MARK KLIMEK ELECTROLYTES AND ENDOCRINE PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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.

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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!

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Questions

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1. How does hypophosphatemia occur during refeeding or DKA treatment, and when should phosphate replacement be considered?

A. Insulin drives phosphate into cells; supplement if phosphate <1 mg/dL or large drops or symptomatic.

B. Phosphate replacement is always given regardless of level.

C. Phosphate replacement is never used during DKA.

D. Phosphate rises spontaneously with fluids.

2. A patient on renal failure has a serum magnesium of 5.0 mg/dL and diminished deep tendon reflexes. What is the management?

A. Hypermagnesemia; treat with IV calcium gluconate to antagonize membrane effects, discontinue magnesium-containing meds, and consider dialysis if needed

B. Administer IV magnesium sulfate

C. Increase magnesium intake

D. Administer potassium chloride

3. SIADH is most accurately explained by which mechanism leading to hyponatremia in the setting of small cell lung carcinoma?

A. Decreased ADH

B. Increased ADH causes water retention and dilutional hyponatremia

C. Increased aldosterone

D. Decreased ADH and water loss

4. Hypercalcemia s/s typically present as:

A. Everything high

B. Everything low

C. Heart rate high only

D. Increased reflexes

5. After thyroidectomy, a patient develops tingling, muscle cramps, and facial twitching; which lab abnormality is likely and what is the urgent treatment?

A. Hypercalcemia; treat with IV bisphosphonates.

B. Hyperkalemia; treat with IV calcium gluconate.

C. Hypocalcemia; treat with oral calcium carbonate.

D. Hypocalcemia; treat with IV calcium gluconate.

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6. Which of the following statements constitutes a positive initial screen for Cushing's syndrome?

A. Suppressed cortisol after low-dose dexamethasone.

B. Elevated cortisol that fails to suppress with low-dose dexamethasone.

C. Low 24-hour urinary free cortisol.

D. Normal cortisol with normal dexamethasone suppression.

7. Which medication is used for immediate symptomatic relief in hyperthyroidism?

A. Levothyroxine.

B. A beta-blocker such as propranolol.

C. Methimazole.

D. Hydrocortisone.

8. In hypokalemia, which two signs are increased?

A. Heart rate and urinary output

B. Blood pressure and respiratory rate

C. Serum potassium and calcium

D. Reflexes and muscle tone

9. Which action is performed by parathyroid hormone in the kidney?

A. Increase calcium reabsorption.

B. Increase phosphate reabsorption.

C. Decrease calcium reabsorption.

D. Decrease phosphate excretion.

10. SIADH commonly presents with which electrolyte issue?

A. Low sodium

B. High potassium

C. Hyperglycemia

D. Hypernatremia

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Answers

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

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Explanations

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1. How does hypophosphatemia occur during refeeding or DKA treatment, and when should phosphate replacement be considered?

A. Insulin drives phosphate into cells; supplement if phosphate <1 mg/dL or large drops or symptomatic.

B. Phosphate replacement is always given regardless of level.

C. Phosphate replacement is never used during DKA.

D. Phosphate rises spontaneously with fluids.

The main idea is that phosphate drops during refeeding or DKA treatment because insulin drives phosphate into cells to support ATP production and glycolysis. As you give insulin and correct acidosis, phosphate shifts from the blood into intracellular compartments, and with prior losses from diuresis or poor intake, total body phosphate can be depleted even if the initial serum level isn't dangerously low. This can lead to weakness, respiratory muscle failure, arrhythmias, and other problems if levels fall too far. Phosphate replacement isn't done automatically in every patient. It's considered when the serum phosphate is low or when there's a significant drop or symptoms of hypophosphatemia during therapy. A common threshold to start replacement is a serum phosphate around 0.32 mmol/L (about 1 mg/dL) or lower, especially if there are symptoms such as muscle weakness or impending respiratory compromise. IV phosphate is given with careful monitoring of calcium, renal function, and overall fluid status to avoid complications. This is why replacement is not always done and why the focus is on monitoring and treating low phosphate or symptomatic cases, rather than assuming it should always be given or that it rises on its own with fluids.

2. A patient on renal failure has a serum magnesium of 5.0 mg/dL and diminished deep tendon reflexes. What is the management?

A. Hypermagnesemia; treat with IV calcium gluconate to antagonize membrane effects, discontinue magnesium-containing meds, and consider dialysis if needed

B. Administer IV magnesium sulfate

C. Increase magnesium intake

D. Administer potassium chloride

Hypermagnesemia in renal failure leads to neuromuscular depression, which is why diminished deep tendon reflexes accompany a Mg level of 5.0 mg/dL. The immediate goal is to counteract magnesium's effects on cell membranes and protect the heart and nerves while removing the excess Mg. Giving IV calcium gluconate acts as a membrane stabilizer that counteracts magnesium's depressant effects on cardiac and neuromuscular tissue, providing rapid symptom relief without reducing magnesium levels itself. At the same time, stop all sources of magnesium (magnesium-containing medications and supplements) to prevent further accumulation. Dialysis may be required because renal failure impairs magnesium excretion and is the most direct way to lower magnesium when rapid removal is needed or when symptoms are significant. Administering more magnesium would worsen the situation, increasing Mg levels and prolonging symptoms, and giving potassium chloride is not a treatment for hypermagnesemia.

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3. SIADH is most accurately explained by which mechanism leading to hyponatremia in the setting of small cell lung carcinoma?

A. Decreased ADH

B. Increased ADH causes water retention and dilutional hyponatremia

C. Increased aldosterone

D. Decreased ADH and water loss

Ectopic ADH production by the tumor drives water retention, leading to dilutional hyponatremia. In small cell lung carcinoma, ADH is released in excess, so the kidneys reabsorb more free water via V2 receptors in the collecting ducts, increasing aquaporin-2 channels. This expands total body water without a proportional increase in sodium, lowering serum osmolality and diluting serum sodium. The patient often remains euvolemic because natriuresis helps offset the added water, so urine remains relatively concentrated with a high urine sodium. The result is hyponatremia from dilution rather than sodium loss. Decreased ADH would cause dehydration and hypernatremia, and increased aldosterone would promote sodium and water retention without the same dilutional effect, so they don't explain this scenario.

4. Hypercalcemia s/s typically present as:

A. Everything high

B. Everything low

C. Heart rate high only

D. Increased reflexes

High calcium dampens nerve and muscle excitability, so the most typical signs reflect reduced activity across multiple body systems. You'd expect fatigue and weakness, confusion or lethargy, constipation, and decreased deep tendon reflexes. The heart can be affected too, with a tendency toward a shorter QT interval and, in severe cases, slower heart conduction or bradycardia. Because hypercalcemia tends to slow things down rather than ramp them up, the presentation is best described as "everything low," rather than widespread excitation or isolated tachycardia or increased reflexes.

5. After thyroidectomy, a patient develops tingling, muscle cramps, and facial twitching; which lab abnormality is likely and what is the urgent treatment?

A. Hypercalcemia; treat with IV bisphosphonates.

B. Hyperkalemia; treat with IV calcium gluconate.

C. Hypocalcemia; treat with oral calcium carbonate.

D. Hypocalcemia; treat with IV calcium gluconate.

Damage to or removal of the parathyroid glands during thyroidectomy can lead to hypoparathyroidism, which causes hypocalcemia. Low calcium makes nerves and muscles hyperexcitable, producing tingling around the mouth, muscle cramps, and facial twitching—the classic signs of acute hypocalcemic tetany. You'd expect a low serum calcium (often with low PTH and high phosphate) in this scenario. The urgent treatment is intravenous calcium gluconate to rapidly raise calcium levels and stabilize cell membranes, which quickly relieves the symptoms and reduces risk of more severe issues. Once stabilized, you can continue with calcium supplementation and consider calcitriol as needed, with careful electrolyte monitoring.

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6. Which of the following statements constitutes a positive initial screen for Cushing's syndrome?

A. Suppressed cortisol after low-dose dexamethasone.

B. Elevated cortisol that fails to suppress with low-dose dexamethasone.

C. Low 24-hour urinary free cortisol.

D. Normal cortisol with normal dexamethasone suppression.

The key idea is that screening for Cushing's looks for elevated cortisol that does not respond to a low-dose dexamethasone suppression test. In a normal person, the small amount of dexamethasone should trigger negative feedback and cortisol levels fall. If cortisol stays high despite low-dose dexamethasone, it shows autonomous cortisol production, which is what Cushing's syndrome does. So the statement describing elevated cortisol that fails to suppress with low-dose dexamethasone is the positive screen. The other scenarios don't indicate hypercortisolism: suppressed cortisol after dexamethasone means the axis is responsive and cortisol is appropriately low; low 24-hour urinary free cortisol argues against Cushing's; and a normal cortisol with normal suppression also argues against it.

7. Which medication is used for immediate symptomatic relief in hyperthyroidism?

A. Levothyroxine.

B. A beta-blocker such as propranolol.

C. Methimazole.

D. Hydrocortisone.

Immediate relief in hyperthyroidism comes from blocking the adrenergic effects of excess thyroid hormones. A beta-blocker like propranolol quickly reduces heart rate, palpitations, tremor, and anxiety by blocking beta-adrenergic receptors in the heart and other tissues. At higher doses, it can also modestly decrease the conversion of T4 to the more active T3, providing a bit of additional hormonal effect, but the main benefit is rapid symptom control through receptor blockade. Levothyroxine would worsen symptoms by adding thyroid hormone. Methimazole reduces production of thyroid hormone, but it takes days to weeks to improve symptoms, not immediate relief. Hydrocortisone isn't used for quick symptom relief in uncomplicated hyperthyroidism; it's reserved for specific contexts like thyroid storm or adrenal issues.

8. In hypokalemia, which two signs are increased?

A. Heart rate and urinary output

B. Blood pressure and respiratory rate

C. Serum potassium and calcium

D. Reflexes and muscle tone

In hypokalemia, the body often shows tachycardia and increased urine production. Low potassium destabilizes cardiac electrical activity, so the heart tends to beat faster to maintain output and compensate for potential conduction issues. At the same time, potassium loss in the kidneys impairs the kidney's ability to concentrate urine, leading to polyuria. So the two signs that tend to rise are heart rate and urinary output. By contrast, serum potassium is decreased, and reflexes or muscle tone are typically reduced due to weakness, not increased, while blood pressure and respiratory rate aren't reliably elevated in this state.

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9. Which action is performed by parathyroid hormone in the kidney?

A. Increase calcium reabsorption.

B. Increase phosphate reabsorption.

C. Decrease calcium reabsorption.

D. Decrease phosphate excretion.

Parathyroid hormone raises calcium levels by acting on the kidney to reabsorb more calcium in the distal tubule. It binds receptors in the distal tubule and triggers signaling that increases the presence and activity of calcium channels and transporters, moving calcium from the filtrate back into the blood. At the same time, PTH reduces phosphate reabsorption in the proximal tubule, leading to more phosphate being excreted in urine, and it also promotes production of active vitamin D to boost gut calcium absorption. So the direct renal action you'd expect is increased calcium reabsorption, which is why that option is the best choice.

10. SIADH commonly presents with which electrolyte issue?

A. Low sodium

B. High potassium

C. Hyperglycemia

D. Hypernatremia

SIADH causes dilutional hyponatremia: excess ADH makes the kidneys reabsorb water without retaining solutes, so the extracellular fluid becomes more diluted and serum sodium falls. This hyponatremia is the hallmark finding, often with euvolemia and inappropriately concentrated urine. The other options don't fit the pattern—potassium isn't the main issue in SIADH, hyperglycemia is not an electrolyte disturbance caused by ADH, and hypernatremia would arise from water loss rather than water retention.

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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.

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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