MACHINERY REPAIRMAN PRACTICE TEST (SAMPLE)

STUDY GUIDE

SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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. 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.

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. 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. **What is the typical cause and remedy for cavitation in a propulsion seawater pump?**
   - A. Cause: overheating; Remedy: reduce engine speed.
   - B. Cause: low suction pressure or flow restrictions; Remedy: improve NPSH, clean intake, reduce friction losses, increase pump size or speed, ensure strainer clean and prime.
   - C. Cause: electrical fault; Remedy: replace motor.
   - D. Cause: high ambient temperature; Remedy: open cooling vents.

2. **What are turbine casings made of for non superheated steam applications?**
   - A. Cast Carbon Steal
   - B. Cast Iron
   - C. Cast Steel
   - D. Aluminum

3. **Which type of pumps are driven by electric motors to move various liquids aboard gas turbine ships?**
   - A. Positive-displacement pumps
   - B. Centrifugal pumps
   - C. Gear pumps
   - D. Diaphragm pumps

4. **The four areas of operation in the main steam system are generation, expansion, condensation, and what else?**
   - A. Vent
   - B. Drain
   - C. Feed
   - D. Reheat

5. **Which type of engine configuration is used for main propulsion on ships?**
   - A. Single Shaft
   - B. Dual Shaft
   - C. Split-Shaft
   - D. Multi-Shaft

6. If no minimum pressurization time is specified or it is impractical, maintain pressure for at least how many minutes before inspecting joints?

A. 10 minutes

B. 2 minutes

C. 5 minutes

D. 20 minutes

7. What is the smallest division on a standard micrometer, and what is its typical value?

A. 0.01 inch (0.25 mm)

B. 0.001 inch (0.02 mm)

C. 0.0001 inch (0.0025 mm)

D. 0.005 inch (0.13 mm)

8. True Naval brass contains 60% copper, 1% tin and what percent zinc?

A. 39% zinc

B. 29% zinc

C. 49% zinc

D. 69% zinc

9. Which form documents and tracks deficiencies requiring further investigation?

A. Qa 12

B. Qa 14

C. Qa 11

D. Qa 15

10. Which pump type is used for lube oil service and transfer, tank stripping, bilge, aircraft fueling and defueling, and for handling lighter viscous liquids?

A. Gear

B. Diaphragm

C. Vane

D. Centrifugal

Answers

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

Explanations

1. What is the typical cause and remedy for cavitation in a propulsion seawater pump?

A. Cause: overheating; Remedy: reduce engine speed.

B. Cause: low suction pressure or flow restrictions; Remedy: improve NPSH, clean intake, reduce friction losses, increase pump size or speed, ensure strainer clean and prime.

C. Cause: electrical fault; Remedy: replace motor.

D. Cause: high ambient temperature; Remedy: open cooling vents.

Cavitation in a propulsion seawater pump happens when the pressure at the pump's inlet drops below the seawater's vapor pressure. When that happens, tiny vapor bubbles form in the liquid, and as they move into higher-pressure areas they collapse, causing pitting, noise, vibration, and reduced pumping performance. The typical trigger in a seawater cooling setup is low suction pressure or flow restrictions in the intake. If the suction line or intake screen is blocked or has excessive friction losses, the pressure available at the pump inlet falls, so the pump experiences a lower net positive suction head than it needs (NPSH). When NPSH available is insufficient, cavitation begins. The remedy centers on increasing the net positive suction head available and reducing suction-side losses. Practically, this means cleaning the intake and strainer to remove obstructions, priming the pump if required, and reducing friction losses in the suction path (proper piping, avoiding sharp bends, adequate pipe size). It may also involve increasing the pump's capacity (a larger pump) or adjusting operating speed to meet the flow demand without driving the suction pressure down. In short, ensure the pump can draw water without the suction pressure dipping to the vapor pressure of seawater. Note that cavitation is not caused by overheating, electrical faults, or high ambient temperature; those conditions affect other systems or components, not the suction-driven phenomenon responsible for cavitation.

2. What are turbine casings made of for non superheated steam applications?

A. Cast Carbon Steal

B. Cast Iron

C. Cast Steel

D. Aluminum

Material choice for turbine casings is driven by service temperature, pressure, and the need for a part that can be cast into a large, complex shape while withstanding vibration and thermal cycling. For non-superheated steam, temperatures are moderate, so the casing doesn't require the extreme high-temperature strength of some steels or the specialized alloys used for superheated steam. Cast carbon steel offers a practical balance: it has enough strength and toughness at these temperatures, good fatigue resistance to cope with the steady loads and start–stop cycles, and it can be produced as robust castings at a reasonable cost. It also supports reliable machining and assembly after casting. Aluminum would falter at the operating temperatures, and while cast iron can be used in some designs, it is typically more brittle and less forgiving under thermal cycling than carbon steel. Cast carbon steel thus aligns well with the demands of non-superheated steam turbine casings.

3. Which type of pumps are driven by electric motors to move various liquids aboard gas turbine ships?

A. Positive-displacement pumps

B. Centrifugal pumps

C. Gear pumps

D. Diaphragm pumps

Pumps driven by electric motors aboard gas turbine ships are gear pumps. Gear pumps are a type of positive-displacement pump that use meshing gears to trap a fixed volume of liquid and move it from suction to discharge. This design delivers a steady, predictable flow at a given speed, which is ideal for transferring a variety of liquids such as fuel oil, lubricants, and hydraulic fluids used on ship systems. The rugged, compact construction and good handling of viscous liquids make gear pumps a reliable choice for marine service where electrical power is readily available and precise flow control matters. Other pump types are either more suited to different service conditions or don't provide the same combination of constant flow and ability to handle a range of liquids when driven by an electric motor. For example, centrifugal pumps rely on pressure differences and can have flow that varies with system pressure, which isn't as stable for some shipboard fluid transfer tasks. Diaphragm pumps are useful in specific dosing or chemical applications but aren't the standard choice for the broad, everyday liquid transfer duties on gas turbine ships. gear pumps strike a practical balance of reliability, efficiency, and versatility for this environment.

4. The four areas of operation in the main steam system are generation, expansion, condensation, and what else?

A. Vent

B. Drain

C. Feed

D. Reheat

The four main operations of the steam cycle form a closed loop: generation (boiler produces steam), expansion (steam does work in the turbine), condensation (steam is turned back into water in the condenser), and feed (feedwater is pumped back into the boiler to restart the cycle). The fourth area is feed because it completes the loop by returning the water to the boiler, maintaining water level and pressure for continuous operation. Vent, drain, and reheat serve important roles in steam systems, but they are not the primary fourth operation in this cycle. Venting lets off excess steam, a drain handles condensate or blowdown, and reheat improves efficiency within the expansion stage rather than forming a separate main cycle area.

5. Which type of engine configuration is used for main propulsion on ships?

A. Single Shaft

B. Dual Shaft

C. Split-Shaft

D. Multi-Shaft

The main idea is how engine power gets transmitted to the propellers and why spreading that power across more than one shaft improves propulsion. A split-shaft arrangement takes the output from the main engine and splits it to drive two propeller shafts through a gearbox. This setup lets the ship push with two propellers at once, increasing thrust and giving better maneuverability, while still using a single engine and shared gear system. It also provides redundancy: if one shaft or propeller area encounters a fault, the other shaft can still deliver propulsion, helping the vessel keep moving. Single-shaft systems are simpler and cheaper but limit thrust and offer no built in redundancy. Having two independent shafts driven by separate drives is another approach that provides true redundancy, but it requires more machinery and space. The split-shaft configuration combines the benefits of multiple shafts with a more compact, integrated drive train, which is why it's the best choice in many main propulsion arrangements.

6. If no minimum pressurization time is specified or it is impractical, maintain pressure for at least how many minutes before inspecting joints?

A. 10 minutes

B. 2 minutes

C. 5 minutes

D. 20 minutes

The main idea is to allow the system to reach a stable state so leaks can reveal themselves. When you pressurize a joint, seals may need a moment to set and small leaks might not show up right away. Waiting about five minutes gives enough time for the pressure to stabilize and for any seepage to become detectable, reducing the chance of missing leaks. If you go too short, a marginal leak could be missed; going much longer isn't typically necessary unless the procedure calls for it. So, maintain pressure for at least five minutes before inspecting the joints, then check for leaks using the usual methods (visible seepage, sounds, or a soap solution).

7. What is the smallest division on a standard micrometer, and what is its typical value?

A. 0.01 inch (0.25 mm)

B. 0.001 inch (0.02 mm)

C. 0.0001 inch (0.0025 mm)

D. 0.005 inch (0.13 mm)

The main idea is understanding the instrument's resolution—the smallest increment you can read directly. A standard imperial micrometer is built so its least count is one-thousandth of an inch. That means the smallest division you typically read on the scale is 0.001 inch. In metric terms, that's about 0.0254 mm, though many quick references round it to about 0.02 mm for simplicity. So the best choice is the one that states 0.001 inch as the smallest division, with an approximate metric equivalent of 0.02 mm. The other options are either coarser or finer than the instrument's typical resolution.

8. True Naval brass contains 60% copper, 1% tin and what percent zinc?

A. 39% zinc

B. 29% zinc

C. 49% zinc

D. 69% zinc

Naval brass is an alloy made from copper, zinc, and a small amount of tin. In percent composition, the parts must add up to 100%. Here copper is 60% and tin is 1%, so zinc must be the remainder: 100% − (60% + 1%) = 39%. That 39% zinc fits the idea that naval brass typically has about 60% copper, around 35–40% zinc, and a small tin addition to improve properties. The other options don't sum to 100% and therefore aren't possible for the overall composition.

9. Which form documents and tracks deficiencies requiring further investigation?

A. Qa 12

B. Qa 14

C. Qa 11

D. Qa 15

When you find a deficiency that needs more work to determine the cause and proper fix, you use a formal tracking form that serves as the official record and follows the issue through investigation and corrective actions. This form is designed specifically to capture all the details of the deficiency, assign responsibility, and monitor progress until the problem is resolved. That makes QA-14 the best choice because it is the form intended to document nonconformances and track them as they move through investigation and resolution, ensuring nothing slips through the cracks and there's a clear trail for audits. Other QA forms are used for different purposes—routine inspections, acceptance or completion records, or in-process checks—and they don'tfunction as the designated tool for deficiencies that require follow-up and investigation.

10. Which pump type is used for lube oil service and transfer, tank stripping, bilge, aircraft fueling and defueling, and for handling lighter viscous liquids?

A. Gear

B. Diaphragm

C. Vane

D. Centrifugal

Vane pumps are a type of positive-displacement rotary pump whose sliding vanes maintain a close seal with the housing, giving smooth, self-priming flow across a range of viscosities. This makes them well suited for moving lubricating oils and fuels, performing tank stripping, handling bilge, and dealing with lighter viscous liquids such as those in aircraft fueling and defueling. The design handles slight air entrainment and small solids better than many other pump types, and it provides reliable transfer without the high flow demands of a centrifugal pump. In contrast, gear pumps are more strictly chosen for very viscous fluids, diaphragm pumps excel with aggressive chemicals or slurries, and centrifugal pumps are best for large-volume, low-viscosity liquids and aren't ideal for the varied tasks listed.

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://machineryrepairman.examzify.com

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