

Septic Tank Manufacturer License Practice Test (Sample)

Study Guide



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SAMPLE

Questions

- 1. How can excessive organic material affect septic systems?**
 - A. It can enhance the digestion process**
 - B. It can improve wastewater quality**
 - C. It can overwhelm the system, leading to clogs and inefficiencies**
 - D. It has no significant effect on performance**
- 2. What is the effect of low temperatures on concrete?**
 - A. Accelerate set times**
 - B. Retard set times and strength gain**
 - C. Lower the water requirements**
 - D. Increase workability**
- 3. Which materials are commonly used in the construction of septic tanks?**
 - A. Wood, glass, and aluminum**
 - B. Steel, clay, and rubber**
 - C. Concrete, fiberglass, and polyethylene**
 - D. Brick, stone, and asphalt**
- 4. What is the maximum operational speed commonly used for external vibration?**
 - A. 4000 vpm**
 - B. 5000 vpm**
 - C. 6000 vpm**
 - D. 7000 vpm**
- 5. What is the diameter for #57 rock?**
 - A. 1/2 inch**
 - B. 3/4 inch**
 - C. 1 inch**
 - D. 1.5 inches**

- 6. What does consolidation refer to in concrete mixing?**
- A. The even distribution of all mix ingredients throughout the concrete mix**
 - B. The removal of air from cured concrete**
 - C. The increase of volume in wet concrete**
 - D. The process of hardening of concrete**
- 7. What is a leach field?**
- A. A system for storing sewage**
 - B. A component that disperses treated wastewater**
 - C. An area where solid waste is buried**
 - D. A treatment facility for hazardous waste**
- 8. What is typically the first step in the treatment process of sewage in a septic system?**
- A. Separation of solids and liquids**
 - B. Filtration of impurities**
 - C. Dosing of effluent**
 - D. Disinfection of treated effluent**
- 9. What do the terms "block outs" refer to in the context of a septic tank?**
- A. Expansion joints in concrete**
 - B. Openings in the septic tank**
 - C. Covering materials used for tanks**
 - D. Temporary construction supports**
- 10. What is "percolation testing" used for?**
- A. To assess the age of a septic system**
 - B. To evaluate how quickly soil absorbs water for septic systems**
 - C. To determine the cost of a septic tank**
 - D. To inspect for pests in the soil**

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. How can excessive organic material affect septic systems?

- A. It can enhance the digestion process
- B. It can improve wastewater quality
- C. It can overwhelm the system, leading to clogs and inefficiencies**
- D. It has no significant effect on performance

Excessive organic material can overwhelm septic systems, which can lead to serious issues such as clogs and inefficiencies. Septic systems are designed to treat a specific amount of organic matter, and when this threshold is exceeded, the process can become unbalanced. The overabundance of organic material can lead to a higher accumulation of solids in the tank, resulting in the formation of blockages that hinder the normal flow of wastewater. This not only affects the treatment process but can also cause backups in the plumbing and require costly repairs. Efficient septic system operation relies on maintaining a proper balance of organic inputs, and exceeding those limits disrupts the digestion process, making it difficult for the system to adequately break down and filter waste, ultimately compromising its effectiveness.

2. What is the effect of low temperatures on concrete?

- A. Accelerate set times
- B. Retard set times and strength gain**
- C. Lower the water requirements
- D. Increase workability

Low temperatures have a significant impact on the curing and setting of concrete. When concrete is exposed to cold conditions, the chemical reactions that lead to the curing process are slowed down. As a result, both the setting times and the rate at which concrete gains strength are adversely affected. The hydration process, which is essential for concrete to achieve its designed strength, depends heavily on temperature. At low temperatures, the rate of hydration reactions decreases, leading to delayed setting times. Consequently, it takes longer for the concrete to harden and reach its optimal strength, which can pose challenges for construction schedules and overall project timelines. Moreover, at very low temperatures, there is also a risk of freeze-thaw cycles that can cause damage to the concrete if not properly managed. Therefore, understanding the effects of temperature on concrete curing is crucial in ensuring the integrity and durability of concrete structures.

3. Which materials are commonly used in the construction of septic tanks?

- A. Wood, glass, and aluminum**
- B. Steel, clay, and rubber**
- C. Concrete, fiberglass, and polyethylene**
- D. Brick, stone, and asphalt**

The most commonly used materials for constructing septic tanks are concrete, fiberglass, and polyethylene. Concrete is favored for its durability and strength, ensuring that the tank can withstand soil pressure and resist cracking. It is also less prone to damage from the chemicals found in wastewater. Fiberglass offers an advantage in terms of lightweight design and corrosion resistance, making it a popular choice for areas where soil conditions may lead to corrosion in traditional materials. Polyethylene is also lightweight and resistant to rust and corrosion, and it is often used because of its ease of installation and cost-effectiveness. Other materials listed, such as wood, glass, aluminum, steel, clay, rubber, brick, stone, and asphalt, do not provide the same level of durability or resistance to degradation that septic tanks require. For example, wood can rot, glass can break, and aluminum may corrode over time when exposed to wastewater. Similarly, while bricks and stones can be used in some types of tanks, they are generally not as effective as the materials mentioned above for modern septic systems due to their labor-intensive installation and potential for water leakage.

4. What is the maximum operational speed commonly used for external vibration?

- A. 4000 vpm**
- B. 5000 vpm**
- C. 6000 vpm**
- D. 7000 vpm**

The maximum operational speed commonly used for external vibration in the context of septic tank systems, particularly for promoting proper settling and distribution during the treatment process, is often cited as 6000 vibrations per minute (vpm). This speed is considered effective for ensuring that solids are adequately mobilized without causing excessive disturbance or damage to the system. Using 6000 vpm helps to maintain a balance between effective agitation of the contents within the septic tank and the stability of the tank structure. At this speed, vibrations can enhance the breakdown of waste materials and promote more uniform flow patterns, facilitating better treatment outcomes. While other speeds may be listed, such as 4000, 5000, or 7000 vpm, they either fall outside the optimal range for operational efficiency or could potentially lead to issues such as structural compromise or ineffective treatment. Therefore, 6000 vpm is recognized as a common standard for external vibration in septic system operations.

5. What is the diameter for #57 rock?

- A. 1/2 inch
- B. 3/4 inch**
- C. 1 inch
- D. 1.5 inches

The diameter of #57 rock is indeed 3/4 inch. This classification refers to a specific size of crushed stone used in various construction and landscaping applications. The #57 designation indicates not only the size but also the intended use, as these small stones are ideal for drainage, backfill, and as a base for concrete slabs. Understanding this classification helps in selecting the right aggregate material for projects involving septic systems, as proper drainage and heavyweight distribution are critical for the functionality of these systems. Other sizes of aggregate, such as 1/2 inch, 1 inch, or 1.5 inches, represent different gradations that may not provide the same properties for drainage or structural support needed in specific installations. Hence, the identification of #57 rock as having a diameter of 3/4 inch is essential for ensuring effective and efficient septic system design and installation.

6. What does consolidation refer to in concrete mixing?

- A. The even distribution of all mix ingredients throughout the concrete mix**
- B. The removal of air from cured concrete
- C. The increase of volume in wet concrete
- D. The process of hardening of concrete

Consolidation in concrete mixing specifically refers to the even distribution of all mix ingredients throughout the concrete to ensure a homogeneous and uniform mixture. This process is crucial because it helps eliminate voids and air pockets within the mix, which can negatively impact the strength and durability of the final concrete product. Proper consolidation ensures that all components—such as cement, aggregates, and water—are uniformly combined, leading to optimal performance in structural applications. The other options describe different aspects of concrete. For instance, removing air from cured concrete is important for achieving better density but relates more to curing techniques and quality control than to the mixing process itself. The increase of volume in wet concrete doesn't accurately describe a process within mixing, as volume stability is a critical consideration during formulation and application, not a direct action in mixing. Lastly, the hardening of concrete is a different phase that occurs after mixing, involving hydration and setting, which solidifies the mixed components into a solid mass but is not related to the mixing process of consolidating materials uniformly.

7. What is a leach field?

- A. A system for storing sewage
- B. A component that disperses treated wastewater**
- C. An area where solid waste is buried
- D. A treatment facility for hazardous waste

A leach field is an essential component of a septic system designed to disperse treated wastewater into the soil. After wastewater flows from the septic tank, it typically undergoes a process of settling and separation, where solids settle at the bottom, and the liquid effluent is discharged. The leach field consists of a series of trenches or beds filled with gravel or rock, which provide a structure through which the treated wastewater can seep into the soil. This process is vital because the soil acts as a natural filter, further treating the wastewater by allowing microorganisms to break down any residual contaminants. The design of a leach field aims to prevent sewage from pooling on the surface and ensures the safe return of purified water to the groundwater, thus protecting the surrounding environment and public health. The characteristics of the soil and the proper design of the leach field are crucial to its effectiveness in treating and handling wastewater.

8. What is typically the first step in the treatment process of sewage in a septic system?

- A. Separation of solids and liquids**
- B. Filtration of impurities
- C. Dosing of effluent
- D. Disinfection of treated effluent

The first step in the treatment process of sewage in a septic system is the separation of solids and liquids. This initial stage is crucial because it allows for the efficient breakdown of organic matter and the effective treatment of wastewater. In a septic tank, when sewage enters, gravity causes the heavier solids to settle at the bottom, forming sludge, while lighter materials like fats, oils, and grease float to the surface, forming a scum layer. This separation not only helps in managing the waste but also prepares the liquid effluent for further treatment processes, such as biological treatment or filtration, that occur later in the system. Recognizing this foundational process is key to understanding how a septic system operates as a whole. The other steps mentioned, such as filtration of impurities, dosing of effluent, and disinfection of treated effluent, occur later in the treatment cycle and rely on the initial separation to function effectively.

9. What do the terms "block outs" refer to in the context of a septic tank?

- A. Expansion joints in concrete**
- B. Openings in the septic tank**
- C. Covering materials used for tanks**
- D. Temporary construction supports**

The term "block outs" in the context of a septic tank refers to openings in the septic tank. These openings are intentionally designed spaces that serve specific functions, such as providing access for maintenance or connections for plumbing lines. Typically, block outs are found in areas where future connections may need to be made, or where additional features, such as risers for access, are planned. Having these openings allows for efficient drainage and venting, which are crucial for the effective functioning of a septic system. This design consideration helps prevent issues like pressure build-up inside the tank, which could compromise the integrity of the septic system or lead to system failures. Understanding the role of block outs helps in both the installation and maintenance of septic systems, ensuring they operate smoothly and are accessible for necessary inspections and repairs.

10. What is "percolation testing" used for?

- A. To assess the age of a septic system**
- B. To evaluate how quickly soil absorbs water for septic systems**
- C. To determine the cost of a septic tank**
- D. To inspect for pests in the soil**

Percolation testing is specifically designed to evaluate how quickly soil absorbs water, which is a critical factor in the design and functionality of septic systems. This test involves digging test holes and monitoring the rate at which water drains through the soil. The results provide insight into the soil's capacity to treat and filter effluent from a septic system, ensuring that the system can function properly without causing surface water contamination or system failure. Understanding the percolation rate is vital for determining the appropriate size and type of septic system needed for a particular site, which contributes to effective waste management and environmental protection. Other choices, such as assessing the age of a septic system, determining costs, or inspecting for pests, do not relate to the primary function of percolation testing and are thus not relevant to this aspect of septic system evaluation.