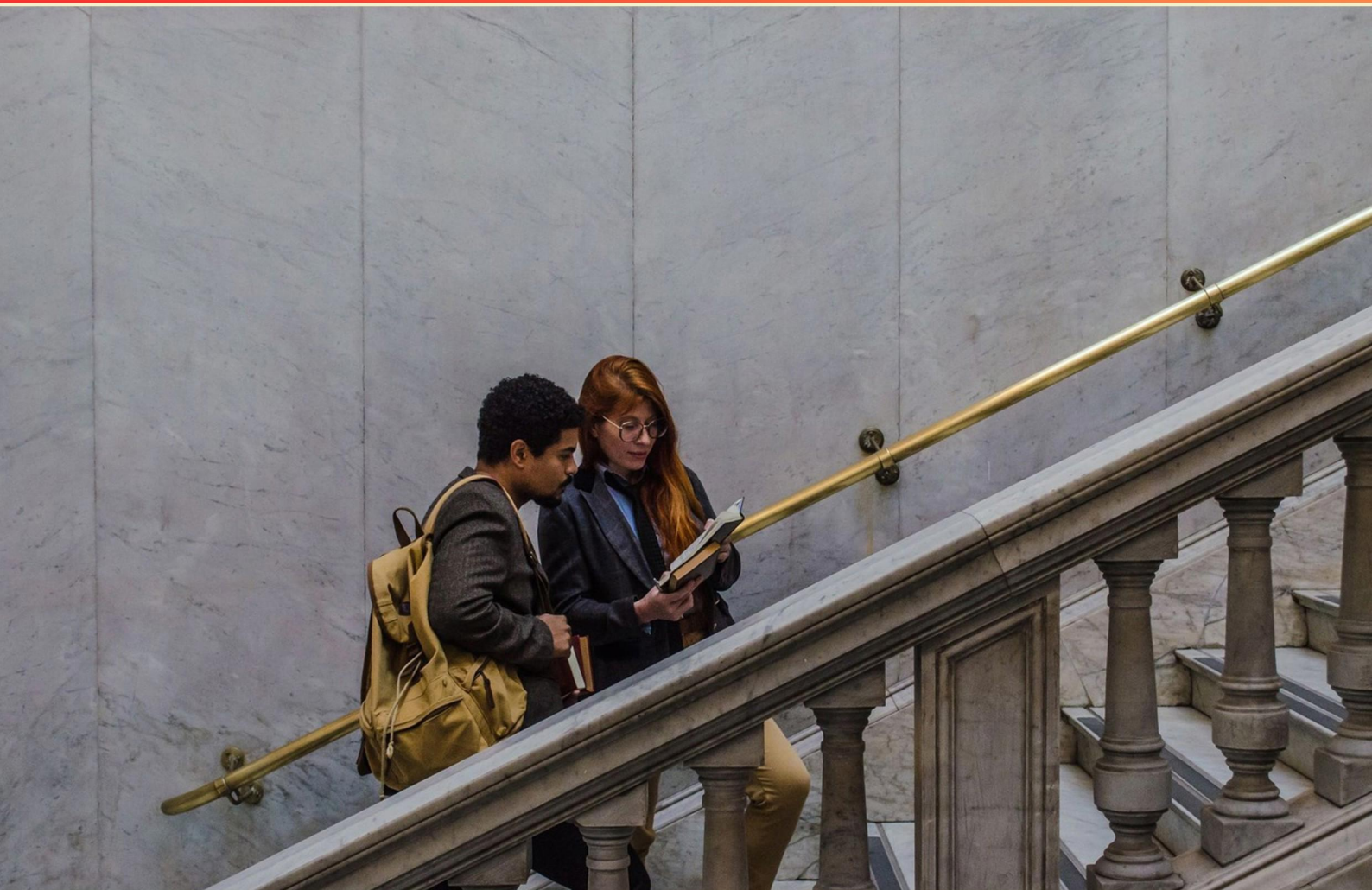


# **BASIC ENGINEERING COMMON CORE (BECC) 5 PRACTICE TEST (SAMPLE)**

**STUDY GUIDE**



**SAMPLE STUDY GUIDE  
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR  
THE FULL VERSION STUDY GUIDE**

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# 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

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- 1. What is the measurement of a fluid's resistance to flow?**
  - A. Density
  - B. Viscosity
  - C. Pressure
  - D. Flow rate
- 2. Polishers are designed to remove water and solids from LO using which components?**
  - A. Coalescing filter
  - B. Absorbent canister and filters
  - C. Separator and centrifuge
  - D. Heat exchanger and scrubber
- 3. What is the primary function of the purifier?**
  - A. To heat the oil
  - B. To remove water through stripping
  - C. To increase flow rate
  - D. To monitor oil quality
- 4. Which component operates independently when the wildcat lever is disengaged?**
  - A. Gear box
  - B. Capstan
  - C. Windlass
  - D. Anchor
- 5. What can increase the ship's draft?**
  - A. Displacement of cargo
  - B. Ballasting
  - C. Reducing weight
  - D. Emptying tanks

- 6. Which component is responsible for comparing the ordered and actual rudder angle indicators?**
- A. Turn helm wheel
  - B. Anchor windlass
  - C. Conveyor load/unload device
  - D. Wildcat clutch lever
- 7. What is the most commonly used oil on board ships?**
- A. 2190 TEP
  - B. 23699
  - C. 15W-40
  - D. ISO VG 68
- 8. Which tank is responsible for storing oily waste prior to separation by the OWS?**
- A. Oily Waste Holding Tank
  - B. Waste Oil Tank
  - C. Separation Tank
  - D. Overboard Discharge Tank
- 9. What condition occurs if bubbles form in the pump casing?**
- A. Pump cavitation
  - B. Air lock
  - C. Back pressure
  - D. Vortexing
- 10. The conveyor trays can hold how many lbs, and what is the overall weight of the conveyor?**
- A. 300 lbs, 50 lbs
  - B. 400 lbs, 100 lbs
  - C. 200 lbs, 75 lbs
  - D. 250 lbs, 80 lbs

## **Answers**

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

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## **Explanations**

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## 1. What is the measurement of a fluid's resistance to flow?

- A. Density
- B. Viscosity**
- C. Pressure
- D. Flow rate

Viscosity is defined as the measurement of a fluid's resistance to flow. It indicates how thick or thin a fluid is and how easily it can move or be poured. For example, honey has a higher viscosity compared to water, meaning it flows more slowly and resists motion more than water does. This property is crucial in various engineering applications, including lubrication, fluid transport, and chemical processes, where understanding the behavior of fluids in motion is essential for design and analysis. In contrast, density refers to the mass per unit volume of a substance and is not directly related to how the fluid flows. Pressure measures the force applied by the fluid per unit area and is important in understanding how fluids behave under various conditions, but it does not specifically relate to resistance to flow. Flow rate, on the other hand, describes the volume of fluid that passes a given point in a certain period, but again, it does not provide information on the internal resistance of the fluid. Thus, viscosity is the most appropriate choice for describing a fluid's resistance to flow.

## 2. Polishers are designed to remove water and solids from LO using which components?

- A. Coalescing filter
- B. Absorbent canister and filters**
- C. Separator and centrifuge
- D. Heat exchanger and scrubber

The use of absorbent canisters and filters in polishers is specifically designed to optimize the removal of water and solids from lubricating oil (LO). Absorbent canisters typically contain materials that can draw in water molecules and certain solid contaminants, thereby improving the cleanliness and integrity of the lubricating oil. Filters help to physically capture larger particulates and impurities that may be suspended in the oil. This combination of absorbent materials and filtration is effective in ensuring that the lubricating oil maintains its properties and function, which is crucial for machinery performance. In this context, while other options may involve separation or treatment processes, they do not have the same targeted action for both water and solid removal from lubricating oil as the combination of absorbent canisters and filters does. For instance, coalescing filters are aimed primarily at separating water from oil but may not handle solid contaminants as effectively as the absorbents and filters. Separators and centrifuges are better suited for the separation of different density fluids rather than handling the solid particulates embedded within the oil. Heat exchangers and scrubbers focus on different aspects of fluid management and conditioning, such as temperature control or gas stream purification, rather than the specific need to remove both water and solids from lubricating

### 3. What is the primary function of the purifier?

- A. To heat the oil
- B. To remove water through stripping**
- C. To increase flow rate
- D. To monitor oil quality

The primary function of the purifier is to remove water from oil through the process known as stripping. In many engineering applications, especially in the context of fuel and lubricating oil systems, it is essential to maintain the quality of the oil by eliminating impurities such as water. Water in oil can lead to corrosion, reduced lubrication properties, and other operational issues. Purifiers typically work by utilizing centrifugal force to separate contaminants from the oil, allowing for effective separation of water and other particulates. This process is vital in ensuring that the oil maintains its optimal performance characteristics and extends its service life. By removing water, the purifier helps maintain the integrity and efficiency of systems that rely on oil, thus supporting overall operational reliability. Other options, while relevant to oil management in some context, do not capture the essential function of the purifier as effectively as the removal of water.

### 4. Which component operates independently when the wildcat lever is disengaged?

- A. Gear box
- B. Capstan**
- C. Windlass
- D. Anchor

The capstan operates independently when the wildcat lever is disengaged because it is designed to perform its function without being mechanically linked to the wildcat. A capstan typically serves as a rotating drum to handle mooring lines, and it can be operated using a separate mechanism. This allows the deck crew to control line tension and manage the mooring process without affecting the operation of the wildcat, which is specifically designed for hoisting and lowering the anchor chain. In contrast, the gearbox, windlass, and anchor have functions closely tied to mechanisms that typically engage or disengage together with the wildcat lever. The windlass, for instance, functions both to raise or lower the anchor and is often linked directly to the wildcat. Therefore, when the wildcat is disengaged, the overall operation of the windlass might also be interrupted, unlike the capstan that can continue to function independently.

### 5. What can increase the ship's draft?

- A. Displacement of cargo
- B. Ballasting**
- C. Reducing weight
- D. Emptying tanks

Ballasting a ship involves taking on water or other materials to increase its weight, which in turn increases the ship's draft, or the distance from the waterline to the bottom of the hull. This process is crucial, especially during operations like loading cargo or navigating through certain conditions, as it enhances stability and helps the vessel maintain an optimal position in the water. When a ship is ballasted, the added weight contributes to a deeper immersion in the water, allowing better handling and control. The design of vessels often necessitates certain drafts to ensure they operate efficiently and safely, particularly in terms of stability and buoyancy. In contrast, options that involve displacing cargo, reducing weight, or emptying tanks result in a decrease in the ship's draft. Displacing cargo means that removing items from the ship lightens it, causing it to sit higher in the water. Reducing weight and emptying tanks further lower the overall weight of the ship, which similarly results in a decreased draft.

**6. Which component is responsible for comparing the ordered and actual rudder angle indicators?**

- A. Turn helm wheel**
- B. Anchor windlass
- C. Conveyor load/unload device
- D. Wildcat clutch lever

*The component that compares the ordered and actual rudder angle indicators is the turn helm wheel. This device is directly involved in steering the vessel and provides the physical input necessary to indicate the desired rudder position. When a helmsman turns the helm wheel, it sends signals to the rudder control system, which adjusts the rudder angle accordingly. The system then compares the ordered angle (the angle the helmsman wishes to achieve) against the actual angle of the rudder to ensure that the steering commands are executed accurately. The other components listed do not serve this specific function. The anchor windlass is used for raising and lowering the anchor, while the conveyor load/unload device is used in materials handling, and the wildcat clutch lever is related to the operation of an anchor windlass mechanism. None of these components is involved in the rudder angle control or comparison process in steering a vessel.*

**7. What is the most commonly used oil on board ships?**

- A. 2190 TEP**
- B. 23699
- C. 15W-40
- D. ISO VG 68

*The most commonly used oil on board ships is 2190 TEP. This oil is specifically formulated for use in large marine diesel engines and is essential for lubrication in both main propulsion and auxiliary engines. Its properties include excellent thermal stability, resistance to oxidation, and the ability to withstand high pressures, which are critical for the demanding operating conditions of marine engines. While other oils such as 23699, 15W-40, and ISO VG 68 may also be used in various applications, they are not as prevalent in the marine context as 2190 TEP. For instance, 23699 is typically a synthetic oil that might be used in specialized scenarios, while 15W-40 is a multi-grade oil often utilized in automotive applications rather than on ships. ISO VG 68 represents a specific viscosity grade of oil commonly used in industrial settings, not directly in the context of marine propulsion. Thus, 2190 TEP stands out as the industry standard for ships, ensuring reliability and efficiency in vessel operations.*

**8. Which tank is responsible for storing oily waste prior to separation by the OWS?**

- A. Oily Waste Holding Tank**
- B. Waste Oil Tank
- C. Separation Tank
- D. Overboard Discharge Tank

*The Oily Waste Holding Tank is specifically designed to temporarily store oily waste before it undergoes treatment and separation by the Oil Water Separator (OWS). This tank serves as a preliminary containment solution, allowing for the safe collection of waste oil and water mixtures without risk of environmental contamination or overflow. The design and purpose of the Oily Waste Holding Tank ensure that it can accommodate various types of oily waste generated on board vessels, making it an essential component in managing waste effectively. Once enough oily waste is accumulated, it can then be directed to the OWS for further processing, where the separation of oil from water occurs, facilitating compliance with environmental regulations and effective waste management practices. Other tank options mentioned serve different purposes. For instance, a Waste Oil Tank is designated for the storage of waste oil that may already be treated or processed, but it does not refer specifically to the holding phase prior to separation. The Separation Tank, while a relevant concept, typically relates to the process of separating oil from water rather than the storage aspect. Lastly, the Overboard Discharge Tank is used for fluids that are ready for discharge overboard, which is a distinct step in the waste management process following treatment. Thus, the Oily Waste Holding Tank is the accurate*

**9. What condition occurs if bubbles form in the pump casing?**

- A. Pump cavitation**
- B. Air lock
- C. Back pressure
- D. Vortexing

*The scenario of bubbles forming in the pump casing is indicative of pump cavitation. Cavitation occurs when the pressure of the liquid within the pump falls below its vapor pressure, resulting in the formation of vapor bubbles. These bubbles can collapse violently as they move into areas of higher pressure within the pump, potentially causing significant damage to the impeller and other components, leading to a decrease in performance and efficiency. Understanding cavitation is important because it highlights the need for maintaining proper fluid flow and pressure conditions in pump systems. Factors such as inadequate suction head, excessive temperature, or high flow rates can all contribute to cavitation. In contrast, air lock, back pressure, and vortexing involve different mechanisms. Air lock refers to the situation where air becomes trapped in the pump or piping, preventing liquids from flowing properly. Back pressure is the resistance that the pump experiences while trying to move fluid through a pipeline, which can affect its operation but does not directly involve the formation of bubbles in the pump casing. Vortexing happens when the fluid surface creates a vortex, which may lead to inadequate suction at the pump intake but does not specifically refer to the condition of bubbles forming within the pump casing itself.*

**10. The conveyor trays can hold how many lbs, and what is the overall weight of the conveyor?**

A. 300 lbs, 50 lbs

**B. 400 lbs, 100 lbs**

C. 200 lbs, 75 lbs

D. 250 lbs, 80 lbs

*The information provided indicates that the correct choice specifies that the conveyor trays can hold a maximum weight of 400 lbs and that the overall weight of the conveyor itself is 100 lbs. This choice reflects the design parameters of conveyors, which are often rated for specific load capacities that are essential for operating safely and efficiently. A conveyor's load capacity must meet or exceed the intended use, ensuring it can handle the required cargo without risk of failure. Additionally, the weight of the conveyor can impact its stability and maneuverability; hence, a weight of 100 lbs for the conveyor is reasonable for standard models. Understanding these parameters is crucial in applications where conveyors are deployed, as they ensure optimal performance while adhering to safety standards. Proper load management directly affects the lifecycle and operational efficiency of conveyor systems.*

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## 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](mailto:hello@examzify.com).

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

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

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