Chapter 2

Safety

Section A: True/False

Directions: Write True or False on the blanks provided; if False, write the correct statement on the lines provided.

1. _____ Investigators usually arrive after the fire has been extinguished, so they are permitted to operate outside of the incident management system. (21)

2. _____ The site safety assessment is an ongoing process that continues until the end of the investigation. (23)

3. _____ No protective ensemble can protect an investigator from all hazards present at an incident scene. (25)

4. _____ A fire investigator must be thoroughly trained and knowledgeable about radiation emergencies before being involved in an investigation with this type of hazard. (29)

5. _____ There are severe respiratory hazards present, even after a fire is extinguished. (31)

6. _____ When transporting PPE after an incident, the garments should be transported in an open bag so they are allowed to air out. (36)

7. _____ Rehabilitation areas should be as close to the incident as possible so that an investigator can remain in eye contact. (36)

8. _____ If it becomes necessary to work alone at a scene, the investigator should communicate his or her location and status to their employer and/or local law enforcement or fire department. (36)

_____

_____

9. _____ Since investigators arrive after the main incident has ended, they are not likely to be exposed to biological hazards. (39)

_____

_____

10. _____ As the investigation is underway and debris is removed, structural stability and scene safety must be continually assessed. (39-40)

_____

_____

Section B: Fill in the Blank

Directions: Write the correct answer on the blanks provided.

1. The _____ should be held with all members of the investigative team and shall include hazards, precautions, PPE, communications, and each party's duty to keep everyone safe. (23)
2. An investigator could use _____ devices to detect and measure hazardous gases in the atmosphere. (28)
3. OSHA requires continuous air monitoring if a(an) _____ is used as respiratory protection. (24)
4. At an incident where biohazards are present, investigators should always use _____ protective gloves, coveralls, and shoe covers. (39)
5. When using portable interior scene lighting, investigators should be aware that the cords can pose _____ and _____ hazards. (42)
6. Perimeters are established around an incident scene to _____ and ensure scene security. (43)
7. After an incident is terminated, it is the responsibility of the LPG supplier or the _____ to turn the gas back on. (48)

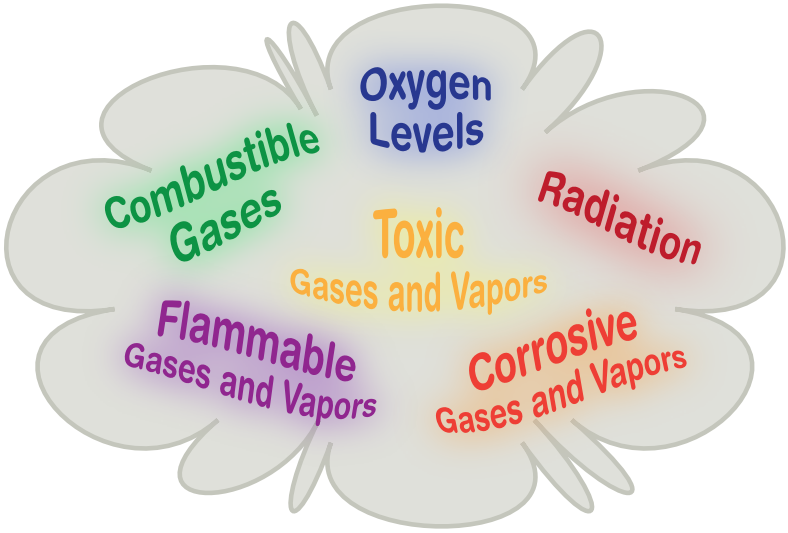
Section C: Picture Identification

Directions: Write the correct answers on the blanks provided.

Part I: Detection and Monitoring

Types of hazards that investigators monitor for are shown in the figure. List the hazards in the order that monitoring is generally performed. (28)

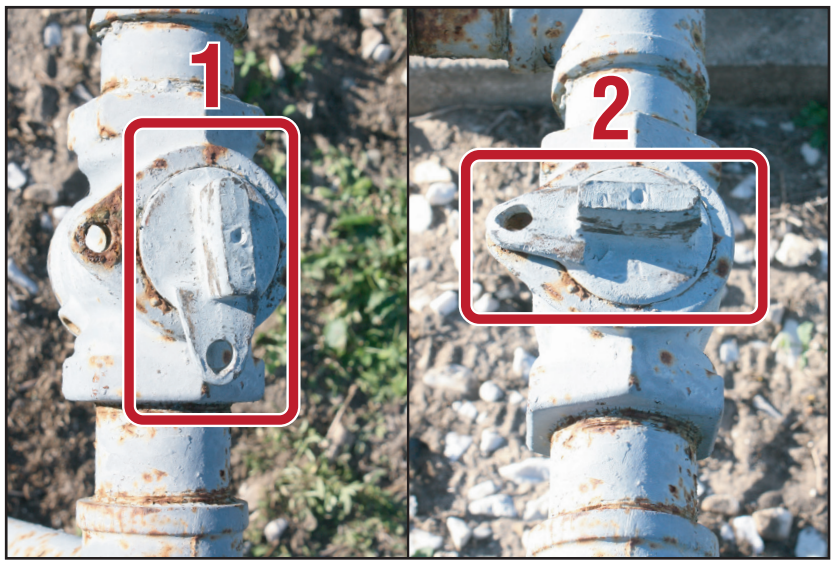
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____



Part II: Natural Gas Shutoff

Determine whether each photo shows that the natural gas is turned off or is still on. (46)

1. _____
2. _____



Section D: Matching

Directions: Write the correct answers on the blanks provided.

Part I: Types of Personal Protective Equipment

Match the type of PPE with the characteristics that best describe it. Each type of PPE may be used multiple times.

Type of PPE:

A. Structural fire fighting PPE

B. Coveralls

C. Helmets and hard hats

D. Face and eye protection

E. Hearing protection

F. Gloves

G. Boots

Characteristics:

_____ 1. Protects wearer from cuts, abrasions, and minor burns (26)

_____ 2. Must provide dexterity and protect against heat and punctures (26)

_____ 3. Should be water resistant and provide protection against punctures and crushing injuries (26)

_____ 4. Should have a NRR rating of 20 decibels (27)

_____ 5. Must conform to standards in NFPA 1971 and ANSI Z89.1 (26)

_____ 6. Provides protection in case of falling debris (26)

_____ 7. Can be provided by the SCBA facepiece (27)

_____ 8. Ear plugs and headsets are the most common types (27)

_____ 9. A disposable variety may be worn over clothing at fire scenes where crimes may have been committed, where additional precautions against cross-contamination are necessary (26)

Part II: Biohazard Guidelines

Each statement describes a potential guideline for working at incidents where biohazards are potentially involved. Label each guideline to tell whether it is a recommended guideline or if it is not a recommended guideline.

Choices:

A. Recommended

B. Not recommended

Potential Guidelines:

_____ 1. Ensure that exposed skin does not come in contact with contaminated surfaces when removing protective equipment. (39)

_____ 2. Do not eat or drink where bodily fluids are present. (39)

_____ 3. Burn all protective clothing after use in order to kill any pathogens that may remain. (39)

_____ 4. Place the decontamination station in the same vicinity as the biohazards so that no other areas are contaminated. (39)

_____ 5. Wear eye and face shield to protect against splashes or sprays from infectious materials. (39)

Section E: Multiple Choice

Directions: Write the correct answers on the blanks provided.

_____ 1. What should a fire investigator do first after arriving at an active fire scene? (21)

A. Check in with the incident commander
B. Stand by until all apparatus have left the scene
C. Begin photographing the exterior of the building
D. Help with other fireground duties if trained to do so

_____ 2. What should happen if site safety results are unsatisfactory? (23)

A. Results should be noted and reported to OSHA.
B. An additional investigator must be called in for backup.
C. The investigation must stop until safety concerns are addressed.
D. The investigator should redo the site safety assessment a second time.

_____ 3. What are two of the most important things to consider when choosing appropriate PPE for incident investigation? (24)

A. Weather and time of day
B. PPE cost and time of day
C. Anticipated hazards and size of the investigator
D. Anticipated hazards and atmospheric monitoring

_____ 4. Which type of device does not provide adequate protection for investigators at a fire scene? (31)

A. SCBA
B. N95 mask
C. Air purifying respirator
D. Multipurpose respirator

_____ 5. Which decontamination method involves brushing or scraping off a potentially hazardous substance? (34)

A. Dry decontamination
B. Wet decontamination
C. Routine decontamination
D. Chemical decontamination

_____ 6. If an investigator is assigned to a scene that involves the release of a hazardous chemical, what actions should the investigator take? (37)

A. Observe from a safe distance and wait for the area to be declared safe
B. Don appropriate gear and work the scene as usual
C. Request a hazmat team member to assist during the investigation
D. Leave the scene and do not return

_____ 7. At a scene that may involve hazardous materials, the priority for investigators is: (37)

A. self-protection.
B. evidence collection.
C. origin identification.
D. cleanup and recovery.

_____ 8. How can an investigator expect that a facility will be marked if it contains hazardous materials? (37-38)

A. There are three placarding systems that facilities may choose from, and all are described in the ERG.
B. Facilities use the same placarding system that is used for transporting hazardous materials in vehicles.
C. Facilities must comply with NFPA 704 marking system regulations unless they are military facilities.
D. There is not a standard system required for marking hazardous materials at facilities, so they may be marked in a variety of ways.

_____ 9. Gasoline-powered portable generators: (42)

A. are intrinsically safe.
B. should not be used during an investigation.
C. are preferable to other types of power supplies.
D. should be operated outside of the fire scene in an open area.

_____ 10. What action should you take if you feel threatened by a suspect at the scene? (43)

A. Involve law enforcement
B. Leave the scene and end the investigation
C. Turn the scene over to another investigator
D. Talk to the suspect and attempt to diffuse the situation

_____ 11. Which action would directly put an investigator in danger? (45)

A. Wearing rubber boots when live wires are present.
B. Walking in standing water while the electrical system is energized.
C. Using a digital camera at a scene where an explosion hazard exists.
D. Assuming that any wire at the scene still has energy flowing through it.

_____ 12. If you enter a structure and there is a distinct smell of rotten eggs (sulphur), it would most likely be evidence of: (46)

A. a natural gas leak.
B. an incendiary device.
C. multiple ignition sources.
D. damage to the electrical system.

Section F: Short Answer

Directions: Write the correct answers on the lines provided.

1. List five things that an investigator should note during a site safety assessment. (22-23)

_____

_____

2. What is the minimum level of PPE to be worn for incident investigation? (24)

_____

_____

_____

3. Why should investigators be cautious about wearing clothing made of nonfire-resistant synthetic materials? (33)

_____

_____

4. What factors must be taken into consideration when performing a site safety assessment? (33)

_____

_____

_____

_____

5. What are three ways to prevent contamination after working at an incident scene? (35-36)

_____

_____

_____

6. What action should you take if you encounter an unsafe lab, such as one where methamphetamine is produced? (37)

_____

_____

7. List five structural hazards that an investigator must be aware of when assessing scene safety. (41)

_____

_____

_____

_____

_____

Section G: Scenario

Directions: Answer the following questions based on the scenarios below.

Scenario 1 (37)

You arrive at an incident scene as firefighters are finishing their operations. The Incident Commander relays to you that the fire took place in a work shed behind the two-story residence. The fire was contained to the shed; it did not spread to the main residence or any exposures. During your initial safety assessment, you look through the open door and see stacks of unmarked jars, bottles, and cans that all contain an unknown substance. Some of the substance has spilled and pooled in a corner of the shed. An unusual smell is present, and you are concerned that the material may be hazardous. You notify the incident commander of your concerns.

1. What actions should you take next?

_____

_____

Scenario 2 (40)

You arrive at the scene of a two-story condominium fire. The fire is mostly contained to one unit, with some involvement in neighboring units. When you check in with the Incident Commander, you are informed that there are fatalities and the fire does not seem suspicious. The fire burned for almost an hour before being extinguished. The scene has been turned over to you for investigation. As you are about to begin your safety assessment of the scene, a bystander provides you with the photograph below. The photograph was taken during suppression operations.

Use the photograph and the information provided to you by the Incident Commander to make observations about the incident scene. For each safety consideration, provide a short description of what you observe. If possible, also tell how it may impact safety during investigation. There may be some safety considerations you are not able to observe from this photo alone. Note that in the table.

Safety Consideration	Observations
Building Construction	
Content Load	
Lightweight Building Materials	
Length of Burning Time	
Accumulating Water or Ice	
Parallel Chord Lightweight Truss Beams	
Special Conditions	
Exposed Steel	

Scenario 3 (48)

You are investigating an incident involving a single-story residence with a basement. Prolonged suppression operations took place, which resulted in a significant amount of water being used. You've also been notified of a potential leak or water main break.

1. What are two water-related hazards that may be present?

_____

_____

2. What are two ways to mitigate the water-related hazards?

_____

_____