Construction and Industry

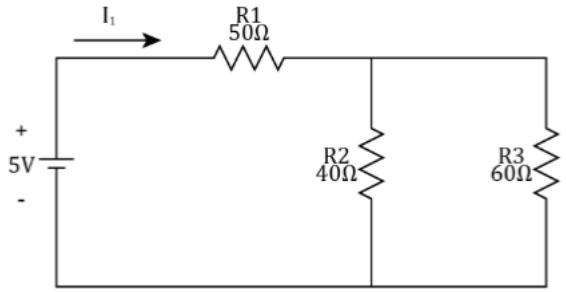
BCSP-ASP
Board of Certified Safety Professionals: Associate Safety Professional Exam

Questions and Answers (PDF)

Latest Version: 6.0

Question: 1

In the circuit below, calculate the current 11.
68 mA
100 mA
192 mA
14.8 A



Answer: A

Explanation:

To find the current I_1, the equivalent resistance of the circuit must be found. Resistors R_2 and R_3 are in parallel, and R_1 is in series with their equivalent resistance. Therefore, the equivalent resistance of the entire circuit can be calculated as:

$$R_{eq} = R_1 + \frac{R_2 \times R_3}{R_2 + R_3} = 50\ \Omega + \frac{40\ \Omega \times 60\ \Omega}{40\ \Omega + 60\ \Omega} = 74\ \Omega$$

Then using Ohm's law, the current can be calculated as follows:

$$I = \frac{V}{R} = \frac{5\ \text{V}}{74\ \Omega} = 0.068\ \text{A} = 68\ \text{mA}$$

Question: 2

Which of the following is NOT a health effect associated with exposure to occupational noise?

A. acoustical trauma
B. shifts in threshold
C. tinnitus
D. fibromyalgia

Answer: D

Explanation:

Health effects associated with exposure to occupational noise include the following: acoustical traumas caused by a sudden, extremely loud noises; shifts in threshold due to short- or long-term exposure to noise; and tinnitus (ringing in the ears) caused by short- or long-term exposure to occupational noise.

Question: 3

The WZ Construction Company has 127 full-time workers. Each employee works a full year, or 2,000 hours, at the company. During this time, six recordable incidents occur. What is the incident rate of the company?

A. 3.38
B. 4.72
C. 7.62
D. 2,116.7

Answer:

Explanation:

Incident rate (in the below equation, IR) can be calculated using the following formula:

$$IR = \frac{\text{Number of OSHA recordable incidents} \times 200{,}000}{\text{Number of employee hours worked}}$$

We can calculate the incident rate for the company and time period in question using the numbers from the question, as follows:

$$IR = \frac{6 \times 200{,}000}{127 \times 2000} = \frac{1{,}200{,}000}{254{,}000} = 4.72$$

Question: 4

Which of the following is NOT a method of reducing the risk of excavation cave-ins?

A. shoring
B. benching
C. sloping
D. paneling

Answer: D

Explanation:

Shoring is the process of installing support members within an excavation. Benching is a method of cutting back the sides of an excavation in a step-like manner. Sloping is a method of cutting back the sides of an excavation in an even, ramp-like style.

Question: 5

Which of the following is NOT generally considered a fundamental principle of ergonomics as it relates to safety engineering?

A. "People differ from one another."
B. whenever possible, the job should be changed and not the worker."
C. "Output should never trump common sense:
D. "People should work smart."

Answer: C

Explanation:
There are four fundamental precepts of ergonomics as it relates to safety engineering: "people differ from one another"; "whenever possible, the job should be changed and not the worker"; "people should work smart"; and "people are more appropriate for some tasks than machines are, and vice versa."

Question: 6

The___effect is when an exposure to two hazardous chemicals results in a multiplicative or compounded effect on the body.

A. additive
B. synergistic
C. antagonistic
D. subtractive

Answer: B

Explanation:
Chemical synergy occurs when the effects of exposures to two separate chemicals are a multiple of each exposure. For example, an exposure to a substance that is 2% chemical A and a substance that is 8% chemical B causes a reaction 40 times greater than what either of the tw•o chemicals alone would cause. When the effects are summed, the interaction is termed additive. When the effects of the two chemicals are lessened, the interaction is termed antagonistic.

Question: 7

Which of the following is a control strategy for protecting against hazards associated

with confined space work?

A. A continuous air supply
B. Use of a buddy system
C. Evaluating potential hazards of the space immediately after entry
D. Use of a portable lighting system with redundant power supplies

Answer: B

Explanation:
Use of a buddy system is an excellent control strategy for protecting against hazards associated with confined space work The buddy system allows workers to monitor one another for the effects of hazardous atmospheres, heat stress, or supplied air system malfunctions. Other control strategies include assessing confined-space hazards prior to (not after) entry, worker training, installing accessible fire-suppression equipment, and ensuring that sufficient ventilation is available within the space.

Question: 8

Regarding ergonomics, most items are designed to accommodate populations in what range of heights?

A. 1st percentile female — 99th percentile male
B. 5th percentile female — 95th percentile male
C. 10th percentile female — 90th percentile male
D. percentile female — 99.9 percentile male

Answer: B

Explanation:
In ergonomics, most items are designed to comfortably accommodate populations in the range of height from a 5th percentile female to a 95th percentile male. In the United States, this would be a range of height from about 5 feet O inches through 6 feet 3 inches.

Question: 9

Hazardous wastes are usually disposed of either through____or____.

A. incineration / burial in permitted landfills
B. transmutation / reprocessing
C. recycling / stabilization
D. dissolution / enzymatic hydrolysis

Answer: A

Explanation:
Hazardous wastes are usually disposed of either through incineration or burial in permitted landfills. Incinerators often employ downstream scrubbers following combustion to help ensure that toxic gases do not get released into the environment. Landfills permitted for hazardous waste disposal must meet Environmental Protection Agency criteria to ensure that chemicals cannot migrate into groundwater or nearby soil media.

Question: 10

Auto ignition temperature is defined as the temperature at which__.

A. a volatile gas will explode
B. one watt of heat is produced per cubic centimeter of burned fuel
C. a fuel will combust without being exposed to an ignition source
D. a volatile material is in equilibrium phase between gas and flammable vapor

Answer: C

Explanation:
The auto ignition temperature for a fuel is defined as the temperature at which the fuel will combust without being exposed to an ignition source.

Question: 11

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

A. The skin is usually easily affected by these agents.
B. Permanent tissue damage often occurs as a result of exposure.
C. Mucus membranes are usually easily affected by these agents.
D. The degree of irritation depends on concentration and duration of contact.

Answer: B

Explanation:
Chemical irritants are compounds that usually adversely and temporarily affect the skin and mucus membranes, as well as the eyes and possibly the respiratory tract. The degree of irritation is directly related to the concentration of the irritant and the duration of contact. Irritants do not necessarily cause permanent tissue damage as a result of normal exposure. Examples of irritants include ammonia, ozone, chlorine, and nitrogen dioxide.

Question: 12

Which of the following is NOT generally true regarding biohazards?

A. Biohazards can be either animal- or plant-based.
B. Biohazards include certain types of bacteria viruses, and fungi.
C. Biohazards, by definition, are not allergenic in nature.
D. Biohazards of human origin are usually transmitted by some type of bodily fluid.

Answer: C

Explanation:
Biohazards can be either animal- or plant-based. They may include certain types of bacteria, viruses, or fungi. Also, when they originate from people, they are usually transmitted by some type of bodily fluid. In addition, they can be either toxic or allergenic in nature.