CERTIFIED SAFETY AND HEALTH EXAMINATION
SAMPLE QUESTIONS

The Certified Safety and Health Examination Practice Items are intended to familiarize prospective examinees with the style and format of the CSHM examination questions. There are 36 objective practice items contained in this Guide, whereas the actual CSHM examination contains 150 objective items. The 150 test items will have the following weighted breakdown.

- Management and Leadership Principles and Methods  (21% of test/32 questions)
- Risk Identification, Management and Control  (35% of test/52 questions)
- EHS Operations, Programs and Applications  (28% of test/42 questions)
- Incident Investigation and Performance Evaluation  (16% of test/24 questions)

Exams administered outside the United States will be in US English. Exam questions for candidates in this category will contain fewer questions that pertain only to the United States (i.e. OSHA, NIOSH, etc.)

None of these practice items will be found on the actual CSHM certification examination. These practice items are only meant to be representative of the type of items found on the certification examination. Following the practice items is a quick scoring key and the rationales for the answers.

Remember to select the **BEST** answer. Good luck!

I. GENERAL AND BUSINESS MANAGEMENT

1. A hazard analysis can be used to evaluate a potential hazard; what other information should be considered?
   
   a. Injury reports  
   b. Statistical data  
   c. Risk assessment  
   d. Fatality investigations

2. Which leadership style will have the most positive effect on subordinate satisfaction for employees who work on stressful, frustrating or dissatisfying tasks?
   
   a. Supportive  
   b. Achievement-Oriented  
   c. Participative  
   d. Contingency

3. Which leadership style will help employees to strive for higher standards of performance and have more confidence in their ability to meet challenging needs?
   
   a. Directed
b. Achievement-Oriented  
c. Participative  
d. Performance  

4. Which of the following is TRUE concerning goals:
   a. All of the following are true  
b. Employees who are assigned value goals perform better than those employees who are given specific goals  
c. Employees given moderately difficult or easily attainable goals perform better than those given high challenging goals  
d. Pay and feedback lead to improved performance only when they lead individual employees to set high goals  

5. Which of the following are recognized strategies for multi-national companies to use in dealing with the diversity of statutory laws governing it?
   a. All of the following  
b. Lobby to change the laws in each country so they are all the same  
c. Make all operations conform to the strictest country law  
d. Make operations in each country responsible for compliance with that country’s laws  

6. Common law differs from statutory law. Which of the following statements is TRUE?
   a. Statutory law passed by a legislature  
b. Statutory law is defined over a period of years by judges  
c. Common law refers to a law that is often violated  
d. Common law is a statute that amends a state constitution  

7. What functional area is typically responsible for functions related to design, construction, standards, and repair?
   a. Engineering  
b. Facilities  
c. Logistics  
d. Research and Design  

8. Who are the customers of the occupational safety function?
   a. All employees in an organization  
b. All employees in an organization and the community as a whole  
c. The safety manager, supervisor, peers, and subordinates  
d. From the CEO-level of management to the line worker  

9. Some ways the safety management professional can determine training needs is to:
   a. All of the following  
b. Conduct workplace surveys
c. Review regularly scheduled inspections for needs
d. Conduct an employee opinion survey

II. EHS MANAGEMENT METHODS AND SYSTEMS

10. The terms incidents and injuries are often used interchangeably. Actually the meanings are:
   a. Synonymous
   b. Different
   c. Diametrically opposed
   d. Identical

11. A tool that enables a team to identify, explore and graphically display the possible causes of an incident or hazardous conditions is:
   a. A fishbone diagram
   b. An affinity diagram
   c. A matrix diagram
   d. An interrelationship diagram

12. The system safety method, MORT, stands for:
   a. More Observation and Repetitive Training
   b. Management Oversight and Risk Tree
   c. Management Obstacles and Responsive Techniques
   d. Management Objectives and Regulatory Training

13. One method often used in system safety programs for complex systems is:
   a. Fault tree analysis
   b. Fishbone analysis
   c. Pareto chart analysis
   d. Audit analysis

14. Calculate the incidences rate for a company if the recordable incidents are 40 and the total hours worked are 1,500,000:
   a. 2.6
   b. 5.3
   c. 8.7
   d. 10.2

15. Which of the following techniques would be most likely to increase the motivation and satisfaction of people at your?
   a. Job placement
   b. Responsibility of workers
   c. Satisfaction of workers
16. What are the two main causes of incidents in the workplace?

a. Unsafe acts and unsafe people  
b. Unsafe people and unsafe machines  
c. Unsafe conditions and unsafe machines  
d. Unsafe acts and unsafe conditions

17. According to William C. Pope, the three causal factors of an incident are:

a. Training, oversight, inadequate system  
b. Defect, management, training  
c. Error, defect, oversight  
d. Regulation, error, attitude

18. There are several factors that are often used to determine when an organization should have the services of a full time Safety Professional. Which of the following is generally acknowledged to be the prime-determining factor in assigning safety personnel?

a. The incident rate of organization  
b. The seriousness of incidents suffered by the organization  
c. The potential for serious injuries in the organization  
d. The type of industry the organization is involved in

19. According to Pope, prior to 1960, safety and incident prevention used what type of approach to reduce injuries?

a. Situational Leadership Approach  
b. Engineering Approach  
c. Classical Management Approach  
d. Contingency

20. The main goal of Worker’s Compensation law is to:

a. All of the following  
b. To give the employee the opportunity to plead his case and speed up the waiting period for just compensation  
c. To eliminate negligence and product liability claims  
d. Compensate workers for injuries caused by incidents arising out of and in the course of employment

21. Housekeeping requirements for safe construction sites include all of the following EXCEPT:

a. Keeping site reasonably dry and clear of debris, scrap and protruding nails  
b. Providing containers for the collection and separation of waste, trash, oily rags and any other refuse.  
c. Removing combustible scrap at regular intervals
d. Storing all flammable wastes in a barrel or similar container with open top for convenient deposit and frequent removal.

III. SAFETY, HEALTH, AND ENVIRONMENT APPLICATIONS

22. Which of the following is a term used to describe the condition “epicondylitis”?

a. Trigger finger  
b. Rotator cuff  
c. Roofer’s wrist  
d. Carpenter’s elbow

23. The most common of the work related musculoskeletal disorders, and in economic terms, the most costly is:

a. Carpal Tunnel Syndrome  
b. Tendonitis  
c. Epicondylitis  
d. Low Back Pain

24. The delay between exposure and observable effects is ____________.

a. Down time  
b. Latency period  
c. Effect delay  
d. Synergism

25. Which analysis method is the most effective at determining potential problems in a given system?

a. Preliminary Hazard Analysis  
b. Job Safety Analysis  
c. Fault Tree Analysis  
d. Failure Mode Effect Analysis

26. Dilution ventilation is used to:

a. Control a contaminant at it source  
b. Control fumes from lead fusing  
c. Control low toxicity vapors  
d. Control asbestos

27. As one ages there is a vascular and neural degeneration of the inner ear that results in a decrease in hearing ability. This condition is called:

a. Sensoneural  
b. Sociocusis
c. Presbycusis

d. Tinnitus

28. Which of the methods listed below is not allowed in supplying air for SCBA, airline respirators, or combination units?

a. Filtered breathing air grade “D” or higher
b. Manifold cylinders of high pressure air
c. Oil pumped compressed air with filtering
d. Hospital grade oxygen

29. Which is the most effective method of reducing contamination to workers?

a. PPE
b. Administration controls
c. Fans
d. Engineering controls

IV. RISK IDENTIFICATION, MANAGEMENT AND CONTROL

30. What percentage of all injuries to people happens on the job?

a. 1/5 – 20%
b. 1/4 – 25%
c. 1/2 – 50%
d. 3/4 – 75%

31. On the job injuries and illness cost money, time, and effort. What is the most practical way to manage these losses?

a. Make sure safety is part of labor contracts
b. Aggressive claims handling
c. Effective safety and loss control programs
d. Good insurance coverage

32. In regard to a safe driving program, management is responsible for which of the following:

a. All of the following
b. Developing written standards for driving of company vehicle
c. Conducting regular driver training and requiring immediate reporting and investigation of every incident
d. Having corporate performance goals and keeping driver records

33. The lighting system failed, causing a short, which resulted in a fire. What class of fires would this be?

a. Class A
b. Class B
c. Class C
d. Class D
34. Mesothelioma is associated with

a. Welders  
   b. Asbestos Workers  
   c. Beryllium Workers  
   d. Excessive Vibration

35. The process of pooling security ideas and viewpoints of architects, security and safety professionals and local police and fire officials in a coordinated effort to produce a facility with planned defenses before the actual construction is known as what?

a. SMBO  
   b. Crime prevention through environmental design (CPTED)  
   c. Safe Construction  
   d. Planned Protection

36. Emergencies can arise in an organization at any time and from many different causes. The best safety management tool for minimizing disaster is to:

a. Screen candidates and hire only safe workers  
   b. Have a written comprehensive management plan  
   c. Keep in good contact and relations with the local fire department  
   d. Purchase only safe equipment and materials

ANSWERS AND RATIONALES FOR PRACTICE QUESTIONS

1. Answer: c. Risk Assessment

The hazard analysis identifies the potential hazards that exist, the risk assessment also may identify potential hazards, but it will also put a value on the risk associated with the potential hazards.

2. Answer: a. Supportive

A supportive leadership role would be the most effective type of leadership because it enables the employees to discuss the problems with management. It allows for feedback and open lines of communication.

3. Answer: b. Achievement-oriented

Achievement-oriented leadership encourages a high level of performance with challenging goals, emphasizing excellence and demonstrating confidence in employee ability.

4. Answer: d. Pay and Feedback lead to improved performance only when they lead individual employees to set high goals
Performance related pay (feedback) offers a means of rewarding outstanding performance, maintaining accountability, providing incentives for effort and productivity, and attracting and retaining good staff in a competitive market.

5. Answer: d. Make operations in each country responsible for compliance with that country’s laws.

Failure to comply with a jurisdiction’s law could lead to criminal violations, civil violations and unnecessary lawsuits. However, the uniqueness of country requirements makes using the “strictest” law for all countries impractical. Although compliance with local laws is a minimum, many multinational companies also have safety policies with stricter standards than some countries may require.

6. Answer: a. Statutory law is passed by a legislature

The distinctive feature of common law is that it represents the law of the courts as expressed in judicial decisions. The grounds for deciding cases are found in precedents provided by past decisions, as contrasted to the civil law system, which is based on statutes and prescribed texts.

7. Answer: b. Facilities

Facilities are concerned with the general layout and overall operation of particular buildings or structures. Engineering, logistics, and research and design are usually applied to a specific concern or problem.

8. Answer: b. All employees in an organization and the community as a whole

When discussing the role of the occupational safety function every person involved with a particular organization must be considered. This includes all employees, their families, the organization’s customers and the community as a whole; only focusing on the work can miss important opportunities to protect employees and promote a safety culture.

9. Answer: a. all of the following

10. Answer: b. Different

An incident is defined as an event that has the potential to cause physical harm. An injury is a form of hurt, damage, or loss usually to a person resulting from an event. Some incidents do not involve an injury.

11. Answer: a. A fishbone diagram

The fishbone diagram is an analysis tool that provides a systematic way of looking at effects and causes that create or contribute to those effects. The value of the fishbone diagram is to assist teams in categorizing the many potential causes of problems or issues in an orderly way in order to identify root causes.
12. Answer: b. Management oversight and Risk Tree

13. Answer: a. Fault Tree Analysis

Fault tree analysis can identify possible system reliability or safety problems at design time. It also allows the user to backtrack a single incident to its entire potential root causes. These causes may be unrelated and may be missed in other systems. As well, fault tree analysis allows the user to “see” the entire system that is being examined.

14. Answer: b. 5.3

The incident rate is the number of recordable injuries as delineated by the U.S. Occupational Safety and Health Administration (OSHA) per hundred employees. The incident rate is calculated by multiplying the number of recordable injuries by 200,000 hours worked (OSHA constant), then dividing by the number of actual hours worked.

\[
\text{I.R.} = \frac{\text{# of incidents} \times \text{OSHA constant for hours worked}}{\text{# of actual hours worked}}
\]

\[
40 \times 200,000 = 5.3
\]

15. Answer: d. Job enrichment

Fredrick Herzberg coined Job enrichment; it describes making the work environment less dissatisfying to the worker. Grievances, decreases productivity, and even strikes are examples of how a dissatisfying work environment can hurt an organization. One can enrich the job by allowing the opportunity for a worker to gain a sense of achievement, responsibility, advancement, and growth.

16. Answer: d. Unsafe acts and unsafe conditions

Unsafe acts and unsafe conditions are the broad definitions of the main causes of accidents. Unsafe acts include: unsafe methods, using damaged equipment, or failing to use PPE. Unsafe conditions include: not using guards on machines or equipment, defective design or construction, or inadequate use of PPE. There may also be many underlying factors and root causes that contribute to unsafe acts and conditions. They may include: lack of skill, improper training or failure of operational procedures.

17. Answer: c. Error, defect, and oversight

Incidents rarely happen from a single cause. Incidents are multi-factorial and arise through a clearly defined sequence of events, which involve performance errors, changes, oversights and omissions. Errors, defects, and oversights relate directly to the production process. They manifest themselves as losses in the form of poor quality, excessive waste, etc.

18. Answer: c. The potential for serious injuries in the organization
Staffing is driven by potentially serious injuries, not by actual adverse history. If a hazardous operation such as a chemical plant or refinery has a good safety record they do not eliminate staff because there are no injuries. It is the potential hazard level and also the regulatory compliance demands that come with the high potential hazards that drive the staffing.

19. Answer: b. Engineering Approach

An engineering approach was consistently used as a way to reduce incidents. It was the engineer’s job to design equipment that was safe to operate, regardless of whether the equipment was used correctly.

20. Answer: d. Compensate workers for injuries caused by incidents arising out of and in the course of employment

Before the Worker’s Compensation law, workers who were injured on the job were not compensated in any manner. The worker could sue the company, but the view of the courts was the worker assumed all risks associated with the job and was responsible for all injuries arising out of and in the course of employment.

21. Answer: d. Storing all flammable wastes in a barrel or similar container with open top for convenient deposit and frequent removal

According to 29 CFR 1926.25(c), containers used for garbage and other oily, flammable, or hazardous wastes, such as caustics, acids, harmful dusts, etc. shall be equipped with covers.

22. Answer: d. Carpenter’s elbow

Epicondylitis, also called tennis elbow, is a chronic condition of inflammation affecting the outside of the elbow where the tendons are attached. Repeated gripping or twisting can cause inflammation at the site where the tendons attach. Trigger finger is a condition affecting the finger, usually associated with these triggering a vibrating power tool with some force. The rotator cuff is the group of tendons around the shoulder process. Roofer’s wrist is associated with the wrists and usually develops from long-term deviation from neutral wrist position.

23. Answer: d. Low Back Pain

Liberty Mutual Insurance Company reported their worker’s compensation claim expenses as being roughly 33% musculoskeletal disorders (MSDs) in the OSHA ergonomics documents. MSD claims are often more expensive than other claims. By far the largest amount of money and lost time for MSDs is from low back pain because of their higher prevalence relative to other MSDs. Low back pain MSDs make up 15% of all Liberty Mutual’s worker compensation claims and 23% of their compensation costs.

24 Answer: b. Latency Period
This delay can be observed in serious occupational diseases such as asbestosis and silicosis, which can have effects not realized until years and even decades after exposure.

25. Answer: d. Failure Mode Effect Analysis (FMEA)

FMEA is an easy to use and yet powerful pro-active engineering quality method that helps you to identify and counter weak points in the early conception phase of products and processes. The structured approach makes it easy to use and even for non-specialist a valuable tool. The benefits obtained encompass by large the investments in time and resources to execute the analysis.

26. Answer: c. Control low toxicity vapors

Dilution ventilation relies on bringing fresh air into a room and mixing it with contaminated air to lower the concentration of the contaminant. There are several factors that can affect the effectiveness of dilution ventilation such as mixing efficiency, cross drafts, worker positions, and proper air flows at the source and the exhaust. To control toxic materials such as lead or asbestos, a capturing hood or enclosing hood should be used, as they are more effective at capturing contaminant at its source. With dilution ventilation, there is a good possibility that contaminant may spread throughout the room, and this is undesirable if the material being handled is toxic or hazardous.

27. Answer: c. Presbycusis

Presbycusis is mostly due to aging, as it usually gradually decreases a person’s ability to hear high-level pitched sounds. This gradual change may be due to prolonged exposure to high sound levels over many years. A person who suffers from presbycusis may experience such symptoms as having difficulty understanding someone talking to them, especially when there is background noise.

28. Answer: d. Hospital Grade Oxygen

Hospital grade oxygen is not allowed to be used for supplying air to a SCBA. Filtered breathing air grade “D” or better, high pressure manifold cylinders, and oil pumped compressed air are all acceptable means of providing air to a SCBA as long as the precautions mentioned in OSHA’s respiratory standard are met.

29. Answer: d. Engineering Controls

Engineering controls are the most proactive and effective methods of reducing exposure. They reduce risk by controlling or eliminating contamination at their source. Administration controls and PPE are secondary protection measures and can be helpful if engineering controls cannot be applied.

30. Answer: c. ½ - 50%
Statistics show that the most common work injuries are orthopedic injuries, principally back and hand injuries. Other types of work injuries are:

1. Industrially caused cancers
2. Respiratory problems such as asthma
3. Hearing loss due to acoustic trauma/noise exposure on the job
4. Depression and other psychiatric conditions which arise as a consequence and outgrowth of physical injuries on the job
5. Heart conditions including heart attacks and coronary artery blockage, heart attacks triggered by physical stress on the job.

31. Answer: c. Effective safety and loss control programs

On the job injuries and illnesses cost money, both in direct costs such as workers compensation payments, and indirect costs such as investigation time, replacement training, product damage, and lower morale. It is better to prevent losses through a safety program than to try to reduce the expenses after the injury has happened.

32. Answer: a. all of the following

33. Answer: c. Class C

Class A – used for paper combustibles
Class B – used for combustible liquids from gasoline etc.
Class C – fire extinguisher used to extinguish electrical fires
Class D – used to extinguish combustibles metals

34. Answer: b. Asbestos workers.

35. Answer: b. Crime prevention through environmental design (CPTED)

Crime prevention through environmental design takes into account everyone’s viewpoints into the security of the building. It is done during the planning stage of the building and grounds. This helps security because it has features built in by the architects with safety professionals and local polices ideas still fresh in their head when designing. Instead of trying to put safety first after the building is already built with design flaws that employees have to try to work around.

36. Answer: b. Have a written comprehensive management plan

All of the other answers are good ideas but no matter how safe you think you are, an incident can happen. Therefore, the only way to be prepared is to have a written comprehensive management plan