

Certified Maintenance and Reliability Technician (CMRT) Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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SAMPLE

Questions

- 1. In accordance with OSHA, what is the minimum required eye protection when using an oxygen/acetylene torch?**
 - A. Protective goggles**
 - B. Safety glasses**
 - C. Shade glasses**
 - D. Face shield**
- 2. What is the best way to correct a rocking soft foot condition?**
 - A. Loosen all feet and realign**
 - B. Shimming the soft feet according to the air gap measured**
 - C. Replacing the soft feet entirely**
 - D. Increasing torque on the bolts**
- 3. What does steel pipe scheduling indicate?**
 - A. Pipe length**
 - B. Pipe wall thickness**
 - C. Pipe material type**
 - D. Pipe connection type**
- 4. What is a primary goal of troubleshooting?**
 - A. To replace faulty equipment**
 - B. To conduct a thorough investigation**
 - C. To get the equipment working again**
 - D. To minimize downtime**
- 5. What can happen if excessive force is applied during bearing removal?**
 - A. Improved performance**
 - B. Increased lifespan**
 - C. Damage to components**
 - D. Faster removal**

- 6. An equipment history log is useful for understanding what?**
- A. Technical specifications**
 - B. Recent trends in performance**
 - C. Past problems that have occurred**
 - D. Future maintenance schedules**
- 7. How are files classified?**
- A. By material**
 - B. By shape**
 - C. By size**
 - D. By the cut**
- 8. What does effective maintenance feedback contribute to in a FRACAS system?**
- A. Immediate repairs**
 - B. Preventive action for future failures**
 - C. Resource reallocation**
 - D. Increased reporting frequency**
- 9. What is a likely cause of high vibration readings in the axial direction during the startup of a pump?**
- A. Bearing wear**
 - B. Coupling misalignment**
 - C. Pump cavitation**
 - D. Fluid viscosity**
- 10. What is the first step in isolating the cause of a problem?**
- A. The last repair log**
 - B. The most recent maintenance records**
 - C. The equipment's operational history**
 - D. Consulting the manual**

Answers

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

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Explanations

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1. In accordance with OSHA, what is the minimum required eye protection when using an oxygen/acetylene torch?

- A. Protective goggles**
- B. Safety glasses**
- C. Shade glasses**
- D. Face shield**

When using an oxygen/acetylene torch, the minimum required eye protection, according to OSHA standards, is shade glasses. This type of eye protection is specifically designed to protect your eyes from the intense light and heat generated during the cutting or welding process. The shade in the glasses helps to filter out harmful ultraviolet (UV) and infrared (IR) radiation produced by the flames, preventing potential long-term damage to the eyes. In addition, shade glasses often have specific tint ratings that correspond to different types of welding and cutting activities, allowing users to select the appropriate level of protection for various tasks. This focus on managing light intensity is critical, as improper eye protection can result in conditions such as flash burn, which can be debilitating. The other types of eye protection, while beneficial in various contexts, do not meet the minimum requirements for use with an oxygen/acetylene torch. Safety glasses, for example, typically provide limited protection against radiant energy. Protective goggles offer a seal around the eyes, which is helpful for certain applications but do not specifically protect against the high-intensity light. Face shields provide broader face protection but still require the wearer to have appropriate eyewear underneath to maintain compliance in high-risk environments.

2. What is the best way to correct a rocking soft foot condition?

- A. Loosen all feet and realign**
- B. Shimming the soft feet according to the air gap measured**
- C. Replacing the soft feet entirely**
- D. Increasing torque on the bolts**

The best method to correct a rocking soft foot condition is to shim the soft feet according to the air gap measured. This approach directly addresses the issue by compensating for any uneven contact between the base of the machine and the foundation. When a machine has a soft foot, it means that one or more of its feet do not sit evenly on the base, leading to misalignment and operational issues. By shimming, you can achieve a uniform contact across all feet, which stabilizes the machine and reduces vibrations. Proper shimming ensures that the air gap is eliminated, and the machine operates effectively without the rock or wobble that comes with a soft foot condition. This method is also more precise, allowing for a tailored correction based on the specific measurements taken. Other methods like loosening all feet and realigning may temporarily mitigate the issue but do not provide a permanent fix. Replacing the soft feet entirely would involve more extensive work and may not be necessary if shimming can effectively resolve the problem. Simply increasing torque on the bolts could lead to further misalignment or exacerbation of the issue without addressing the root cause of the rocking. Thus, shimming is the most effective and straightforward solution for correcting a rocking soft foot condition.

3. What does steel pipe scheduling indicate?

- A. Pipe length
- B. Pipe wall thickness**
- C. Pipe material type
- D. Pipe connection type

Steel pipe scheduling is a system that classifies pipes based on their wall thickness relative to their diameter. The schedule number indicates the pipe's wall thickness, and thus, it directly impacts the pipe's ability to handle pressure and the overall strength of the structure in which it is used. For example, a higher schedule number corresponds to a thicker wall, which is capable of withstanding greater pressure. This measure is essential in many applications, particularly in industries such as oil and gas, where the integrity of piping systems is crucial for safety and efficiency. The other options pertain to different attributes of pipes. Pipe length is a separate specification that describes how long the pipe is; pipe material type refers to the substance from which the pipe is made, such as steel, PVC, or copper; and pipe connection type indicates how the pipes are joined together, such as welded, threaded, or flanged connections. None of these directly relate to the concept of scheduling in the context of steel pipes.

4. What is a primary goal of troubleshooting?

- A. To replace faulty equipment
- B. To conduct a thorough investigation
- C. To get the equipment working again**
- D. To minimize downtime

The primary goal of troubleshooting is to get the equipment working again. In any maintenance and reliability context, troubleshooting is a systematic process used to identify the root causes of equipment failures or malfunctions. The ultimate objective of this process is to restore functionality to the equipment, ensuring that it operates as intended. While conducting a thorough investigation is important as part of troubleshooting, and minimizing downtime is often a critical consideration in maintenance practices, the overarching purpose remains centered on operational restoration. Replacing faulty equipment may be a potential outcome of troubleshooting, but it is not the goal itself; rather, troubleshooting seeks to determine whether repairs can be made to restore functionality without the need for replacement. Hence, the emphasis is on diagnosing the issue and taking corrective actions that enable the equipment to resume its regular operation efficiently.

5. What can happen if excessive force is applied during bearing removal?

- A. Improved performance**
- B. Increased lifespan**
- C. Damage to components**
- D. Faster removal**

Excessive force applied during bearing removal can lead to damage to components, which is why this choice is the correct answer. When too much force is used, it can result in deformation, cracking, or breaking of the bearing itself, as well as damage to the housing or surrounding components. Such damage may necessitate expensive repairs or replacements, creating delays and increasing downtime. The other choices suggest positive outcomes that do not occur with excessive force. Improved performance and increased lifespan of the equipment are not achievable when parts sustain damage. While faster removal may seem beneficial, it comes at the cost of risking damage to the components, which ultimately negates any gains in efficiency. Proper removal techniques and the use of appropriate tools are crucial for maintaining the integrity of the equipment.

6. An equipment history log is useful for understanding what?

- A. Technical specifications**
- B. Recent trends in performance**
- C. Past problems that have occurred**
- D. Future maintenance schedules**

An equipment history log is particularly valuable for understanding past problems that have occurred. This log serves as a record of various maintenance activities, repairs, and failures associated with equipment over time. It provides insights into the frequency and types of issues that have arisen, which can be critical for identifying recurring problems. By analyzing this historical data, maintenance teams can pinpoint patterns that may indicate underlying issues, helping to prevent future failures. While the other aspects are important in their own right—such as technical specifications that describe the equipment's capabilities, recent trends in performance that might inform operational efficiency, or future maintenance schedules that help with planning—those elements do not directly emphasize the primary benefit of the equipment history log. The log's main focus is on documenting and reflecting past experiences, which informs preventive maintenance strategies and improves overall reliability.

7. How are files classified?

- A. By material**
- B. By shape**
- C. By size**
- D. By the cut**

Files are classified by the cut because the cut refers to the shape and spacing of the teeth

8. What does effective maintenance feedback contribute to in a FRACAS system?

- A. Immediate repairs**
- B. Preventive action for future failures**
- C. Resource reallocation**
- D. Increased reporting frequency**

Effective maintenance feedback plays a critical role in a Failure Reporting, Analysis, and Corrective Action System (FRACAS) by facilitating preventive action for future failures. When maintenance teams analyze feedback from past failures, they can identify patterns and root causes that may lead to similar issues occurring again. This analysis allows organizations to implement changes to processes, perform design modifications, or improve maintenance practices aimed at preventing these failures from reoccurring. Preventive actions can include revising maintenance schedules, enhancing training for personnel, or upgrading equipment based on identified weaknesses. By taking a proactive approach, organizations can minimize downtime, reduce repair costs, and improve overall equipment reliability and availability. Other choices, while related to maintenance activities, do not directly capture the essence of what effective maintenance feedback achieves in a FRACAS context. Immediate repairs focus on addressing faults as they occur rather than preventing them. Resource reallocation pertains to how resources are utilized but does not encapsulate the preventive measures derived from maintenance feedback. Increased reporting frequency can enhance data collection but does not ensure that the insights gleaned from the data result in preventive actions. Thus, the most fitting contribution of effective maintenance feedback in a FRACAS system is the ability to create and implement preventive actions for future failures.

9. What is a likely cause of high vibration readings in the axial direction during the startup of a pump?

- A. Bearing wear**
- B. Coupling misalignment**
- C. Pump cavitation**
- D. Fluid viscosity**

High vibration readings in the axial direction during the startup of a pump are often indicative of coupling misalignment. When a pump and its motor are not aligned properly, it can lead to unbalanced forces during operation. This misalignment creates additional stress on the pump's components, which can generate excessive vibrations as the pump starts up and ramps up to its operational speed. In the context of startup conditions, misalignment becomes especially critical, as the abrupt changes in speed can exacerbate any misalignment issues, leading to higher vibration levels being recorded in the axial direction. Proper alignment between the pump and the motor is essential to ensure smooth operation and to minimize wear and tear, ensuring the longevity of the equipment. The other options, while related to pump operation, do not specifically address the axial vibration issue during startup in the same way as coupling misalignment does. For instance, bearing wear typically results in increased vibration over time rather than specifically at startup, while cavitation usually manifests through radial vibrations instead. Fluid viscosity can influence the overall operation, but it tends to affect the flow characteristics rather than directly causing high axial vibrations during startup.

10. What is the first step in isolating the cause of a problem?

- A. The last repair log**
- B. The most recent maintenance records**
- C. The equipment's operational history**
- D. Consulting the manual**

The most effective first step in isolating the cause of a problem is to review the last repair log. This log provides a chronological account of the most recent maintenance activities, repairs, and associated observations regarding the equipment. By examining the last repair log, you can identify any recent changes or fixes that could be relevant to the current issue. This data helps you to pinpoint what actions were taken last, which may directly correlate with the present malfunction. Additionally, understanding the context around recent repairs can give insights into whether previous solutions were effective or if they created new problems. This historical perspective is crucial in diagnosing issues, as it may indicate patterns or recurring problems that have not been successfully resolved. While the most recent maintenance records, the equipment's operational history, and consulting the manual can be beneficial at different stages of troubleshooting, the last repair log serves as a focal point for immediate context regarding what has transpired just before the problem arose. This makes it the most logical starting point for effective troubleshooting.