Machinist's Mate (MM) Advancement Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Table of Contents

Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- **Practice answering questions under realistic conditions,**
- **Improve accuracy and speed,**
- **Review explanations to strengthen weak areas, and**
- **Approach the exam with greater confidence.**

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Don't worry about getting everything right, your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations, and take breaks to retain information better.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning.

7. Use Other Tools

Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There’s no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly — adapt the tips above to fit your pace and learning style. You've got this!

Questions

1. Which person is ultimately responsible for the safety of a space that may have gas contamination?

A. Engineering Officer

B. Damage Control Assistant

C. Gas Free Engineer

D. Chief Engineer

2. Which pressure must safeties be lifted to if a steaming boiler suffers a ruptured tube?

A. 0 psig

B. 10 psig

C. 15 psig

D. 20 psig

3. In a steam turbine, what role do bearings play?

A. Support rotor weight only

B. Reduce friction and maintain alignment

C. Control steam flow

D. Regulate temperature

4. What type of tile is made of silicon carbide?

A. Baffle tile

B. Insulation tile

C. Refractory tile

D. Acoustic tile

5. What is the primary role of the Engineering Officer of the Watch (EOOW)?

A. Oversee daily ship operations

B. Coordinate navigation activities

C. Manage the engineering plant and safety

D. Lead maintenance teams

6. What is the operating pressure for testing rotary soot blowers as per PMS?

A. 250 psi plus or minus 25 psi

B. 275 psi plus or minus 25 psi

C. 300 psi plus or minus 25 psi

D. 350 psi plus or minus 25 psi

7. Which part of the three-element feedback system is essential for comparing feed flow with steam flow?

A. Flow meter

B. Steam flow/feed flow differential relay

C. Temperature sensor

D. Pressure gauge

8. At what vacuum is the generator brought up to speed after starting an SSTG?

A. 10 inches

B. 15 inches

C. 20 inches

D. 25 inches

9. How is propulsion turbine bearing wear determined?

A. By comparing the rotor journal and bearing diameters

B. By examining the turbine casing for damage

C. By measuring the oil clearances and comparing the readings

D. By inspecting the rotor for uneven wear

10. What type of valve is used on overboard overflows to prevent backflow of water from the sea?

A. Ball Valve

B. Gate Valve

C. Check Valve

D. Butterfly Valve

Answers

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

Explanations

1. Which person is ultimately responsible for the safety of a space that may have gas contamination?

A. Engineering Officer

B. Damage Control Assistant

C. Gas Free Engineer

D. Chief Engineer

The Gas Free Engineer is ultimately responsible for the safety of a space that may have gas contamination. This role involves conducting thorough assessments of confined spaces, including testing for hazardous gases and determining whether such areas are safe for personnel to enter. The Gas Free Engineer ensures that appropriate precautions are taken, such as ventilating the space and implementing safety protocols based on the test results. Their expertise in recognizing and evaluating gas hazards is critical to maintaining a safe working environment. While other roles like the Engineering Officer, Damage Control Assistant, and Chief Engineer have their own responsibilities concerning safety and operational integrity, the Gas Free Engineer specifically focuses on monitoring and assuring gas safety conditions. As such, they are the designated authority for managing potential gas-related risks within confined spaces, reinforcing their key responsibility in this context.

2. Which pressure must safeties be lifted to if a steaming boiler suffers a ruptured tube?

A. 0 psig

B. 10 psig

C. 15 psig

D. 20 psig

In the event of a ruptured tube in a steaming boiler, it is crucial to ensure that the pressure in the system is reduced to a safe level to prevent further damage and ensure the safety of personnel. Lifting safeties to 0 psig indicates that the boiler pressure has been reduced to atmospheric pressure, eliminating the risk of high-pressure steam causing additional hazards or injuries. When a boiler tube ruptures, it can lead to the release of steam and water under high pressure, which can be extremely dangerous. Bringing the pressure down to 0 psig essentially means venting the system to relieve all pressure, rendering the boiler safe to inspect and repair. The other pressure levels mentioned do not account for the immediate safety needs after a significant failure like a ruptured tube. Continuing to maintain any pressure above atmospheric level after such an event could lead to further accidents or complications, which is why reducing the pressure to 0 psig is the established safety protocol in these situations.

3. In a steam turbine, what role do bearings play?

A. Support rotor weight only

B. Reduce friction and maintain alignment

C. Control steam flow

D. Regulate temperature

In a steam turbine, bearings play a critical role in reducing friction and maintaining alignment. This is crucial for the efficient operation of the turbine. Bearings support the rotor and allow it to rotate smoothly by minimizing the contact and friction between moving parts. By reducing friction, bearings help prevent wear and tear on components, leading to increased longevity and efficiency of the machinery. Additionally, maintaining alignment is essential for the proper function of the turbine, as misalignment can lead to vibrations, which may result in mechanical failure or decreased performance. Hence, the function of bearings goes beyond merely supporting the rotor's weight; they ensure that the rotor operates correctly within its designed specifications, which is vital for the turbine's overall effectiveness and reliability.

4. What type of tile is made of silicon carbide?

A. Baffle tile

B. Insulation tile

C. Refractory tile

D. Acoustic tile

The correct answer is based on the specific properties of baffle tiles, which are indeed made from silicon carbide. Silicon carbide is known for its high thermal conductivity and exceptional hardness, making it an ideal material for baffle tiles used in various high-temperature applications. These tiles serve as thermal barriers or components in environments that experience extreme heat, while also contributing to the overall structural integrity when used in conjunction with other materials. In contrast, insulation tiles are typically made from materials designed to minimize heat transfer, which may include fiberglass or ceramic fibers rather than silicon carbide. Refractory tiles are often made from various refractory materials that can withstand high temperatures, but they don't specifically refer to silicon carbide. Acoustic tiles, on the other hand, are designed to absorb sound and are usually made from softer materials like foam or mineral fibers, which are not suitable for high-heat applications. Therefore, the use of silicon carbide is uniquely aligned with the functions and requirements of baffle tiles.

5. What is the primary role of the Engineering Officer of the Watch (EOOW)?

A. Oversee daily ship operations

B. Coordinate navigation activities

C. Manage the engineering plant and safety

D. Lead maintenance teams

The primary role of the Engineering Officer of the Watch (EOOW) is to manage the engineering plant and safety. This position entails being responsible for the safe and efficient operation of the ship's engineering systems while underway. The EOOW monitors the performance of machinery, ensures that all systems are functioning properly, and responds to any alarms or operational issues that may arise. This includes overseeing engineering watch teams and ensuring compliance with safety regulations and procedures. In this role, the EOOW also ensures that routine checks and assessments are performed, coordinates with other engineering personnel as needed, and makes critical decisions about the engineering plant's operations. Given the high-stakes nature of this role, the EOOW must possess a deep understanding of the engineering systems on board, as well as the ability to manage emergencies effectively. While overseeing daily ship operations and leading maintenance teams are important responsibilities, they fall outside the primary focus of the EOOW. Similarly, coordinating navigation activities pertains more to the deck department rather than the engineering department's direct responsibilities. Thus, the correct choice highlights the specific focus on managing the engineering plant and ensuring safety within that context.

6. What is the operating pressure for testing rotary soot blowers as per PMS?

A. 250 psi plus or minus 25 psi

B. 275 psi plus or minus 25 psi

C. 300 psi plus or minus 25 psi

D. 350 psi plus or minus 25 psi

The operating pressure for testing rotary soot blowers, as outlined in the Planned Maintenance System (PMS), is 300 psi plus or minus 25 psi. This specification is crucial because it ensures that the soot blowers operate effectively and maintain optimal performance while preventing potential damage due to excessive pressure. Testing at this specified range allows for a thorough evaluation of the system's integrity and functionality, ensuring that any weaknesses or faults can be identified and addressed. Maintaining the correct pressure during testing is essential for safe operations and to fulfill maintenance requirements that align with operational readiness.

7. Which part of the three-element feedback system is essential for comparing feed flow with steam flow?

A. Flow meter

B. Steam flow/feed flow differential relay

C. Temperature sensor

D. Pressure gauge

In a three-element feedback system, the steam flow/feed flow differential relay is crucial for comparing the feed flow with steam flow. This relay provides a comparison between the two flows, allowing for accurate control of the system. By measuring the differences in flow rates, the relay helps ensure that the system can maintain stable and efficient operation, responding to any discrepancies between the incoming feedwater and the steam being produced. Other components, like the flow meter, primarily measure flow rates rather than providing a comparative output, while temperature sensors and pressure gauges monitor specific conditions within the system but are not directly involved in the differential evaluation of feed flow versus steam flow. Thus, the steam flow/feed flow differential relay serves as the essential component for effective control in the feedback loop, validating the relationship between the two flows and enabling adjustments as needed for operational efficiency.

8. At what vacuum is the generator brought up to speed after starting an SSTG?

A. 10 inches

B. 15 inches

C. 20 inches

D. 25 inches

When starting a Ship Service Turbine Generator (SSTG), it is crucial to bring the generator up to speed at a specific vacuum level to ensure optimal operation and prevent damage to the turbine. The correct vacuum level for this process is typically around 15 inches of mercury. At this vacuum level, the turbine can achieve the necessary rotational speed while minimizing back pressure on the exhaust side, leading to a more efficient performance and reducing the risk of mechanical failure. This vacuum level helps maintain a balance that allows for smooth acceleration and the ability to handle the load demands that come from the electrical systems on board. Understanding the relationship between vacuum levels and turbine operation is important for machinist mates, as improper vacuum levels could result in inadequate performance, increased wear and tear, or outright failure of the generator system. Thus, the 15 inches of mercury is the standard and optimal vacuum level for this critical starting procedure.

9. How is propulsion turbine bearing wear determined?

A. By comparing the rotor journal and bearing diameters

B. By examining the turbine casing for damage

C. By measuring the oil clearances and comparing the readings

D. By inspecting the rotor for uneven wear

Determining propulsion turbine bearing wear involves assessing the oil clearances and comparing the readings to established specifications. As bearing surfaces wear down over time, the oil clearance increases, which can lead to inefficient operation and possible equipment failure. Regular measurement of the oil clearance allows for the detection of wear patterns and helps ensure that the bearing operates within safe limits. Monitoring these measurements is critical in maintaining proper function and reliability of the turbine system, making this method a key indicator of bearing health. In contrast, simply comparing rotor journal and bearing diameters does not provide the comprehensive information needed about wear since it doesn't account for the clearance changes that occur during operation. Examining the turbine casing for damage might indicate external problems but does not give a direct insight into bearing wear. Inspecting the rotor for uneven wear also fails to directly measure the conditions of the bearings themselves, which are what impacts the turbine's performance and longevity the most.

10. What type of valve is used on overboard overflows to prevent backflow of water from the sea?

A. Ball Valve

B. Gate Valve

C. Check Valve

D. Butterfly Valve

The use of a check valve on overboard overflows is important because it is specifically designed to allow fluid to flow in one direction while preventing backflow. In the context of an overboard overflow system, this characteristic is crucial to ensure that seawater does not enter the vessel through the overflow. The check valve operates automatically, using the pressure of the fluid to open and close, thus ensuring that the water can only exit the ship to the sea and cannot re-enter. In contrast, other types of valves, such as ball valves, gate valves, and butterfly valves, are primarily designed for on/off control rather than controlling flow direction. They can seal against backflow when closed, but they do not provide the automatic function of preventing reverse flow that is needed for overboard applications. Therefore, when it comes to applications where backflow prevention is critical, such as in overboard overflow situations, a check valve is the appropriate choice.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://mmadvancement.examzify.com

We wish you the very best on your exam journey. You've got this!