

BCSP CHST Exam

Volume: 200 Questions

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.

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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 cm³ of air
- B. 0.25 fibers per cm³ of air
- C. 10 fibers per cm³ of air
- D. 100 fibers per cm³ 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 cm³ 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

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- 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?

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- 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 $\frac{3}{4}$ 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?

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- 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

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- 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

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- B. Fifty pounds for healthy male workers and 30 pounds for healthy female workers
- C. The maximum weight associated with a body mass index of 25 (threshold of “overweight”)
- D. The weight at which a back-support apparatus should be worn

Answer: A

Explanation:

A: Recommended weight limit (RWL) is the weight that healthy workers could lift for up to eight hours without causing musculoskeletal injuries. It is calculated as the multiplicative product of load constant, horizontal multiplier, vertical multiplier, distance multiplier, asymmetric multiplier, frequency multiplier, and coupling multiplier.

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

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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

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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

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protective system against cave-ins unless the excavation is made entirely in or of stable rock. Trenches 20 feet (6.1 meters) deep or greater require that the cave-in protection system be designed by a registered professional engineer or be based on tabulated data prepared or approved by a registered professional engineer.

Question No: 22

What level of electrical current is enough to potentially result in death?

- A. 0.1 milliampere
- B. 1 milliampere
- C. 15 milliamperes
- D. 75 milliamperes

Answer: D

Explanation:

D: Although any amount of electrical current over 10 milliamperes typically produces painful to severe shock, death usually does not occur at levels below 75 milliamperes.

Question No: 23

Which of the following types of construction equipment can NOT make inadvertent contact with overhead power lines?

- A. Backhoes
- B. Scaffolding
- C. Raised dump truck beds
- D. Bulldozers

Answer: D

Explanation:

D: Overhead power lines are usually not insulated, and thus provide a major electrical hazard if direct contact is established with any conductive material. Construction equipment such as backhoes, scaffolding, dump-truck beds, cranes, ladders, scissor lifts, and even aluminum paint rollers may inadvertently come into contact with such lines. Bulldozers are generally not tall

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enough to hit overhead power lines.

Question No: 24

Which of the following is NOT a recommended course of action for preventing falling-object injuries to workers below a scaffold?

- A. The area beneath the scaffold should be barricaded to the extent practicable.
- B. Panels or screens should be erected if loose objects are stacked higher than toe boards.
- C. A safety buffer zone of 12 feet around the perimeter of a scaffold, for every 10 feet of elevation, should be employed while the scaffold is in use.
- D. A canopy or net should be installed below the scaffold to catch or deflect falling objects.

Answer: C

Explanation:

C: Workers below scaffolds are often struck by objects such as tools or materials that inadvertently fall from the scaffolds. To mitigate the potential of such objects striking workers, it is recommended that workers always wear hard hats; the area beneath scaffolds be barricaded to the highest extent practicable; panels or screens be used to contain and stabilize stacked objects; and canopies or nets be erected to catch or deflect falling objects. There are no prescribed regulations in existence that mandate a safety buffer margin or distance below a scaffold.

Question No: 25

Per OSHA regulation 29 CFR 1926.502, when a 200-pound load is applied in a downward direction to the top edge of a guardrail, it shall not deflect to a height any less than _____ above the walking or working level.

- A. 28 inches
- B. 34 inches
- C. 39 inches
- D. 46 inches

Answer: C

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Explanation:

C: OSHA regulation 29 CFR 1926.502 stipulates that when a 200-pound load is applied in a downward direction to the top edge of a guardrail, it shall not deflect to a height any less than 39 inches above the walking or working level. Additional fall-protection measures must additionally be installed (such as mid-rails, screens, mesh, and intermediate vertical members) between the top edge of the guardrail system and the walking or working surface when there is no wall or parapet wall present at least 21 inches in height.

Question No: 26

Which of the following is NOT a type of welding?

- A. Modulus welding
- B. Resistance welding
- C. Arc welding
- D. Oxygen-fuel gas welding

Answer: A

Explanation:

A: The three principal welding modes used in the construction industry are oxygen-fuel gas welding, arc welding, and resistance welding. Oxygen-fuel gas welding is a process that uses fuel gases to weld, by heating metals to a temperature that produces a shared pool of molten metal, which cools into a common metal. Arc welding is a fusion process wherein the merger of metals is achieved from the heat of an electrode and a bond formed between the elements. Resistance welding utilizes pressure and heat that is generated in the components to be welded by resistance to an electrical current.

Question No: 27

Which of the following is a common test used to check for cracks in a grinding wheel?

- A. Visual inspection
- B. Non-destructive assay
- C. The “ring test”
- D. The “lubricated disc” test

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Answer: C

Explanation:

C: The “ring test” evaluates the sound coming from a grinding wheel when lightly tapped with a nonmetallic material. An undamaged wheel emits a clear ringing tone. The ring test should not be performed on wheels that have a diameter of 10 cm or less, plugs and cones, mounted wheels, segment wheels, or inserted nut and projecting stud disc wheels.

Question No: 28

Which of the following soil classifications is correct?

- A. Type “A” – Cohesive soil with a low compressive strength
- B. Type “B” – Cohesive soil with a moderate compressive strength
- C. Type “C” – Cohesive soil with a high compressive strength
- D. Type “D” – Cohesive soil with a low compressive strength

Answer: B

Explanation:

B: Soil classifications are A, B, and C. Soil type A is cohesive soil with a high compressive strength, soil type B is cohesive soil with a moderate compressive strength, and soil type C is cohesive soil with a low compressive strength.

Question No: 29

Electrical “bonding” is best defined as:

- A. The attraction of polarized charges within an open circuit
- B. The transfer of electrons from one atom to another through an ionic bond
- C. The process of not being able to detach from an electrified object during an electrocution event
- D. Connecting two or more conductive objects with a conductor to protect against electrocution.

Answer: D

Explanation:

D: Electrical bonding is defined as the connection of two or more conductive objects with a

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conductor to prevent electrocution. Typical bonding connectors include copper bonding straps, solder lugs, pressure connectors or bolts, and star washers. A typical bonding conductor is a copper braid with pressure-type clamps.

Question No: 30

According to OSHA regulation 29 CFR 1910.242, the compressed-air pressure limit for cleaning operations shall not exceed _____ pounds per square inch.

A. 20

B. 25

C. 30

D. 40

Answer: C

Explanation:

C: Per OSHA regulation 29 CFR 1910.242, only compressed air of less than 30 psi may be used for cleaning operations.

Question No: 31

Which of the following materials or objects is NOT typically used for electrical grounding?

A. Ventilation ducts

B. Cold water pipes

C. Building steel

D. Ground rods

Answer: A

Explanation:

A: Electrical grounding is the process of connecting one or more conductive objects directly to the earth using cold water pipes, building steel, or ground rods.

Question No: 32