OHST Practice Test

1. Which of the following is generally true with regard to worksite safety inspections?

a. Unbiased inspections are best conducted by personnel who only have a generalist's knowledge of the subject area being inspected.
b. The most useful findings come from scheduled inspections.
c. Inspections, by design, should always be generically oriented in nature.
d. Inspectors are independent entities who do not have a direct affiliation with the organization or entity undergoing inspection.

2. A robust incident reporting system typically includes which of the following facets?

a. Mechanisms for filing "lessons learned"
b. Remote electronic access capabilities in the field
c. Clear direction on how to differentiate and properly distinguish among incident severity categories
d. Established processes for commencing worker compensation claims

3. Which of the following is a major advantage that is characteristic of undergoing an external versus internal audit?

a. Benchmarking of audit findings against those of competitors
b. Higher levels of subsequent managerial engagement in response to findings
c. More rapid initiation of corrective actions in response to discovered findings
d. Direct national certification opportunities (e.g., International Organization for Standardization [ISO] and ANSI) are more readily available via external audit corrective action measures

4. Which of the following is often associated with frostbite of the fingers or toes?

a. Absence of pain
b. Fibromyalgia
c. Chilblains
d. Localized capillary damage to the hands and feet from high blood pressure

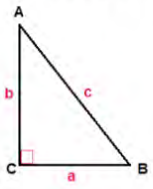
5. Besides lead, which of the following is also typically utilized as a robust shielding material for protection against gamma or X-ray radiation?

a. Aluminum
b. Water
c. Lithium
d. Beryllium

6. Which of the following is often a typical means by which hazards can arise during the conduct of maintenance activities?

a. Maintenance procedures are being followed in too literal of a fashion.
b. Manufacturer recommendations are regularly superseding internally driven mandates.
c. Maintenance schedules are not adhered to.
d. Over-allocation of resources is selected for maintenance items.

7. The tangent of angle ∠ABC (note: drawing is <u>not</u> to scale) is equal to:



a. b/a
b. c/b
c. a/b
d. a/c

8. Which of the following is NOT a widely employed method used in industry for reducing hazardous noise levels?

a. Using sound-absorbent materials in building construction
b. Decreasing vibrational frequencies
c. Employing white-noise background sources for dilution
d. Decreasing flow rates

9. What type of glove material is widely used for protecting the hands against welding sparks?

a. Neoprene
b. Polyester
c. Leather
d. Polyethylene

10. What is the statistical median of the following data set (6, 13, 15, 15, 18, 24, 28, 33, 51, and 66)?

a. 26.9
b. 18 and 24
c. 21
d. 36

11. What is typically regarded as the MOST difficult challenge associated with the generation of a cost-benefit analysis?

a. The performance of associated cost-benefit analysis risk assessments
b. Determining how much a human-life is "worth" from a financial perspective
c. Accurately determining potential long-term cost savings of a proposed safety enhancement
d. Substantiating design-basis criteria

12. Which of the following project management tools can be effectively used for comprehensively illustrating a project schedule?

a. GANTT chart
b. Work breakdown structure (WBS)
c. Scope of work (SOW)
d. Project plan

13. Which of the following tenets is typically NOT true in regard to the concept of continual improvement?

a. An organization should not seek perfection as the ultimate goal for achievement.
b. Performance improvement should be sought at a variety of paces, depending on the circumstances.
c. Large-scale improvement initiatives as opposed to incremental improvements should ultimately be sought.
d. Lessons-learned programs should be integrated with continual improvement programs.

14. Which of the following four-step models is of chief importance and highly utilized within occupational safety and health programs?

a. Stop-observe-respond-report
b. Plan-do-check-act
c. Appraise-respond-evaluate-learn
d. Educate-implement-adjust-document

15. Which of the following would NOT be considered a benefit of commencing an accident investigation as soon as possible?

a. The sooner the causes are found, the sooner appropriate culpability can be assigned.
b. Future accident costs can ultimately be reduced via the prompt attainment of accident root causes.
c. A rapidly commenced investigation sends a message of robust corporate engagement.
d. Rapid investigations help ensure that the incident is still fresh in the minds of those from whom information is being gathered.

16. Which of the following is a typically implemented protocol for protecting workers from blood-borne pathogens?

a. Washing one's hands after removing protective glove wear
b. Regular employee health screenings and medical monitoring
c. Requiring infectious personnel to wear additional personal protective equipment (PPE)
d. Requesting that infectious personnel provide disclosure

17. Which of the following is one of Heinrich's 10 Axioms of Workplace Safety?

a. Knowing why people work unsafely does not directly initiate appropriate corrective measures.
b. Accident prevention strategies usually function independently of production and quality strategies.
c. Most accidents are the result of unsafe worker behavior.
d. Senior management should retain a degree of independence and separation from the realm of workplace safety.

18. According to the Errors in Management Systems theory (developed by Juran and Demmin), approximately what percentage of workplace errors are usually the result of poor management procedures and/or processes?

a. 35%
b. 50%
c. 70%
d. 85%

19. If a work area has dimensions of 30 ft x 18 ft x 8 ft, what is the shortest amount of time it could potentially take for the entire supply of air in the room to (hypothetically) be completely exchanged via an air-exchanger HVAC system that operates at a rate of 60 cfm?

a. 1.2 hrs
b. 2.2 hrs
c. 2.9 hrs
d. 3.4 hrs

20. Which of the following is a type of hearing hazard that can result from exposure to excessively loud noises?

a. Variance in equilibrium
b. Shifts in threshold
c. Eustachianary fibrillation
d. Celiac fibromyalgia

21. Which of the following machine components typically entails the hazard of potential nip points?

a. Bushings
b. Guards
c. Gears
d. Actuators

22. Which of the following is typically considered one of the fundamental principles of ergonomics?

a. Workforce comfort should be assessed as an aggregate entity.
b. Output should never trump common sense.
c. Whenever possible, the job should be changed and not the worker.
d. A workstation should always be a work in progress.

23. Which of the following is considered a robust physical control against electrical hazards?

a. Utilizing inductors for maintaining adequate grounding
b. Use of nonconductive gels during high-voltage maintenance activities
c. Use of impedance-relay devices for diverting current
d. Utilizing wires that are not excessively long

24. Which of the following is NOT typically employed as a control strategy for protecting against confined-space hazards?

a. Ensuring adequate fire-suppression equipment is available
b. Use of a buddy system
c. Evaluating potential hazards of the space immediately after entry
d. Ensuring adequate ventilation is at hand

25. Which of the following is generally NOT true regarding chemical irritants?

a. The mucus membranes are often easily affected by these agents.
b. Permanent tissue damage often occurs as a result of exposure.
c. Chemical irritants can cause dermatitis.
d. Hair spray is an example of a chemical irritant.

26. Which of the following is generally true regarding biohazards?

a. Biohazards can be either animal or plant based.
b. Biohazards are not fungal based.
c. Biohazards, by definition, are not allergenic in nature.
d. Biohazards are usually transmitted through the air.

27. In regard to worker injury and incident statistics, (Number of subject cases x 200,000) ÷ (total hours worked) is used to calculate which of the following metrics?

a. Total case rate (TCR)
b. Days away from work rate (DAWR)
c. Days away, restricted duty, or transfer (DART) rate
d. Total injury and illness rate (TIIR)

28. Which of the following is a regularly employed tactic for combating sick office syndrome?

a. Maintaining low building humidity levels
b. Implementing isolation areas for sick personnel to exclusively conduct work
c. Replacing furniture
d. Having floors tiled instead of carpeted

29. Which of the following is an established principle used for the implementation of proper workstation configurations?

a. Usage economics
b. Usage sharing
c. Usage parametrization
d. Usage sequence

30. Which of the following is generally true with regard to building evacuation plans?

a. Plans should include fire extinguishing protocols.
b. Plans should specify locations of indoor shelter-in-place areas.
c. Plans should include procedures on how to activate emergency response teams in tandem with an evacuation.
d. Plans should be designed so that personnel (still) know where to exit during a darkness blackout.

31. Which of the following is generally true of recirculated-air system operational requirements?

a. Cleaning systems must have secondary and tertiary filtration modules that maintain efficiencies of at least 90% and 75%, respectively, of the primary module's efficiency.
b. Contaminated air must be contained indoors in the event of an incident.
c. Recirculated air must undergo regular sampling and evaluation to verify that cleaning systems are correctly functioning.
d. Cleaning systems must have audio warning indicators of at least 80 dB (at 3 feet) to advise personnel of potential issues.

Answer Key and Explanations

1. D: Effective worksite safety inspections are usually conducted by inspectors who are independent entities that do not have a direct affiliation with the organization or entity being inspected and are likewise typically conducted by personnel who have expert-level knowledge, training, and/or experience within the subject area(s) being inspected. Furthermore, inspections can either be unscheduled or scheduled, but unscheduled inspections typically provide better insights than scheduled ones.

2. C: A robust incident reporting system (IRS) typically includes reporting mechanisms for properly differentiating and distinguishing between and among incident severity categories. Processes for commencing worker compensation claims and submitting "lessons learned" are typically independent of IRS functions. Remote electronic access capabilities in the field, although a desirable option if available, are not a mandatory element of such a system and are thus typically seldom implemented.

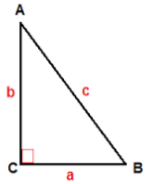
3. A: A major benefit that usually results from undergoing an external audit is the attainment of benchmarking information (per audit findings) against that of industry competitors who have undergone similar audits.

4. A: Frostbite is a dangerous condition that can occur as a result of prolonged exposure to extreme cold. It manifests when the temperature of body tissues falls below the freezing point of those tissues (essentially below the freezing point of water). In such instances, tissue damage usually occurs and can potentially lead to the loss of damaged toes or fingers in severe cases (digital frostbite). In addition, the victim may or may not feel pain associated with the onset of such a condition and likewise may also encounter skin that turns gray or white in color. In contrast, chilblains are another type of health hazard that can occur from overexposure to cold; however, these usually result from a combined exposure to cold and humidity and are typically depicted by toe redness, inflammation, itching, and occasional blistering.

5. B: Light metals such as aluminum, lithium, and beryllium are typically not employed as effective shielding materials for protection against exposure to gamma or X-ray radiation. The best shielding materials against these types of ionizing radiations include lead, concrete, uranium, and water.

6. C: Workplace hazards may arise in a number of different ways during the conduct of maintenance activities, including not adhering to consistent maintenance schedules; utilizing incorrect or outdated maintenance schedules; using poorly written maintenance procedures that do not clearly convey necessary step-by-step protocols; and executing work functions on systems that are not of a user-friendly design for maintenance (e.g., limited access or service locations).

7. A: The tangent of angle ∠ABC is by definition equal to b/a, which is the opposite side over the adjacent side.



8. C: Several methods can be deployed in the workplace for significantly reducing hazardous noise levels; such strategies can include the use of double-barrier hearing personal protective equipment (PPE), whereby both earplugs and earmuffs are worn by workers, and installation of sound-absorbent materials, decreasing vibrational frequencies and sound flow rates and redirecting sound sources away from workers. Attempting to integrate white-noise (background) sources within a noisy work environment can actually add to gross ambient noise levels and is thus not recommended.

9. C: Gloves made from leather or cowhide material are conventionally used for effective protection against welding sparks. Gloves made from other (synthetic) materials (e.g., neoprene or rubber) are widely used for protection against chemical agents.

10. C: The number 21 is the statistical median of the data set: 6, 13, 15, 15, 18, 24, 28, 33, 51, and 66. If there is an even number of values in a data set (such as 10 for this case), the median is the average of the two middle values of the set. Thus, (18+24)/2 = 21. If there were an odd number of values, the median would be the value that has the same number of values that are both above and below it. For instance, if the data set instead consisted of the following nine values—6, 13, 15, 15, 18, 24, 33, 51 and 66—the median would be 18 because it has four values that are greater and four values that are lesser.

11. B: Determining how much monetary value to place on a human life is usually regarded as the most difficult challenge associated with the rendering of a cost-benefit analysis. Other facets such as the performance of associated risk assessments, determining long-term cost savings of proposed safety enhancements, and formulating or defending design-basis criteria, however, can also exhibit a certain degree of inherent difficulty.

12. A: A GANTT chart is often utilized within the realm of project management to effectively illustrate a project schedule. It typically depicts how much time should be spent on each project step and prioritizes the order in which those steps should be completed as well as key milestones, available float, and the project's critical path.

13. C: In regard to the concept of continual improvement, performance improvement should be sought at a variety of paces, depending on the circumstances at hand. A reasonable amount of time should always be allocated for a performance improvement process to take hold and should not be approached with a large-scale, quick-fix mentality. In addition, it is value-added to effectively integrate "lessons-learned" programs with continual improvement programs to the highest extent practicable.

14. B: The plan-do-check-act model is highly utilized within industrial occupational safety and health regimes and work-control programs to ensure that work is appropriately planned and safely performed.

15. A: The purpose of an accident investigation is to prevent future accidents and return the company to confident functioning. The sooner an accident's root cause(s) is/are discovered, the sooner these lessons can be shared with the subject organization for preventing recurrences. A prompt response to an accident also sends a message of robust corporate response and engagement, and witness accounts are usually more reliable earlier as opposed to later.

16. A: Typically implemented protocols for protecting workers from blood-borne pathogens include requiring hand-washing after removal of glove personal protective equipment (PPE); training workers to assume that all bodily fluids are potentially infectious; and not permitting eating or drinking in areas where pathogens may be present. Regular employee health screenings

and medical monitoring do(es) not, per se, protect workers from blood-borne pathogens, although they may be able to identify potentially infectious diseases that employees may be (unaware) carriers of. Requiring infectious personnel to wear additional PPE as compared to other employees or requesting that infectious personnel disclose certain health conditions may be in violation of HIPAA requirements.

17. C: Heinrich's 10 Axioms of Workplace Safety include the following: Most accidents are usually correlated to unsafe worker behavior; knowing why people work unsafely can usually assist in producing appropriate corrective measures; and management usually plays a vital role within the realm of accident prevention. Additional axioms include these: Unsafe worker actions do not always quickly result in an incident; safety should be the ultimate responsibility of management; and most accidents are, in fact, preventable.

18. D: According to the Errors in Management Systems theory (developed by Juran and Demmin), approximately 85% of errors in the workplace are usually the result of insufficient management procedures and/or processes.

19. A: If a work area has dimensions of 30 ft x 18 ft x 8 ft, the shortest amount of time it could potentially take for the entire supply of air in the room to (hypothetically) be completely exchanged via an air-exchanger HVAC system that operates at a rate of 60 cfm would be approximately 1.2 hours. This is calculated via the following:

$$\text{Total air exchange time} = 4320\ \text{ft}^3 \times \frac{1\ \text{min}}{60\ \text{ft}^3} = 72\ \text{min} = 1.2\ \text{hours}$$

20. B: Types of hearing hazards associated with exposure(s) to loud noise include shifts in threshold due to short- or long-term noise exposure; acoustical traumas caused by a sudden, extreme loud noise; and tinnitus (ringing in the ears) caused by short- or long-term noise exposure.

21. C: Nip-point hazards (in which body parts or clothing can become ensnared) are inherently associated with the functionality of many machine components, especially those that rotate toward one another or toward a stationary component. Examples of nip-prone items include gears, pulleys, rollers, belts, and bearings. Bushings have no ensnaring capability; actuators are essentially fully enclosed (encased) motor mechanisms; and guards are structures installed for protecting against an ensnarement-type incident.

22. C: There are four fundamental established tenets of ergonomics across general industry: whenever possible, the job should be changed and not the worker; people differ from one another; people should work smart; and people are more appropriate for some tasks than machines are and vice versa.

23. D: Utilizing wires that are not excessively long is considered a robust physical control against electrical hazards. The longer a wire is, the more electrical resistance tends to build within, and thus a higher level of associated heat (and potential for fire) is produced. Other physical controls against electrical hazards include using insulation, conduits, and barriers to provide a buffer between electrical sources and personnel; ensuring proper connections of conductors; and properly locating and situating high-voltage equipment.

24. C: Fully assessing confined-space hazards prior to entry is proper protocol, as opposed to only assessing them after entry and work have commenced. Moreover, use of a buddy system is an excellent control strategy to employ for protecting against hazards associated with confined-space

work as well as sufficient worker training; installation of accessible fire-suppression equipment; and ensuring that sufficient ventilation is available within the space.

25. B: Chemical irritants are compounds that can adversely (and temporarily) affect the skin (dermatitis) and mucus membranes as well as the eyes and respiratory tract. They do not typically cause permanent tissue damage as a result of normal exposure(s). Examples of irritants include the likes of chlorine, ammonia, nitrogen dioxide, and ozone.

26. A: Workplace biohazards can be either animal- or plant-based; can be either toxic or allergenic-based in nature; can include certain types of bacteria, viruses, or fungi; and are usually transmitted by some type of direct contact with bodily or plant-based fluids.

27. C: The injury and incident metric of days away, restricted duty, or transfer (DART) is calculated per the following formula: DART = Number of subject cases x 200,000) ÷ (total hours worked).

28. A: There are several preventative and remedial measures that can be implemented in the workplace to normally combat sick-office syndrome. Chief examples include maintaining low building humidity levels; regularly cleaning furniture, carpets, and floors; regularly discarding accumulated condensation from HVAC collection systems; and regularly changing out HVAC system air filters. The invocation of extreme measures such as employee isolation, furniture replacement, or floor-material change outs would typically be implemented only for localized extreme cases of epidemic-type proportions.

29. D: There are four regularly utilized principles typically exercised in workplaces for the deployment of proper workstation configurations; these include usage sequence, usage frequency, usage functionality, and usage importance.

30. D: Building evacuation plans should be designed so that personnel still know where to exit in virtual total darkness; they should likewise include use and guidance of alarm systems as a mode of communication and should also specify locations of outdoor mustering areas. In contrast, emergency plans and protocols typically address items related to emergency response team activations, sheltering in place, and fire response procedures.

31. C: Although OSHA does not administer specific indoor air quality (IAQ) standards, it does maintain a cadre of general ventilation protocols as well as guidance regarding specific air contaminants that can potentially spawn IAQ issues. As such, recirculated-air system operational requirements must include, at a minimum, the following: Recirculated air must undergo regular sampling and evaluation to verify that cleaning systems are functioning normally; contaminated air must be routed outdoors in the event of an incident; air-cleaning systems must have audial and visual warning indicators to advise personnel of potential issues (no specified illumination or loudness requirements); and secondary filtration modules must maintain an efficiency at least equal to that of a subject system's primary filtration modules (there are no requirements for potential tertiary modules).

32. B: Types of electrical-switching devices that are typically used in the workplace for preventing access to hazardous electrical areas, or for altogether interrupting electrical power, include interlocks, cutouts, and lockouts. Interlocks essentially prevent employee access to energized equipment or work areas; cutouts automatically trip power to electrical equipment when a certain temperature is reached; and lockouts prevent equipment from being switched into the on mode.