undertaking vertical ventilation EXCEPT: 13) \_\_\_\_\_
- A) check the wind direction with relation to exposures.
  - B) ensure that main structural supports are cut so full ventilation is attained.
  - C) make sure that a roof ladder (if used) is firmly secured over the peak of the roof before operating from it.
  - D) use lifelines, roof ladders, or other means to prevent personnel from sliding and falling off the roof.
- 14) Which of the following types of structures does NOT lend itself well to the application of horizontal ventilation? 14) \_\_\_\_\_
- A) Limited openings between the attack team and the upper opening
  - B) An involved floor of a multistoried structure below the top floor
  - C) A building with a daylight basement
  - D) A building in which the fire has reached the attic area

- 15) Which of the following statements about general ventilation considerations is MOST accurate? 15) \_\_\_\_\_  
A) A rectangular opening is easier to cut and to repair after the fire.  
B) A circular opening is easier to cut and to repair after the fire.  
C) Several smaller openings are easier than one larger opening.  
D) Several smaller openings are safer than one larger opening.
- 16) Which of the following factors should NOT reduce the effectiveness of vertical ventilation? 16) \_\_\_\_\_  
A) Fire streams directed into ventilation openings  
B) Burn-through of the roof, a floor, or a wall  
C) Improper use of forced ventilation  
D) Limited openings between the attack team and the upper opening
- 17) To perform hydraulic ventilation, a fog stream is set on a wide fog pattern that will cover \_\_\_\_\_ percent of the window or door opening from which the smoke will be pushed out. 17) \_\_\_\_\_  
A) 65 to 70                      B) 75 to 80                      C) 55 to 60                      D) 85 to 90
- 18) Which of the following statements BEST describes positive-pressure ventilation? 18) \_\_\_\_\_  
A) It uses a high-volume fan to create a slightly lower pressure inside a building than that outside.  
B) It uses fans to develop artificial circulation or enhance natural ventilation to expel smoke from a structure.  
C) Fans pull air from the inside of the building to the exterior.  
D) It uses a high-volume fan to create a slightly higher pressure inside a building than that outside.
- 19) To ensure an effective positive-pressure ventilation operation, all of the following actions can be taken EXCEPT: 19) \_\_\_\_\_  
A) keeping the size of the exit opening in proportion to the entry opening.  
B) avoiding creating horizontal openings by breaking glass or removing doors.  
C) making certain that the cone of air from the blower only partially covers the entry opening.  
D) taking advantage of existing wind conditions.
- 20) Flashover is the transition between the \_\_\_\_\_ and fully developed fire stages. 20) \_\_\_\_\_  
A) backdraft                      B) smoldering                      C) decay                      D) growth