Question No: 1
Which of the following is NOT considered a significant factor in determining the outcome of an electrocution event?

A. The level of electrical current passing through the body
B. The amount of electrically resistant material present in work boots and work gloves
C. The total amount of time an electrical exposure occurs
D. The actual path through the body in which the electrical current flows

Answer: B

Explanation:
B: The end-result of a potential electrocution incident is generally determined by how much current passes through the body, the duration of time to which a person is exposed to the subject current, and the actual path the current takes.

Question No: 2
A Noise-Hazard Control Program (and associated Hearing Conservation Program) is required under OSHA regulation 29 CFR 1910.95 (Occupational Noise Exposure) where workers may be exposed to noise levels in excess of an eight-hour time-weighted average of ________.

A. 60 decibels (dB)
B. 75 decibels (dB)
C. 85 decibels (dB)
D. 95 decibels (dB)

Answer: C

Explanation:
C: An eight-hour time-weighted average of 85 dB is considered the threshold, per 29 CFR 1910.95, for which a Noise Hazard Control Program (and associated Hearing Conservation Program) must be set into place.
Question No: 3
As per 29 CFR 1910.1001, the allowable eight-hour exposure limit concentration to asbestos fibers is not to exceed which of the following?

A. 0.1 fibers per cm$^3$ of air
B. 0.25 fibers per cm$^3$ of air
C. 10 fibers per cm$^3$ of air
D. 100 fibers per cm$^3$ of air

Answer: A

Explanation:
A: Per 29 CFR 1910.1001, an employer shall ensure that no worker under its employment is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cm$^3$ of air as an eight (8)-hour time-weighted average (TWA).

Question No: 4
Per OSHA regulations 29 CFR 1910.25-1910.27, the maximum length a single ladder or a single section of ladder may be is ________.

A. No greater than 20 feet
B. No greater than 30 feet
C. No greater than 36 feet
D. No greater than 48 feet

Answer: B

Explanation:
B: OSHA regulations 29 CFR 1910.25-1910.27 stipulate that no single ladder or individual ladder sections shall exceed 30 feet in length.

Question No: 5
Which of the following is NOT stipulated as a hazardous waste material attribute to which the U.S. Environmental Protection Agency extends a designated waste code (e.g., #D001), as per 40 CFR 261, Subpart C?

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A. Toxicity

B. Corrosivity

C. Mutagenicity

D. Ignitability

Answer: C

Explanation:
C: Certain attributes for hazardous waste are stipulated and codified within EPA regulations (40 CFR 261, Subpart C) for special designation. The four properties, in order, are ignitability (# D001), corrosivity (# D002), reactivity (# D003), and toxicity (#'s D004-D043). Mutagenicity is not designated as a codified attribute within 40 CFR 261, Subpart C.

Question No: 6
In a construction environment, which of the following types of PPE is most suitable for protecting the eyes against airborne dust?

A. Safety glasses

B. Safety goggles

C. Welding goggles

D. Industrial optic-shields

Answer: B

Explanation:
B: Robust, form-fitting goggles that fully and tightly cover the eyes provide very good protection from airborne dust hazards, and can also provide a suitable optical safeguard against chemical splashes and airborne projectiles.

Question No: 7
At what minimum frequency must electrical-insulating gloves be tested to ensure they adequately protect workers against electrical shock?

A. Every six months
B. As deemed appropriate by visual inspection

C. Annually

D. Biweekly

Answer: A

Explanation:
A: Insulating gloves are required to be periodically tested at minimum six-month intervals, with the associated testing procedures and results comprehensively annotated. As an extra precautionary measure against hand injuries, it is advisable that workers wear leather gloves in tandem with the insulating gloves to provide additional protection.

Question No: 8
The most useful tool that CHSTs can potentially use for evaluating system safety levels at smaller-scale worksites is a(n):

A. Failure modes and effects analysis (FMEA)

B. Event tree

C. Root-cause analysis

D. Job safety analysis (JSA)

Answer: D

Explanation:
D: A job safety analysis (JSA) is likely the most suitable choice for a small-scale worksite because workers who are familiar with the site and its associated functions and tasks actually perform and render the subject analysis. In contrast, a failure modes and effects analysis is a systematic method for evaluating a process to identify where and how it might fail and for assessing the relative impacts of different failures; an event tree evaluates how single events may logically spawn subsequent events or consequences; and a root-cause Analysis is a method of problem solving that identifies underlying faults or deficiencies that likely initiated an event.

Question No: 9
If 25 or more employees are to be working underground at the same time, which of the following safety procedure(s) must be in effect?
A. Two separate, independent telephone lines to the underground must be active and operational.

B. Supplied-air volumetric flow rates must be cross-checked and verified prior to entry.

C. There must be an accountability-journeyman present underground at all times.

D. Two separate rescue teams must be available.

Answer: D

Explanation:
D: When 25 or more workers are underground at one time, two separate rescue teams must always be available to aid and assist in case of an emergency; one of the teams must be within 30 minutes of traveling time to the underground location, and the other must be within two hours of traveling time. If fewer than 25 workers are underground at one time, only one rescue team needs to be available, and they must be located within 30 minutes of traveling time to the subject location.

Question No: 10
If a five-foot deep trench is dug in clay material, what angle must the trench wall not exceed?

A. 53 degrees
B. 63 degrees
C. 72 degrees
D. 22.5 degrees

Answer: A

Explanation:
A: Clay is a Type-A material and requires that a maximum 53-degree slope not be exceeded, with an associated height-to-depth ratio of ¾ to 1. Thus, a five-foot trench requires, at most, a 3.75-foot angle, or, 53 degrees. Any angle greater than this can result in a cave-in. Type B is gravel and silt, which require that a 4-degree slope not be exceeded. Type C is sand, which requires that a 34-degree slope not be exceeded.

Question No: 11
“Lifting index” (LI) is calculated per which of the following?
A. Load weight × recommended weight limit
B. Load weight ÷ recommended weight limit
C. Load weight ÷ weight of worker
D. (Load weight ÷ worker age)^2

Answer: B

Explanation:
B: Lifting index (LI) measures the physical stress associated with lifting an object. As LI increases, the chance of injury likewise increases. LI is calculated by dividing the load weight by the recommended weight limit (RWL).

Question No: 12
“Flash point” is most accurately defined as which of the following?
A. The highest temperature at which a vapor will ignite in air
B. The lowest concentration of vapor that will ignite in air
C. The temperature at which a vapor and liquid phase are in a state of equilibrium
D. The lowest temperature at which a flammable liquid can form an ignitable mixture in air

Answer: D

Explanation:
D: Flash point is defined as the lowest temperature at which a flammable liquid can form an ignitable mixture in air. If the source of ignition is ultimately removed, the vapor will likely cease burning.

Question No: 13
Which of the following does a mobile-crane operator NOT need to be aware of in order to ensure a safe lift?
A. Whether the outriggers are extended or retracted
B. The angle of the boom
C. The width of the jib

D. Whether the tires are fully inflated

Answer: C

Explanation:
C: To ensure a safe lift, a crane operator must be aware of whether a crane’s outriggers are extended or retracted, the angle of the boom, and whether the crane’s tires are properly inflated. In addition, the operator must ensure that the crane is level, that extended outriggers are supported by stable ground, what positions the boom will be in during the lift, and the gross weight of the load. All of this information can be used for consulting a load chart that will assist the operator in determining whether a given load is within the structural and stability limits of the crane. Although the width of the jib has no meaningful significance in such a determination, it is vital to be aware of the length of the jib.

Question No: 14
To what part of the body does a body harness typically NOT distribute any significant fall-arrest force?

A. Shoulders
B. Lower back
C. Pelvis
D. Thighs

Answer: B

Explanation:
B: A body harness consists of straps attached to other components of a personal fall system. In case of a fall, the straps primarily distribute the fall-arrest force over the chest, shoulders, waist, thighs, and pelvis. A properly designed (and worn) harness should yield minimal impacts to the lower-back area.

Question No: 15
“Recommended weight limit” (RWL) is most accurately defined as which of the following?

A. The weight that healthy workers could lift for up to eight hours without causing injuries
Question No: 16
The Heinrich “incident to injury ratio” model states that for every 330 accidents, _______ result in no injuries, _______ cause minor injuries, and _______ cause(s) major injuries.

A. 230, 99, 1
B. 250, 70, 10
C. 275, 50, 5
D. 300, 29, 1

Answer: D

Explanation:
D: The incident-injury ratio Heinrich developed is 300:29:1. This ratio demonstrates, statistically, that an attentive manager or foreman usually has many opportunities to improve a safety program before a serious accident occurs.

Question No: 17
Which of the following is regarded as the “three E’s of safety”?

A. Enlightenment, education, execution
B. Education, evolution, execution
C. Engineering, education, enforcement
D. Education, execution, excellence

Answer: C

Explanation:
C: The three E’s of safety are engineering, education, and enforcement. Engineering entails the use of safety processes and procedures; education emphasizes worker training and hazard identification; and enforcement translates to obligatory compliance with rules, laws, and regulations.

Question No: 18
Total case incident rate (TCIR) is calculated via which of the following?

A. Number of recordable injuries per year ÷ total hours worked

B. (Number of recordable injuries per year × 200,000) ÷ (total hours worked)

C. (Number of recordable injuries per week × 40) ÷ (total hours worked)

D. (Number of recordable deaths ÷ number of recordable injuries) × (total hours worked)

Answer: B

Explanation:
B: Total case incident rate (TCIR) is a health and safety metric that represents the number of OSHA-recordable injury cases in a year per hundred full-time employees. The metric is primarily used for comparison between entities in similar industries.

Question No: 19
Which type of incident usually accounts for the highest fatality rate in the construction industry?

A. Exposure to harmful substances

B. Falls

C. Fires and explosions

D. Contact with objects and equipment

Answer: B
Explanation:
B: Falls at construction worksites usually represent the highest source of fatalities (about one-third). Other major sources include transportation-related fatalities (about 25 percent), contact with objects and equipment (about 20 percent), and exposure to harmful substances (about 15 percent).

Question No: 20
According to OSHA regulation 29 CFR 1926.651, a stairway, ladder, ramp, or other safe means of egress shall be located in trench excavations that are ____ feet or more in depth.

A. Four
B. Five
C. Six
D. Seven

Answer: A

Explanation:
A: Per OSHA regulation 29 CFR 1926.651(c)(2), a stairway, ladder, ramp, or other safe means of egress shall be located in trench excavations that are four feet (1.22 m) or more in depth so as to require no more than 25 feet (7.62 m) of lateral travel for employees.

Question No: 21
Excavation cave-in protection is ALWAYS required when which of the following conditions are met?

A. The excavation mainly comprises gravel or sand, and is greater than three feet in depth.
B. The excavation mainly comprises clay or silt, and is greater than five feet in depth.
C. The excavation is greater than four feet in depth, regardless of material.
D. The excavation employs heavy equipment to remove excavated material.

Answer: B

Explanation:
B: OSHA regulations mandate that trenches five feet (1.5 meters) deep or greater require a