Tulane EPHOC Practice Exam (Sample)

Study Guide

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Questions

1. According to the Tenement Housing Act of 1867, which provision was required?

A. Two toilets per 20 occupants

B. All stairs must have railings

C. Every sleeping room must have ventilation

D. Five occupants maximum per dwelling

2. What should be included when educating about a contingency plan?

A. Notification of an emergency condition

B. Mapping too many evacuation routes

C. Ignoring public concerns

D. Providing outdated information

3. True or False: Two primary functions of a septic tank are to settle solids and provide anaerobic digestion.

A. True

B. False

C. Depends on the tank

D. Not applicable

4. Which environmental factor can contribute to increased rodent populations?

A. Low humidity

B. High levels of noise

C. Food waste accumulation

D. Excessive lighting

5. Which of the following is NOT a very common method of disinfection at wastewater treatment facilities?

A. Ozone

B. Chlorine

C. Xenon

D. UV Light

6. What controls are available for reducing emissions from mobile sources?

A. Catalytic oxidizer, emissions filters

B. Oxygenated fuels, emissions standards

C. All of the above

D. Only A and B

7. What does the acronym OSHA stand for?

A. Occupational Safety and Health Association

B. Occupational Safety and Health Administration

C. Office for Safety and Health Administration

D. Occupational Standards and Health Agency

8. What type of protection does an air gap provide?

A. Only from water contamination

B. Protection from back siphonage and back pressure

C. Protection from physical damage

D. No protection at all

9. Is the half-life of a radioactive element a physical constant that can be changed?

A. Yes, by altering the element's temperature

B. No, it cannot be changed by heating, freezing, or vaporizing

C. Yes, through chemical reactions

D. No, it can be altered with radiation exposure

10. Which of the following are effective and safe ways to keep pests out of your home?

A. Keep food in sealed containers

B. Keep a lid on the garbage can

C. Clean thoroughly on a regular basis

D. All of the above

Answers

1. C
2. A
3. A
4. C
5. C
6. C
7. B
8. B
9. B
10. D

Explanations

1. According to the Tenement Housing Act of 1867, which provision was required?

A. Two toilets per 20 occupants

B. All stairs must have railings

C. Every sleeping room must have ventilation

D. Five occupants maximum per dwelling

The Tenement Housing Act of 1867 was established to address the poor living conditions in tenement buildings, particularly in urban areas. One of the key provisions mandated by this act was that every sleeping room must have proper ventilation. This requirement was a crucial public health measure aimed at improving air quality and reducing the risk of disease in overcrowded and poorly designed housing. Adequate ventilation is essential for ensuring that occupants can breathe clean air and minimizing moisture buildup, which could lead to health problems. The emphasis on ventilation reflects the understanding during that period of the connection between living conditions and health outcomes. By requiring that each sleeping room have ventilation, the act aimed to mitigate issues such as airborne illnesses, inadequate airflow, and the negative impacts of overcrowding on residents' well-being. This focus on structural improvements represented a significant step in advancing housing standards and ensuring the safety and health of urban populations.

2. What should be included when educating about a contingency plan?

A. Notification of an emergency condition

B. Mapping too many evacuation routes

C. Ignoring public concerns

D. Providing outdated information

Including notification of an emergency condition in a contingency plan is essential because it ensures that all individuals involved are informed and aware of the situation. This aspect of education allows for efficient communication during a crisis, making sure that everyone knows what circumstances have arisen, the potential risks, and the appropriate actions to take. Effective notification systems help to mobilize resources and personnel swiftly and aid in the coordination of response efforts, thereby minimizing panic and confusion among those affected. Mapping too many evacuation routes can lead to confusion rather than clarity, as it may overwhelm individuals with options rather than providing a straightforward plan. Ignoring public concerns undermines the effectiveness of the plan, as community input is critical for addressing specific fears and preferences. Providing outdated information is detrimental to any contingency plan, as relying on obsolete data can impair the response and put lives at risk. Thus, proper notification of an emergency condition stands out as a crucial component of effective education surrounding a contingency plan.

3. True or False: Two primary functions of a septic tank are to settle solids and provide anaerobic digestion.

A. True

B. False

C. Depends on the tank

D. Not applicable

The statement is true because septic tanks are specifically designed with two primary functions: settling solids and providing anaerobic digestion. In a septic tank, waste water from a household flows into the tank, where the heavier solid materials settle at the bottom, forming a sludge layer. This process of settling is crucial as it allows for the separation of solids from the liquid effluent. Simultaneously, anaerobic bacteria thrive in the absence of oxygen in the sludge layer at the bottom of the tank. These bacteria break down organic matter, effectively digesting the waste and reducing the volume of solids in the tank. This anaerobic digestion is a natural process that reduces the accumulation of sludge over time and is key to the functioning of a septic system, ensuring that the system operates efficiently. Therefore, the functions of a septic tank as both a sedimentation vessel and a site for anaerobic digestion are integral to its purpose in wastewater management.

4. Which environmental factor can contribute to increased rodent populations?

A. Low humidity

B. High levels of noise

C. Food waste accumulation

D. Excessive lighting

The correct answer highlights the connection between food availability and rodent population growth. Rodents are opportunistic feeders, and the accumulation of food waste provides a consistent and readily accessible source of nourishment. When food waste is not properly managed, it creates an ideal environment for rodents to thrive, as they can easily find the sustenance they need to reproduce and survive. Factors like low humidity, high levels of noise, and excessive lighting do not provide the same critical resource for rodents. While these conditions may affect their behavior or habitat preferences, they do not directly contribute to their population increase in the way that plentiful food sources do. Thus, the accumulation of food waste stands out as the primary environmental factor that can significantly boost rodent populations.

5. Which of the following is NOT a very common method of disinfection at wastewater treatment facilities?

A. Ozone

B. Chlorine

C. Xenon

D. UV Light

In wastewater treatment facilities, common disinfection methods include chlorine, ozone, and UV light, all of which are widely used due to their effectiveness in eliminating pathogens and ensuring water safety. Chlorine has been traditionally used for its strong disinfectant properties and ease of use. Ozone is also an effective disinfectant, known for its ability to oxidize and kill a range of microorganisms without leaving harmful residues behind. UV light disinfection is gaining popularity due to its ability to effectively inactivate pathogens through exposure to ultraviolet radiation, making it a chemical-free option. In contrast, xenon is not typically employed as a method for disinfection in wastewater treatment processes. While xenon does produce ultraviolet light, its application is not as consistent or practical compared to UV light systems designed specifically for this purpose. Therefore, the choice of xenon as a disinfection method is not common in wastewater treatment facilities, differentiating it from the other options.

6. What controls are available for reducing emissions from mobile sources?

A. Catalytic oxidizer, emissions filters

B. Oxygenated fuels, emissions standards

C. All of the above

D. Only A and B

Reducing emissions from mobile sources is crucial for improving air quality and public health, and a variety of controls exist to achieve this goal. The correct answer encompasses both types of controls mentioned as they each play a vital role in managing emissions. Catalytic oxidizers and emissions filters are specific technologies used to reduce harmful pollutants from exhaust emissions. Catalytic oxidizers increase the efficiency of the combustion process, resulting in fewer unburned hydrocarbons and carbon monoxide being released. Emissions filters, such as particulate filters, capture solid particulates from the exhaust, which is particularly important in diesel engines. On the other hand, oxygenated fuels and emissions standards address emissions from a regulatory perspective. Oxygenated fuels, which contain added oxygenates like ethanol or methanol, promote more complete combustion, leading to lower emissions of carbon monoxide and hydrocarbons. Emissions standards set legally enforceable limits on the amount of pollutants that can be emitted from mobile sources, thereby pushing manufacturers to innovate and reduce emissions through improved technology. Considering all of these controls collectively enhances the effectiveness of reducing emissions from mobile sources, highlighting the importance of both technological and regulatory strategies in controlling pollution. This makes the comprehensive answer that includes all available options accurate and reflects the multifaceted approach required to tackle emissions effectively

7. What does the acronym OSHA stand for?

A. Occupational Safety and Health Association

B. Occupational Safety and Health Administration

C. Office for Safety and Health Administration

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The acronym OSHA stands for Occupational Safety and Health Administration. This federal agency is part of the United States Department of Labor and was created to ensure safe and healthy working conditions for employees by enforcing standards and providing training, outreach, education, and assistance. Establishing guidelines to minimize workplace hazards is a critical component of OSHA's mission, significantly contributing to the reduction of work-related injuries and illnesses across various industries. The other choices incorporate similar phrases but do not accurately reflect the official title. For instance, 'Occupational Safety and Health Association' suggests a collective group rather than a regulatory authority, while 'Office for Safety and Health Administration' mislabels the agency as an office rather than an administration. Lastly, 'Occupational Standards and Health Agency' changes the critical elements of the name and misrepresents its function and regulatory responsibilities. Thus, understanding the correct title is essential for recognizing OSHA's role in workplace safety.

8. What type of protection does an air gap provide?

A. Only from water contamination

B. Protection from back siphonage and back pressure

C. Protection from physical damage

D. No protection at all

An air gap is a crucial component in plumbing and water safety, specifically designed to prevent contamination of potable water supplies. Its primary function is to provide protection from back siphonage and back pressure. When there is a change in pressure within a plumbing system, such as during a drop in water pressure or when water flows in a reverse direction, contaminants can be drawn back into the clean water supply. This phenomenon is known as back siphonage. An air gap creates a physical separation between the water supply and any potential contaminants in a sink or other receptacle. By ensuring that there is an unobstructed vertical space between the end of the water outlet and the contaminated water source, it effectively prevents any backflow. In addition to back siphonage, the air gap also helps guard against back pressure, which can occur if the pressure in the supply line exceeds the pressure in the downstream system. The air gap ensures that even in scenarios of back pressure, there is no opportunity for water to flow back into the clean supply. This protective measure is essential in maintaining the integrity of drinking water supplies and adhering to health and safety regulations, which is why it is a common practice in plumbing design. The air gap can exist in various applications, such as

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The half-life of a radioactive element is indeed a physical constant that cannot be changed through external conditions or processes. This inherent property is determined by the type of isotope and its nuclear structure, which govern the stability and decay of the nucleus over time. When discussing half-life, it is crucial to understand that it is a measure of the time required for half of the radioactive atoms in a sample to decay into a different element or isotope. This process is influenced by forces within the nucleus rather than external factors. Factors such as temperature, pressure, or chemical reactions do not affect the half-life because these conditions primarily influence the electronic structure and interactions of atoms rather than the nuclear changes that define radioactivity. Similarly, exposure to radiation or radiation events can impact an atom's state but won't alter its fundamentally defined half-life. Thus, the statement that the half-life cannot be changed by heating, freezing, or vaporizing is accurate, reinforcing the understanding that it is a constant unique to each radioactive isotope.

10. Which of the following are effective and safe ways to keep pests out of your home?

A. Keep food in sealed containers

B. Keep a lid on the garbage can

C. Clean thoroughly on a regular basis

D. All of the above

The selection of all the options as an effective and safe way to keep pests out of your home is well-supported by standard pest management practices. Keeping food in sealed containers is essential because it denies pests access to a food source. Pests are attracted to easy meals, and sealed containers make it much more difficult for them to find food. Having a lid on the garbage can serves a similar purpose. It prevents pests from accessing the organic materials and food residues that are typically present in household waste. Without a lid, garbage becomes an open invitation for rodents, insects, and other pests. Cleaning thoroughly on a regular basis helps to remove crumbs, spills, and other remnants that can attract pests. Regular cleaning reduces not only the food sources available to pests but also the potential nesting sites they might find in clutter or unkempt areas. Overall, using these combined practices creates a comprehensive approach to pest management, making it significantly more challenging for pests to invade your living space. Hence, all these methods together form a robust strategy for keeping pests out effectively and safely.