

North Carolina General Contractors Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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SAMPLE

Questions

- 1. How is sedimentary rock typically formed?**
 - A. From volcanic eruptions**
 - B. From sediments being compressed by overlying materials**
 - C. From the cooling of magma**
 - D. From erosion of other rock types**
- 2. What is the height of 3 courses of brick?**
 - A. 6"**
 - B. 7"**
 - C. 8"**
 - D. 9"**
- 3. What is a change order in construction?**
 - A. A request for additional funds without any documentation**
 - B. A document that outlines changes to the original construction contract, including scope, time, and cost adjustments**
 - C. A verbal agreement to change project materials**
 - D. A discount offered to the homeowner**
- 4. How can you increase the compressive strength of mortar?**
 - A. By adding sand**
 - B. By using more water**
 - C. By adding cement**
 - D. By changing the lime type**
- 5. Why must contractors follow safety protocols on the job site?**
 - A. To avoid project delays**
 - B. To ensure the site is aesthetically pleasing**
 - C. To maintain workplace safety and legal compliance**
 - D. To satisfy client demands for speed**

- 6. How can contractors protect themselves from legal claims?**
- A. By minimizing insurance coverage**
 - B. By ensuring legal compliance and obtaining insurance**
 - C. By completing projects quickly**
 - D. By avoiding contracts altogether**
- 7. Which type of lime is known for its hydraulic properties?**
- A. Type N**
 - B. Type S**
 - C. Type M**
 - D. Type L**
- 8. What are the three methods of determining soil density?**
- A. Proctor test, Capillary test, Sand cone test**
 - B. Proctor test, Gravel test, Nuclear Density test**
 - C. Proctor test, Sand cone test, Nuclear Density test**
 - D. Sand testing, Cone index, Nuclear Density test**
- 9. What is an example of a strategy a general contractor might implement to mitigate risks?**
- A. Ignoring potential financial issues**
 - B. Conducting regular site inspections**
 - C. Avoiding communication with suppliers**
 - D. Reducing material quality standards**
- 10. What is the required tensile strength for silt fence fabric?**
- A. 20 PSI**
 - B. 25 PSI**
 - C. 30 PSI**
 - D. 35 PSI**

Answers

SAMPLE

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

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Explanations

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1. How is sedimentary rock typically formed?

- A. From volcanic eruptions
- B. From sediments being compressed by overlying materials**
- C. From the cooling of magma
- D. From erosion of other rock types

Sedimentary rock is typically formed through a process known as lithification, which involves the compression of sediments under significant pressure from overlying materials. Over time, layers of sediments, which can include minerals, organic materials, and fragments of other rocks, accumulate at the Earth's surface or on the ocean floor. As more layers build up, the weight of the overlying materials exerts pressure on the lower layers, causing them to compress and eventually cement together to form solid rock. This process highlights the importance of sedimentation in the rock cycle, where materials broken down from existing rocks undergo deposition, compaction, and cementation to form new rock types. While sedimentary rocks can also originate from the erosion of other rock types, it is the compression of these sediments that ultimately turns them into sedimentary rock.

2. What is the height of 3 courses of brick?

- A. 6"
- B. 7"
- C. 8"**
- D. 9"

The height of 3 courses of brick is determined by the standard size of a single brick. In general, a standard modular brick measures approximately 7.5 inches long, 3.5 inches wide, and 2.25 inches tall. When factoring in mortar joints that typically add about 0.5 inches between each course, the calculation for the height of 3 courses of brick would look like this: - The height of one course of brick alone is about 2.25 inches. - For three courses of brick, we multiply 2.25 inches by 3, which equals 6.75 inches. - Additionally, there are typically 2 mortar joints in a stack of 3 courses, each adding about 0.5 inches, leading to 1 inch due to the two joints ($0.5 \text{ inches} \times 2$). - Therefore, the total height is approximately $6.75 + 1 = 7.75$ inches total. Rounding this number typically results in 8 inches for practical applications, making 8 inches the accepted height when discussing courses of brickwork. This is why the answer is determined as 8 inches.

3. What is a change order in construction?

- A. A request for additional funds without any documentation
- B. A document that outlines changes to the original construction contract, including scope, time, and cost adjustments**
- C. A verbal agreement to change project materials
- D. A discount offered to the homeowner

A change order in construction is a formal document that outlines modifications to the original construction contract. It serves a critical role in managing changes that may arise during the project, addressing aspects such as the scope of work, adjustments to the timeline, and any changes in cost associated with the alterations. This documentation is essential to ensure that all parties involved are aware of the revisions and agree to them formally, thereby preventing misunderstandings and disputes further along in the project. With a change order, the contractor, client, and any other stakeholders can clearly outline what adjustments are being made, why they are necessary, and how they will impact the overall project. This legal acknowledgment protects both the contractor and the homeowner, ensuring that all changes are accounted for in writing, establishing formal agreements that can be referenced later if needed. Understanding change orders is crucial for successful project management in construction; it ensures compliance with contract stipulations and supports clear communication among all parties involved.

4. How can you increase the compressive strength of mortar?

- A. By adding sand
- B. By using more water
- C. By adding cement**
- D. By changing the lime type

Increasing the compressive strength of mortar can be effectively achieved by adding more cement to the mix. Cement is the primary binder in mortar, and its main role is to provide structural integrity and strength. When the quantity of cement is increased, the resulting chemical reactions—specifically, the hydration process—produce more calcium silicate hydrates, which contribute significantly to the material's strength. In contrast, the other choices do not contribute positively to compressive strength. Adding more sand dilutes the cement content and can reduce the overall strength. Increasing the water content, while sometimes necessary for workability, can lead to a weaker mix due to higher porosity if not managed properly. Changing the type of lime may affect flexibility and workability, but it does not inherently increase compressive strength as effectively as increasing the cement quantity does.

5. Why must contractors follow safety protocols on the job site?

- A. To avoid project delays**
- B. To ensure the site is aesthetically pleasing**
- C. To maintain workplace safety and legal compliance**
- D. To satisfy client demands for speed**

Following safety protocols on the job site is essential for maintaining workplace safety and ensuring legal compliance. Safety protocols are designed to protect workers from accidents and injuries that can occur due to the inherently hazardous nature of construction work. By adhering to these protocols, contractors create a safer work environment, which not only safeguards the health and well-being of all personnel on site but also reduces the likelihood of accidents that can disrupt the project. Additionally, compliance with safety regulations is often mandated by law. Failing to follow established safety protocols can result in legal penalties for contractors, including fines or even the suspension of their license. Moreover, a commitment to safety fosters a culture of responsibility, ensuring that all workers understand the importance of their own safety and that of their colleagues. The other options do not fully encapsulate the critical nature of safety protocols. While avoiding project delays and meeting client demands might be important for a project's success, these factors are secondary to the fundamental need to ensure safety and compliance in the workplace. Aesthetics, while relevant in some contexts, do not address the core purpose of safety regulations. Therefore, the primary rationale for following safety protocols centers on protecting individuals and adhering to legal requirements.

6. How can contractors protect themselves from legal claims?

- A. By minimizing insurance coverage**
- B. By ensuring legal compliance and obtaining insurance**
- C. By completing projects quickly**
- D. By avoiding contracts altogether**

To effectively protect themselves from legal claims, contractors should focus on ensuring legal compliance and obtaining insurance. Legal compliance involves adhering to all local, state, and federal laws and regulations relevant to their work. This can include building codes, safety standards, and employment laws. By following these regulations, contractors reduce the risk of legal issues arising from non-compliance, which could lead to lawsuits or penalties. In addition to compliance, securing adequate insurance coverage is crucial. Insurance acts as a safety net for contractors in the event of claims related to property damage, workers' compensation, or general liability. Having the right insurance policies in place can mitigate financial loss and provide legal representation when needed. Completing projects quickly does not safeguard against claims and may even compromise quality, potentially leading to disputes. Minimizing insurance coverage actually increases risk, leaving contractors vulnerable to significant financial consequences in the event of a claim. Avoiding contracts entirely is not a viable option, as contracts are essential for defining the scope of work and responsibilities, and without them, disputes are more likely to arise. By combining legal compliance with appropriate insurance, contractors bolster their protection against potential legal claims and foster a more stable operating environment.

7. Which type of lime is known for its hydraulic properties?

- A. Type N**
- B. Type S**
- C. Type M**
- D. Type L**

Type M lime is recognized for its hydraulic properties, meaning it can set and harden in the presence of water. This characteristic makes it suitable for a variety of construction applications where moisture resistance is essential, such as in masonry and construction projects exposed to wet conditions. Hydraulic limes, such as Type M, contain a higher proportion of calcium silicates and aluminates, which react chemically with water to form compounds that contribute to strength and durability once cured. As a result, Type M lime is often chosen for projects where increased strength is required, along with the ability to resist the effects of moisture. In contrast, other types of lime, such as Type N and Type S, are generally non-hydraulic or have limited hydraulic properties, making them more suitable for applications that do not involve significant exposure to moisture or require rapid setting.

8. What are the three methods of determining soil density?

- A. Proctor test, Capillary test, Sand cone test**
- B. Proctor test, Gravel test, Nuclear Density test**
- C. Proctor test, Sand cone test, Nuclear Density test**
- D. Sand testing, Cone index, Nuclear Density test**

The three methods of determining soil density include the Proctor test, the Sand cone test, and the Nuclear Density test, which is why this answer is correct. The Proctor test is commonly used to assess the optimum moisture content at which a given soil type will densify to its maximum density. This helps ensure that the soil has enough strength and stability for construction projects. The Sand cone test is another field method used to measure the in-place density of soil. It involves using a calibrated sand cone apparatus, where the volume of sand that fills a hole dug in the soil is measured. This allows for a direct calculation of the soil's density in its natural state. Lastly, the Nuclear Density test utilizes radioactive isotopes to measure the density of the soil. This method provides rapid and accurate results in the field, allowing for immediate assessment of soil density conditions. The other provided options include methods or tests that are either not commonly associated with measuring soil density or do not fit within the standard practices used in civil engineering and construction. For instance, the Gravel test and Cone index do not specifically determine soil density, and Sand testing typically refers to other properties of sand rather than soil density.

9. What is an example of a strategy a general contractor might implement to mitigate risks?

- A. Ignoring potential financial issues**
- B. Conducting regular site inspections**
- C. Avoiding communication with suppliers**
- D. Reducing material quality standards**

Conducting regular site inspections is an effective strategy for a general contractor to mitigate risks. This proactive approach allows the contractor to identify potential safety hazards, code violations, and quality issues early in the construction process. By systematically evaluating the site, the contractor can ensure work is proceeding as planned and that compliance with specifications and regulations is maintained. Regular inspections foster accountability among subcontractors and workers, contributing to a safer work environment and reducing the likelihood of costly delays or accidents. Implementing this strategy ultimately enhances the project's overall success and helps in managing both time and budget effectively.

10. What is the required tensile strength for silt fence fabric?

- A. 20 PSI**
- B. 25 PSI**
- C. 30 PSI**
- D. 35 PSI**

The required tensile strength for silt fence fabric is specified to ensure that the material can withstand the environmental conditions while effectively controlling sediment and water flow. The tensile strength of 30 PSI provides a robust level of durability, allowing the silt fence to endure stress without tearing or failing, especially in areas subjected to runoff and soil erosion. In scenarios where silt fences are deployed, they face significant pressure from water and sediment that can lead to strain on the fabric. A tensile strength of 30 PSI is measured to provide a balance between flexibility and strength, enabling it to hold up against these conditions without losing its effectiveness in preventing sediment from leaving the construction site. This specification helps ensure compliance with construction and environmental regulations, ultimately supporting best practices in erosion and sediment control. Therefore, knowing that the correct tension strength for such applications is 30 PSI is essential for those involved in construction and soil management practices in North Carolina.