

VIRGINIA HESI LEVEL 4 PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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. A buffer typically consists of which components?**
 - A. A weak acid and its conjugate base
 - B. A strong acid and its conjugate base
 - C. A salt of a weak acid and a strong base
 - D. Water only
- 2. Which value is most useful to monitor the effectiveness of sepsis therapy in terms of perfusion?**
 - A. Blood Glucose Level
 - B. Platelet Count
 - C. Serum Lactate Level
 - D. Serum Creatinine
- 3. Which statement best describes the role of Gastrografin in GI imaging after abdominal surgery?**
 - A. Gastrografin is a water-soluble contrast agent used for GI studies
 - B. Barium sulfate is a water-insoluble contrast agent used for GI studies
 - C. Gadolinium is used for CT contrast
 - D. Iodinated contrast is used for IV injections
- 4. Iatrogenic refers to something that is:**
 - A. Caused by medical treatment or intervention.
 - B. Caused by genetic inheritance.
 - C. Related to aging.
 - D. An infectious disease.
- 5. Identify the sentence with correct use of quotation marks.**
 - A. The nurse announced, "The patient will be discharged today."
 - B. The nurse announced "The patient will be discharged today".
 - C. The nurse announced: "The patient will be discharged today".
 - D. "The patient will be discharged today," the nurse announced.

- 6. What is the primary function of mitochondria?**
- A. To generate ATP
 - B. To store glycogen
 - C. To synthesize proteins
 - D. To detoxify the cell
- 7. Which postoperative condition should be considered first in a patient who develops sudden dyspnea and chest pain with a drop in SpO₂ to 86%?**
- A. Myocardial Infarction
 - B. Pulmonary Embolism
 - C. Pneumothorax
 - D. Atelectasis
- 8. In a solution, 4 parts solvent to 1 part solute are present. What percent of the solution is solute?**
- A. 20%
 - B. 80%
 - C. 5%
 - D. 25%
- 9. An older client is transferred to a telemetry unit after placement of a pacemaker. What action should the RN take first?**
- A. Establish telemetry monitoring
 - B. Administer prescribed antiarrhythmic medication
 - C. Schedule a chest X-ray
 - D. Obtain discharge instructions
- 10. Which task should the nurse delegate to an experienced unlicensed assistive personnel (UAP)?**
- A. Initiate a central line placement
 - B. Administer IV anticoagulants
 - C. Assess a patient with chest pain
 - D. Obtain a sterile urine specimen from an indwelling catheter with a closed drainage system

Answers

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

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Explanations

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1. A buffer typically consists of which components?

- A. A weak acid and its conjugate base**
- B. A strong acid and its conjugate base
- C. A salt of a weak acid and a strong base
- D. Water only

A buffer works by having a weak acid and its conjugate base in the solution. This pairing provides both a source of protons and a sink for protons, which lets the solution resist pH changes when small amounts of acid or base are added. When a little strong acid is added, the conjugate base captures the extra H^+ , forming the weak acid and preventing a large drop in pH. When a little strong base is added, the weak acid donates H^+ to neutralize it, preventing a large rise in pH. The buffering effect is strongest near the weak acid's pK_a , where the amounts of acid and conjugate base are comparable, described by $pH = pK_a + \log([A^-]/[HA])$. A salt of a weak acid and a strong base would create a basic solution but doesn't provide the ongoing acid–base exchange needed for buffering. Water alone doesn't resist pH changes. A strong acid with its conjugate base doesn't buffer well because the strong acid fully dissociates and its conjugate base is too weak to balance pH changes.

2. Which value is most useful to monitor the effectiveness of sepsis therapy in terms of perfusion?

- A. Blood Glucose Level
- B. Platelet Count
- C. Serum Lactate Level**
- D. Serum Creatinine

Tracking tissue perfusion during sepsis therapy is best done by monitoring serum lactate levels. When tissues aren't getting enough oxygen, cells switch to anaerobic metabolism and produce more lactate. In septic patients, high lactate indicates ongoing hypoperfusion at the microcirculatory level. As resuscitation improves blood flow and oxygen delivery, lactate tends to decrease—a sign that perfusion is improving. So serial lactate measurements give you dynamic, real-time feedback on how well perfusion is responding to therapy and help guide treatment decisions. In contrast, a single blood glucose value can rise with stress and treatment but doesn't directly reflect perfusion status. Platelet count shows coagulation and inflammatory processes rather than blood flow to tissues. Serum creatinine indicates kidney function, which can worsen with poor perfusion but changes more slowly and doesn't provide immediate feedback on perfusion during acute resuscitation.

3. Which statement best describes the role of Gastrografin in GI imaging after abdominal surgery?

- A. Gastrografin is a water-soluble contrast agent used for GI studies
- B. Barium sulfate is a water-insoluble contrast agent used for GI studies
- C. Gadolinium is used for CT contrast**
- D. Iodinated contrast is used for IV injections

Gastrografin serves as a water-soluble, iodinated contrast agent for imaging the GI tract. After abdominal surgery, it's preferred for leak evaluation because if a perforation exists, the contrast can escape into the peritoneal cavity and be seen on X-ray or fluoroscopy, helping identify the leak while avoiding the inflammatory risk of barium that can occur if leakage happens. Its water-solubility makes it safer in this setting compared with insoluble contrast. Gadolinium is used mainly for MRI, not GI imaging, and while iodinated contrast can be used intravenously, Gastrografin's role here is specifically as a water-soluble GI contrast given orally or via a tube to visualize the gut and any extraluminal leakage.

4. Iatrogenic refers to something that is:

- A. Caused by medical treatment or intervention.
- B. Caused by genetic inheritance.
- C. Related to aging.
- D. An infectious disease.

Iatrogenic describes harm or a condition that results from medical treatment or intervention. This includes side effects from medications, complications from a procedure, or infections acquired in a healthcare setting that arise because of care rather than the patient's underlying disease. It's not about genetic inheritance, which is hereditary; it's not simply aging, though risk can increase with age; and it's not an infectious disease, which is caused by a pathogen. Remember that some infections can be iatrogenic if they stem from care, but the key idea is that the harm comes from medical treatment or intervention.

5. Identify the sentence with correct use of quotation marks.

- A. The nurse announced, "The patient will be discharged today."
- B. The nurse announced "The patient will be discharged today".
- C. The nurse announced: "The patient will be discharged today".
- D. "The patient will be discharged today," the nurse announced.

The idea being tested is how to punctuate direct speech when the speaker's tag comes before the quotation. When the reporting verb precedes the spoken words, you place a comma after the verb to separate it from the quote, and you keep the exact spoken words inside quotation marks, with the sentence-ending punctuation inside the quotes. The nurse announced, "The patient will be discharged today." follows this pattern, making the connection between the speaker and what was said clear and the punctuation tidy. The other options miss or alter this standard setup: a missing comma after the verb can blur the division between tag and quote; a colon after the verb is less typical for a brief single sentence quotation; and placing the quote first changes the natural flow of attribution.

6. What is the primary function of mitochondria?

- A. To generate ATP
- B. To store glycogen
- C. To synthesize proteins
- D. To detoxify the cell

Mitochondria generate ATP, the cell's main energy currency, through aerobic respiration. In the inner membrane, electrons travel through the electron transport chain to create a proton gradient, and ATP synthase uses that gradient to convert ADP and inorganic phosphate into ATP. This pathway yields the most energy per glucose molecule when oxygen is available, making it the primary source of cellular energy. Glycogen storage happens in the cytoplasm as glycogen granules, not in mitochondria. Protein synthesis mostly occurs on ribosomes, particularly those on the rough endoplasmic reticulum, with mitochondria contributing only a small portion of their own proteins. Detoxification is primarily handled by peroxisomes and the smooth endoplasmic reticulum, not mitochondria. Mitochondria do participate in other roles like apoptosis and certain metabolic steps, but ATP production is their central job.

7. Which postoperative condition should be considered first in a patient who develops sudden dyspnea and chest pain with a drop in SpO₂ to 86%?

- A. Myocardial Infarction
- B. Pulmonary Embolism**
- C. Pneumothorax
- D. Atelectasis

Sudden shortness of breath with chest pain and a drop in oxygen saturation after surgery is most consistent with a pulmonary embolism. When a clot forms in the legs or pelvis and travels to the lungs, it abruptly blocks blood flow in portions of the pulmonary vasculature. This creates a sharp mismatch between ventilation and perfusion (ventilated air but reduced blood flow), leading to sudden hypoxemia like the SpO₂ dropping to 86%. The body often responds with rapid breathing and a fast heart rate, which are common in this scenario. In the postoperative setting, immobility and a hypercoagulable state increase the likelihood of a venous thrombus forming and traveling to the lungs, making PE a high-priority concern whenever this acute triad occurs: sudden dyspnea, chest pain, and significant hypoxemia. Other possibilities exist but fit this presentation less well. A myocardial infarction can produce chest pain and dyspnea, but the hallmark is typically chest pressure with potential ECG changes rather than a sudden, isolated hypoxemia. A pneumothorax would cause sharp pleuritic pain and usually diminished breath sounds on one side, which is not obligatory in this scenario. Atelectasis can cause hypoxemia after surgery, but it typically develops more gradually and is less likely to present with sudden, pleuritic chest pain and a rapid, marked drop in SpO₂. This situation requires urgent evaluation and treatment, starting with securing oxygen, rapid assessment for PE, and initiating anticoagulation as indicated unless contraindicated.

8. In a solution, 4 parts solvent to 1 part solute are present. What percent of the solution is solute?

- A. 20%**
- B. 80%
- C. 5%
- D. 25%

Understanding percent by parts means you take the amount of solute and divide it by the total amount of solution, then convert to a percentage. Here, there are 4 parts solvent and 1 part solute, so the total is 5 parts. The solute makes up 1 part out of 5, which is $1/5 = 0.2$, and $0.2 \times 100\% = 20\%$. So the solute is 20% of the solution. The other options would correspond to different ratios (for example, 80% would require the solute to be 4 of 5 parts, 5% would come from 1 of 20 parts, and 25% from 1 of 4 parts), which don't match the given 4 to 1 ratio.

9. An older client is transferred to a telemetry unit after placement of a pacemaker. What action should the RN take first?

- A. Establish telemetry monitoring**
- B. Administer prescribed antiarrhythmic medication
- C. Schedule a chest X-ray
- D. Obtain discharge instructions

The immediate priority is establishing continuous telemetry monitoring. After pacemaker placement, the first concern is watching the heart's rhythm and the device's function in real time. Telemetry lets you detect any immediate problems—such as arrhythmias, inappropriate pacing, or signs that the leads aren't functioning properly—so you can respond quickly and adjust settings or call for help as needed. While other steps are important, they don't take precedence over real-time monitoring. A chest X ray is useful to verify lead position and rule out pneumothorax, but it's typically done after ensuring the patient's rhythm is being continuously observed and stable. Administering antiarrhythmic medication depends on the specific rhythm and would not be started just because a pacemaker was placed. Discharge instructions come later, once the patient is stable and ready for transition.

10. Which task should the nurse delegate to an experienced unlicensed assistive personnel (UAP)?

- A. Initiate a central line placement
- B. Administer IV anticoagulants
- C. Assess a patient with chest pain
- D. Obtain a sterile urine specimen from an indwelling catheter with a closed drainage system**

Delegation hinges on assigning routine, nonjudgmental tasks to UAP while leaving clinical assessment and invasive procedures to licensed staff. Obtaining a sterile urine specimen from an indwelling catheter with a closed drainage system fits this, because it is a straightforward, predefined process that does not require nursing judgment. With proper training and supervision, the experienced UAP can perform the steps: clean the sampling port, use sterile technique to withdraw a small amount of urine into a sterile container, and ensure the specimen is labeled and sent to the lab. The closed system helps minimize contamination and risk to the patient. Tasks that require invasive procedures, medication administration, or patient assessment—like starting a central line, giving IV anticoagulants, or evaluating chest pain—need a licensed nurse due to the need for clinical decision-making, monitoring, and specialized skills.

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://vaheislvl4.examzify.com>

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

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