ECME 100 PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://ecme100.examzify.com

Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

Table of Contents

Copyright 1

Table of Contents 2

Introduction 3

How to Use This Guide 4

Questions 5

Answers 8

Explanations 10

Next Steps 15

SAMPLE

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.

SAMPLE

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!

SAMPLE

Questions

SAMPLE

1. What is grey water?

A. Water from shower drains, sinks, galleys, etc.

B. Marine sanitation device

C. Contains micro-organisms to help consume solid waste.

D. When sewage is ground up and chopped into smaller pieces.

2. What does an ejector do?

A. Gas or vapor sucks up liquid

B. Moves liquid using a mechanical impeller

C. Pumps gas directly

D. Separates gas from liquid

3. Which statement describes the operation when the clutch is engaged?

A. They are disconnected

B. The output is reversed

C. The turbine and reduction gear are connected

D. The system is idle

4. A reciprocating pump is a positive displacement pump.

A. False

B. Depends on configuration

C. Not determinable

D. True

5. During which stroke does the piston move from Bottom dead center to Top dead center?

A. Intake

B. Compression

C. Power

D. Exhaust

6. As wear continues, pump efficiency decreases.

A. False

B. True

C. Depends on wear rate

D. Cannot determine

SAMPLE

7. A pump with a static suction head will have to work less than a static suction lift to move the same fluid.

A. True

B. False

C. Not enough data

D. Depends on the fluid viscosity

8. In a crosshead type engine, the piston is connected to the crosshead by the?

A. Connecting rod

B. Crankshaft

C. Piston pin

D. Main bearing

9. What causes the gauge needle for a Bourdon tube to move?

A. The liquid expands

B. As pressure builds, the tube straightens and moves the needle

C. Temperature changes

D. The rotor rotates

10. A steam turbine is what kind of cycle?

A. Open cycle

B. Brayton cycle

C. Rankine cycle

D. Closed cycle

SAMPLE

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. What is grey water?

A. Water from shower drains, sinks, galleys, etc.

B. Marine sanitation device

C. Contains micro-organisms to help consume solid waste.

D. When sewage is ground up and chopped into smaller pieces.

Grey water is the wastewater produced by everyday non-toilet activities, such as washing and cleaning. It comes from showers, sinks, and galley drains, and sometimes laundry, but it does not include toilet waste. That distinction matters because grey water typically contains soaps, oils, and small particles, while black water contains sewage from toilets. So the best description is water from shower drains, sinks, and galleys. The other options refer to systems or processes involved in handling or treating sewage, not to the water resulting from non-toilet uses.

2. What does an ejector do?

A. Gas or vapor sucks up liquid

B. Moves liquid using a mechanical impeller

C. Pumps gas directly

D. Separates gas from liquid

The main idea is entrainment: an ejector uses a high-velocity jet of motive gas or vapor to pull in another fluid and move it, without any mechanical pump moving parts. When the motive fluid exits the nozzle, it accelerates and leaves behind a region of low pressure at the inlet. This low-pressure area draws in the secondary fluid (liquid or gas), and the two streams mix and are discharged together. Because there's no impeller or mechanical pumping stage, the ejector's primary function is to suck up and transport the target fluid through momentum transfer from the fast jet. This is why it's described as the device that sucks up liquid using a gas or vapor jet.

3. Which statement describes the operation when the clutch is engaged?

A. They are disconnected

B. The output is reversed

C. The turbine and reduction gear are connected

D. The system is idle

Engaging the clutch creates a direct mechanical link between the turbine and the reduction gear, so torque and rotation are transmitted through to the gear train and the output. That connection is exactly what drives the load, which is why describing the operation as the turbine and reduction gear being connected is correct. If the clutch isn't engaged, the shafts are disconnected and the system remains idle. Reversing the output isn't a direct result of engaging the clutch; reversal would require a different gear arrangement, not merely engaging the clutch.

SAMPLE

4. A reciprocating pump is a positive displacement pump.

A. False

B. Depends on configuration

C. Not determinable

D. True

Reciprocating pumps move a fixed volume of fluid with each stroke, which is the defining behavior of a positive displacement pump. As the piston or diaphragm moves, it traps a specific amount of fluid and pushes that exact volume into the discharge line, so the flow per cycle is essentially constant (within practical limits). This contrasts with dynamic pumps like centrifugal ones, where flow depends on speed and head rather than a fixed displacement. So, the statement is true.

5. During which stroke does the piston move from Bottom dead center to Top dead center?

A. Intake

B. Compression

C. Power

D. Exhaust

In a four-stroke engine, the upward movement of the piston from bottom dead center to top dead center occurs during the compression stroke. This is the phase where both valves are closed and the air–fuel mixture is compressed to higher pressure and temperature, setting the stage for ignition. After ignition, the piston moves downward on the power stroke, and later the exhaust stroke again has the piston traveling upward from bottom dead center to top dead center to push exhaust gases out through the exhaust valve.

6. As wear continues, pump efficiency decreases.

A. False

B. True

C. Depends on wear rate

D. Cannot determine

As wear progresses, the pump becomes less efficient because the internal surfaces and seals degrade, changing how energy is transferred to the fluid. Worn impeller blades and wear rings increase clearances, which lets more fluid leak back or slip by instead of being directed into the discharge. Roughened surfaces raise friction and promote turbulence, cutting hydraulic efficiency. Bearings and seals that wear over time add mechanical losses and can cause misalignment or imbalance, further reducing overall efficiency. While the rate of decline depends on wear rate and operating conditions, the typical outcome is a downward trend in efficiency as wear continues.

SAMPLE

7. A pump with a static suction head will have to work less than a static suction lift to move the same fluid.

A. True

B. False

C. Not enough data

D. Depends on the fluid viscosity

The amount of work a pump must do is determined by the total head it has to overcome from suction to discharge, not just whether the fluid source sits above or below the pump. Static suction head (when the liquid surface is above the pump) and static suction lift (when the surface is below the pump) describe different pressure conditions on the inlet, but the actual head the pump must supply also depends on what height the discharge is at and how much flow losses (friction, fittings, etc.) there are in the system. Without knowing the discharge elevation, the flow rate (which drives losses), and the system's overall pressure requirements, you can't say whether the pump will have to do less work with a static suction head or with a static suction lift. That missing information is why "Not enough data" is the appropriate answer.

8. In a crosshead type engine, the piston is connected to the crosshead by the?

A. Connecting rod

B. Crankshaft

C. Piston pin

D. Main bearing

In a crosshead type engine, the moving force from the piston has to be transmitted through a link that keeps the piston's straight-line motion separate from the crank's rotation. The connecting rod serves as the main linkage between the piston assembly and the crosshead, transmitting the piston's thrust to the crosshead so that the motion can then be passed to the crankshaft. This linkage is what makes the piston's force travel through the crosshead toward rotation, while other components like the crankshaft, piston pin, or main bearing have different roles (rotational output, pin attachment, and support, respectively).

9. What causes the gauge needle for a Bourdon tube to move?

A. The liquid expands

B. As pressure builds, the tube straightens and moves the needle

C. Temperature changes

D. The rotor rotates

The motion of a Bourdon gauge's needle comes from the curved, elastic tube inside the instrument. When the system pressure rises, the pressure pushes outward on the tube's walls. Because the tube is curved, this internal pressure makes it want to straighten. That bending change is transferred through a mechanical linkage to the dial, so as the tube straightens more, the needle rotates to indicate higher pressure. In short, internal pressure causes the tube to straighten, and this deformation drives the needle movement. This isn't caused by liquid expansion in the gauge, nor by rotor rotation. Temperature can affect readings indirectly by material expansion or calibration drift, but the immediate cause of the needle movement is the pressure-induced straightening of the Bourdon tube.

SAMPLE

10. A steam turbine is what kind of cycle?

A. Open cycle

B. Brayton cycle

C. Rankine cycle

D. Closed cycle

A steam turbine operates in a closed loop where the working fluid is continually recycled within the system. Water is pumped to high pressure, heated to steam in a boiler, expands through the turbine to generate work, then is condensed back to liquid in a condenser and returned to the boiler to repeat the cycle. This recirculation keeps the fluid inside the plant, defining a closed cycle. The specific steam-cycle name you'll often hear is the Rankine cycle, but the essential classification here is that it's a closed cycle.

SAMPLE

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://ecme100.examzify.com

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

SAMPLE