

Overhead Crane Practice Test (Sample)

Study Guide



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SAMPLE

Questions

SAMPLE

- 1. What should be done to ensure safe operation of remote or radio control devices before use?**
 - A. Change the battery at the beginning of the shift**
 - B. Inspect the electrical connectors**
 - C. Verify the load weight**
 - D. Check the condition of the crane.**
- 2. Which of the following ASME standards is specifically for below the hook lifting devices?**
 - A. ASME B30.19**
 - B. ASME B30.20**
 - C. ASME B30.79**
 - D. ASME B30.10**
- 3. According to ASME B30.2, what is the required safety factor for rigging?**
 - A. 2 to 1**
 - B. 5 to 1**
 - C. 4 to 1**
 - D. 3 to 1**
- 4. How many wraps can an overhead crane with a lower limit device have left on the drum at its lowest point, according to A.S.M.E. B30.2?**
 - A. Zero**
 - B. One**
 - C. Two**
 - D. Three**
- 5. Which OSHA regulation provides information about hoisting slings?**
 - A. 1910.180**
 - B. 1910.184**
 - C. 1910.550**
 - D. 1910.601**

- 6. During a routine inspection, which component of an overhead crane is essential to check for functionality?**
- A. Cables and chains**
 - B. The operator's manual**
 - C. The load capacity chart**
 - D. The area surrounding the crane**
- 7. For handling long loads, which device is typically used?**
- A. A hook**
 - B. A spreader beam**
 - C. A hoist**
 - D. A chain block**
- 8. How can you determine the center of gravity of a load?**
- A. By its color**
 - B. By balancing the load on a single point**
 - C. By measuring the height of the load**
 - D. By estimating based on previous lifts**
- 9. According to OSHA, what is the maximum hook throat opening allowed?**
- A. 5 inches**
 - B. 20 inches**
 - C. 10 inches**
 - D. 15% of the hook rated capacity**
- 10. If machinery on the crane is found to be defective, what should the operator do?**
- A. Make minor repairs immediately**
 - B. Report it to the supervisor**
 - C. Continue operations until the end of the day**
 - D. Inspect it personally**

Answers

SAMPLE

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

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Explanations

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1. What should be done to ensure safe operation of remote or radio control devices before use?

- A. Change the battery at the beginning of the shift**
- B. Inspect the electrical connectors**
- C. Verify the load weight**
- D. Check the condition of the crane.**

Changing the battery at the beginning of the shift is a vital practice to ensure the safe operation of remote or radio control devices. A fully charged and reliable battery is crucial for maintaining the functionality of the control device, as any failure in the battery during operation could lead to unexpected loss of control, which poses significant safety risks. Operators must ensure that their equipment is ready for safe use, and starting with a fresh battery minimizes the chances of power loss during critical operations, enhancing overall safety and efficiency. Other options, while important for overall safety, do not directly relate to the immediate operational readiness of remote control devices. Inspecting electrical connectors ensures proper connections, verifying load weight is necessary for safe lifting practices, and checking the crane's condition is fundamental for crane operation safety, but they do not address the initial power readiness that a fresh battery does.

2. Which of the following ASME standards is specifically for below the hook lifting devices?

- A. ASME B30.19**
- B. ASME B30.20**
- C. ASME B30.79**
- D. ASME B30.10**

The correct choice pertains to ASME B30.20, which is specifically dedicated to below-the-hook lifting devices. This standard outlines the requirements for the design, inspection, testing, and operation of various types of lifting devices that attach to the load and provide additional functionality, such as hooks, slings, and various custom devices used in conjunction with cranes and hoists. This standard is critical for ensuring safety and reliability in operations involving lifting equipment, emphasizing the importance of using appropriate devices that are designed for the intended loads and environmental conditions. Proper adherence to ASME B30.20 helps to minimize risks during lifting operations by providing guidelines that address the structural integrity and operational practices associated with these lifting devices. The other standards listed focus on different aspects of lifting and hoisting equipment. For instance, ASME B30.19 pertains to the design and use of overhead hoists in general, while ASME B30.79 deals with the use of winches. ASME B30.10 addresses hooks used in lifting operations, but it does not encompass the broader category of below-the-hook devices as a whole.

3. According to ASME B30.2, what is the required safety factor for rigging?

- A. 2 to 1
- B. 5 to 1**
- C. 4 to 1
- D. 3 to 1

The required safety factor for rigging according to ASME B30.2 is indeed five to one. This safety factor is critical because it ensures that the rigging equipment can withstand loads that are significantly higher than their rated capacities. By incorporating a safety factor of five, the standard accounts for various potential factors that could affect the rigging's performance, such as dynamic loads, wear and tear, and the environmental conditions under which the rigging operates. For example, if a piece of rigging is rated for a specific load, the inclusion of a five to one safety factor means that it should ideally be able to support five times that load without failure. This provides an additional margin of safety that helps prevent accidents and injuries during lifting operations, making it essential for safe crane operation and rigging practices. The choice reflects the industry standard for ensuring that workers are protected and that equipment operates safely under various conditions.

4. How many wraps can an overhead crane with a lower limit device have left on the drum at its lowest point, according to A.S.M.E. B30.2?

- A. Zero
- B. One**
- C. Two
- D. Three

The guidelines set forth by A.S.M.E. B30.2 indicate that an overhead crane equipped with a lower limit device should have one wrap of rope left on the drum at its lowest position. This is to ensure that there is enough rope available to prevent potential accidents or failures when the crane is at its lowest operating point. Having one wrap remaining helps maintain the integrity of the rope and ensures that the load remains secure, allowing for safe operation. If there were zero wraps left, the risk of the rope slipping off the drum would increase significantly, leading to possible hazards. Similarly, having more than one wrap could result in unnecessary tension on the rope, affecting its longevity and safety. Therefore, the regulation emphasizes that leaving one wrap on the drum at its lowest point strikes the optimal balance for safe operation.

5. Which OSHA regulation provides information about hoisting slings?

- A. 1910.180**
- B. 1910.184**
- C. 1910.550**
- D. 1910.601**

The regulation that specifically addresses hoisting slings is 1910.184. This section of OSHA standards outlines the requirements for the use of slings in overhead hoisting operations, including general specifications, material handling, safe practices, and other criteria necessary to ensure the safety and effectiveness of sling operations. Compliance with 1910.184 helps to prevent accidents and injuries related to lifting operations, thereby promoting a safer workplace environment. The other regulations mentioned do not provide the same detailed information about hoisting slings. For instance, 1910.180 pertains primarily to the operation and maintenance of overhead and gantry cranes, while 1910.550 covers general requirements related to powered industrial trucks, and 1910.601 provides regulations concerning the wiring design and protection for electrical installations. Therefore, 1910.184 is the most relevant regulation for understanding the specifics of hoisting slings in the context of overhead crane operations.

6. During a routine inspection, which component of an overhead crane is essential to check for functionality?

- A. Cables and chains**
- B. The operator's manual**
- C. The load capacity chart**
- D. The area surrounding the crane**

It's crucial to check the cables and chains during a routine inspection of an overhead crane because they are responsible for lifting and supporting the load. Any wear, fraying, or damage to these components can lead to catastrophic failures, posing risks to safety and the integrity of the loads being lifted. Regularly inspecting cables and chains helps ensure that they are in good working condition, compliant with safety standards, and capable of handling the required loads without risk of snapping or malfunctioning. While the operator's manual and load capacity chart are important for understanding operational procedures and safe lifting limits, they do not serve as functional components of the crane. Similarly, while checking the area surrounding the crane is important for safety and operational awareness, it does not directly relate to the crane's mechanical functionality. Thus, the cables and chains stand out as the essential components that directly impact the crane's ability to function safely and effectively.

7. For handling long loads, which device is typically used?

- A. A hook**
- B. A spreader beam**
- C. A hoist**
- D. A chain block**

Using a spreader beam for handling long loads is beneficial because it helps distribute the load evenly, reducing the risk of bending or warping the material being transported. The spreader beam increases the stability of the load during lifting, allowing for safe handling of awkward or long items that could otherwise tip or swing if lifted with a single point attachment like a hook. It also creates a wider lift point, which minimizes stress on the load and the lifting equipment, enhancing overall safety and efficiency during operations involving long materials. This method aligns with best practices in overhead crane operations, ensuring that the center of gravity remains balanced throughout the lift.

8. How can you determine the center of gravity of a load?

- A. By its color**
- B. By balancing the load on a single point**
- C. By measuring the height of the load**
- D. By estimating based on previous lifts**

Determining the center of gravity of a load is best achieved by balancing the load on a single point. This method involves finding the point at which the load can be suspended without tipping or falling to one side. When the load is balanced in this manner, the center of gravity is at that balancing point, as it indicates where the weight is evenly distributed around it. This is a practical approach that allows for precise identification of the center of gravity, which is crucial for safe lifting and maneuvering with an overhead crane. Other methods, such as estimating based on previous lifts or measuring the height of the load, do not provide an accurate determination of the center of gravity. Estimations can vary significantly based on the individual characteristics of the load, while height measurements alone do not account for the distribution of weight across the load. Similarly, identifying it by color does not provide any relevant information regarding the physical properties that affect balance and weight distribution. Thus, balancing the load is the most effective and reliable method for determining its center of gravity.

9. According to OSHA, what is the maximum hook throat opening allowed?

- A. 5 inches**
- B. 20 inches**
- C. 10 inches**
- D. 15% of the hook rated capacity**

The maximum hook throat opening allowed according to OSHA standards is based on safety regulations that ensure the hook can properly secure and hold the load without risk of slippage or failure. The standard specifies a maximum throat opening of 20 inches. This size allows for sufficient clearance to accommodate various load shapes and sizes while maintaining the integrity and safety of the lifting operation. It's crucial for hooks to have a throat opening that is not overly large to prevent loads from accidentally slipping out. A larger opening increases the risk of accidental disconnection, which can lead to hazardous situations. Ensuring the hook throat opening does not exceed this specified size contributes to safe lifting practices. The other options reflect much smaller throat openings or a percentage of the hook's rated capacity, which do not align with OSHA's prescribed maximum. Therefore, the correct answer about the maximum throat opening helps ensure compliance with safety standards in overhead crane operations.

10. If machinery on the crane is found to be defective, what should the operator do?

- A. Make minor repairs immediately**
- B. Report it to the supervisor**
- C. Continue operations until the end of the day**
- D. Inspect it personally**

When machinery on the crane is found to be defective, the operator should report it to the supervisor. This ensures that the issue is documented and assessed by a qualified individual who can take the appropriate necessary actions, such as scheduling repairs or conducting further inspections. Reporting is critical for maintaining safety and operational integrity, as it prevents the risk of continued operation of faulty equipment, which could lead to accidents or further damage. While making minor repairs may seem like a quick solution, it is essential to have the proper oversight and verification that the issue is fully resolved, which might not be achievable without involving supervision. Continuing operations with known defects is highly unsafe and poses a significant risk to personnel and equipment. Personal inspections, while sometimes necessary, should be done under the direction of a supervisor, particularly if the defects could impact safety or compliance. Therefore, communicating the defect to a supervisor is the most responsible course of action.