

# PLAB Endocrinology Practice Exam (Sample)

## Study Guide



**Everything you need from our exam experts!**

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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 effect does thyroid hormone have on metabolism?**
  - A. Inhibits metabolic processes**
  - B. Has no effect on metabolism**
  - C. Accelerates metabolic processes**
  - D. Registers slight decreases in metabolic activity**
- 2. For a type 2 diabetes patient undergoing major surgery, what is the appropriate preoperative management regarding oral hypoglycaemics?**
  - A. Start him in IV insulin and glucose and K+ just before surgery**
  - B. Stop his oral hypoglycaemics on the day of the procedure**
  - C. Continue regular oral hypoglycaemic**
  - D. Stop oral hypoglycaemics the night before and start IV insulin sliding scale**
- 3. Which hormone is primarily involved in the regulation of the sleep-wake cycle?**
  - A. Cortisol**
  - B. Melatonin**
  - C. Serotonin**
  - D. Dopamine**
- 4. A young girl with T1DM presents with drowsiness and deep breathing and a blood sugar level of 20. What is the next appropriate step in her management?**
  - A. Serum urea**
  - B. Blood culture**
  - C. CT scan**
  - D. ABG**
- 5. In a patient with Cushing's syndrome, what laboratory finding would typically be expected?**
  - A. Low 24-hour urinary free cortisol**
  - B. Normal serum ACTH**
  - C. Increased 24-hour urinary free cortisol**
  - D. Decreased serum cortisol**

**6. What is the single most appropriate diagnosis for a 39-year-old man with unintentional weight loss, palpitations, sweating, diarrhea, and a visible neck lump?**

- A. Lymphoma
- B. Tuberculous lymphadenitis
- C. Thyroid Cancer
- D. Goiter

**7. A 54-year-old woman presents with abdominal pain and dark pigmentation of skin. What is the most likely electrolyte abnormality expected?**

- A. High Na+, Low K+
- B. Low Na+, High K+
- C. Low Na+, Low K+
- D. High Na+, High K+

**8. A patient with Addison's disease typically presents with which type of electrolyte imbalance?**

- A. High sodium, Low potassium
- B. Low sodium, Normal potassium
- C. Low sodium, High potassium
- D. Normal sodium, High potassium

**9. Which gland is responsible for producing adrenaline?**

- A. Pituitary gland
- B. Adrenal gland
- C. Pineal gland
- D. Thyroid gland

**10. Which clinical condition may result from chronic excess production of thyroid hormones?**

- A. Hypothyroidism
- B. Thyrotoxicosis
- C. Cushing's syndrome
- D. Addison's disease

## **Answers**

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

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## **Explanations**

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## 1. What effect does thyroid hormone have on metabolism?

- A. Inhibits metabolic processes
- B. Has no effect on metabolism
- C. Accelerates metabolic processes**
- D. Registers slight decreases in metabolic activity

Thyroid hormone plays a pivotal role in regulating metabolism. It primarily acts to accelerate metabolic processes, which is crucial for various physiological functions. This acceleration occurs because thyroid hormones, mainly thyroxine (T4) and triiodothyronine (T3), enhance the basal metabolic rate by increasing the rate of oxygen consumption and heat production in tissues. They promote the metabolism of carbohydrates, fats, and proteins, thus elevating the overall energy expenditure of the body. Thyroid hormones stimulate metabolic pathways such as glycolysis, gluconeogenesis, lipolysis, and protein synthesis. This stimulation leads to increased levels of key enzymes involved in these pathways, highlighting their significant impact on both the synthesis and breakdown of various substrates in the body. Because of this direct effect on metabolic processes, the notion that thyroid hormone inhibits, has no effect at all, or merely registers slight decreases in metabolic activity does not hold true. Rather, the correct understanding is that thyroid hormones are essential for proper metabolic functioning and energy homeostasis, making the acceleration of metabolic processes their primary effect.

## 2. For a type 2 diabetes patient undergoing major surgery, what is the appropriate preoperative management regarding oral hypoglycaemics?

- A. Start him in IV insulin and glucose and K+ just before surgery
- B. Stop his oral hypoglycaemics on the day of the procedure
- C. Continue regular oral hypoglycaemic
- D. Stop oral hypoglycaemics the night before and start IV insulin sliding scale**

For a patient with type 2 diabetes undergoing major surgery, it is crucial to manage blood glucose levels carefully to minimize the risk of perioperative complications such as infection, delayed healing, and cardiovascular events. Stopping oral hypoglycaemics the night before surgery and starting an intravenous (IV) insulin sliding scale allows for better control of blood glucose during the perioperative period. The rationale behind this approach includes the following key points: 1. **Blood Glucose Control**: Oral hypoglycaemics may not provide adequate control during the stress of surgery. The body's stress response during surgical procedures can lead to increased insulin resistance, making oral medications less effective. 2. **Adjustability of Insulin**: Using a sliding scale for IV insulin allows for real-time adjustments based on the patient's blood glucose levels. This flexibility is essential in a potentially unpredictable environment like surgery, where stress and changes in diet and activity can significantly affect glucose levels. 3. **Minimizing Risks**: By stopping oral medications, which can have prolonged effects and may lead to hypoglycemia, particularly in the fasting state prior to surgery, the risk of perioperative hypoglycemia is minimized. IV insulin provides a safer alternative that can be carefully managed. 4. \*\*

**3. Which hormone is primarily involved in the regulation of the sleep-wake cycle?**

- A. Cortisol**
- B. Melatonin**
- C. Serotonin**
- D. Dopamine**

Melatonin is the hormone primarily involved in the regulation of the sleep-wake cycle. It is produced by the pineal gland in response to darkness, signaling to the body that it is time to sleep. Melatonin's secretion is closely tied to the circadian rhythms, which dictate the body's internal clock, influencing sleep patterns and other physiological processes. When light exposure decreases, the production of melatonin increases, promoting feelings of sleepiness and thereby helping to regulate the cycle of sleep and wakefulness. This makes melatonin critical for maintaining healthy sleep patterns, particularly in response to changes in light throughout the day. The other hormones, while involved in various bodily functions, do not play as direct a role in regulating the sleep-wake cycle. Cortisol, for instance, is associated with stress and alertness and typically peaks in the early morning to help promote wakefulness. Serotonin, although it is related to mood regulation and can influence sleep indirectly, does not primarily govern the sleep-wake cycle like melatonin does. Dopamine is primarily involved in reward, motivation, and motor control, and is not a direct regulator of sleep patterns either.

**4. A young girl with T1DM presents with drowsiness and deep breathing and a blood sugar level of 20. What is the next appropriate step in her management?**

- A. Serum urea**
- B. Blood culture**
- C. CT scan**
- D. ABG**

In a case where a young girl with Type 1 Diabetes Mellitus (T1DM) presents with symptoms of drowsiness and deep breathing, accompanied by a significantly elevated blood sugar level, the clinical picture is suggestive of diabetic ketoacidosis (DKA). Deep breathing is indicative of the Kussmaul respiration that often accompanies metabolic acidosis, which is common in DKA. To properly manage this condition, obtaining an arterial blood gas (ABG) is crucial. The ABG will provide key information about the patient's acid-base status, including the level of acidosis or alkalosis and the presence of compensatory respiratory changes. This information helps guide the immediate treatment plan, which could include administration of intravenous fluids, insulin therapy, and electrolyte management. Other options, such as serum urea and blood culture, while important in their own right, are not immediate priorities in this context. A CT scan is not relevant to the acute management of DKA and would not provide useful information for addressing the current crisis. Therefore, performing an ABG is the most appropriate next step in assessing and managing the girl's condition effectively.

**5. In a patient with Cushing's syndrome, what laboratory finding would typically be expected?**

- A. Low 24-hour urinary free cortisol**
- B. Normal serum ACTH**
- C. Increased 24-hour urinary free cortisol**
- D. Decreased serum cortisol**

In a patient with Cushing's syndrome, the expected laboratory finding is increased 24-hour urinary free cortisol. Cushing's syndrome is characterized by hypercortisolism, which occurs due to excessive cortisol production, whether from endogenous sources like a pituitary adenoma (Cushing's disease), adrenal tumors, or ectopic ACTH secretion. The measurement of 24-hour urinary free cortisol provides a comprehensive assessment of cortisol secretion over an entire day, and elevated levels are indicative of Cushing's syndrome. This test is considered a reliable method for diagnosing the condition because it reflects the cumulative cortisol output and helps to differentiate between normal and excessive cortisol production. Other options would not align with the expected findings in Cushing's syndrome. For instance, low 24-hour urinary free cortisol would suggest a normal or decreased cortisol production, which is not consistent with the syndrome. Normal serum ACTH levels can occur in some subtypes of Cushing's syndrome, but they do not provide clear evidence of the condition itself. Finally, decreased serum cortisol contradicts the fundamental nature of Cushing's syndrome, where elevated cortisol levels are a defining feature. Hence, the correct laboratory finding that supports the diagnosis of Cushing's syndrome is indeed the increased 24-hour urinary free

**6. What is the single most appropriate diagnosis for a 39-year-old man with unintentional weight loss, palpitations, sweating, diarrhea, and a visible neck lump?**

- A. Lymphoma**
- B. Tuberculous lymphadenitis**
- C. Thyroid Cancer**
- D. Goiter**

The scenario describes a 39-year-old man with symptoms consistent with hyperthyroidism, which is often indicated by weight loss, palpitations, sweating, and diarrhea. The presence of a visible neck lump further suggests a thyroid-related condition. In this context, goiter, which refers to an enlargement of the thyroid gland, can result from various thyroid disorders, including hyperthyroidism, which could explain the symptoms of weight loss, palpitations, and increased sweating. Goiter can occur in conditions such as Graves' disease, where hyperthyroidism is present along with thyroid enlargement. While the other options like lymphoma, tuberculous lymphadenitis, and thyroid cancer could present with a neck lump, they do not typically cause the specific constellation of symptoms observed in this patient. Lymphoma and tuberculous lymphadenitis often present with systemic features, but the profiles would generally include fever and other nonspecific signs rather than the hypermetabolic symptoms seen here. Thyroid cancer might present with a lump but is less likely to cause the hyperthyroid symptoms without additional specific findings. Thus, considering the entire clinical picture, goiter is the most appropriate diagnosis in this case, as it encompasses the enlarged thyroid and the accompanying symptoms that suggest

**7. A 54-year-old woman presents with abdominal pain and dark pigmentation of skin. What is the most likely electrolyte abnormality expected?**

- A. High Na+, Low K+**
- B. Low Na+, High K+**
- C. Low Na+, Low K+**
- D. High Na+, High K+**

The presentation of abdominal pain and dark pigmentation of the skin in this 54-year-old woman suggests a possible diagnosis of primary adrenal insufficiency, also known as Addison's disease. One of the hallmark features of this condition is the disruption of adrenal hormone production, particularly cortisol and aldosterone. In cases of adrenal insufficiency, there is decreased secretion of cortisol, which normally helps maintain blood pressure and manage stress, and aldosterone, which is crucial for sodium retention and potassium excretion. With low aldosterone levels, the kidneys are unable to retain sodium, leading to hyponatremia (low sodium levels) and an inability to excrete potassium, resulting in hyperkalemia (high potassium levels). Thus, the expected electrolyte abnormality in this scenario would be characterized by low sodium and high potassium levels, correlating with option B. The clinical picture of dark pigmentation also supports this diagnosis, as increased levels of adrenocorticotrophic hormone (ACTH) in response to low cortisol can lead to increased melanin production, causing the observed skin pigmentation changes. Understanding these mechanisms is crucial for recognizing the signs and symptoms associated with adrenal insufficiency and interpreting electrolyte disturbances in this context.

**8. A patient with Addison's disease typically presents with which type of electrolyte imbalance?**

- A. High sodium, Low potassium**
- B. Low sodium, Normal potassium**
- C. Low sodium, High potassium**
- D. Normal sodium, High potassium**

Addison's disease, also known as primary adrenal insufficiency, is characterized by the adrenal glands' inability to produce sufficient amounts of cortisol and aldosterone. This deficiency leads to specific electrolyte imbalances. The correct choice reflects the typical laboratory findings in someone with Addison's disease, which include low sodium (hyponatremia) and high potassium (hyperkalemia). The low sodium occurs due to inadequate aldosterone secretion, which normally promotes sodium reabsorption in the kidneys. When aldosterone levels are low, sodium is lost in the urine, leading to decreased serum sodium levels. Simultaneously, the lack of aldosterone also causes an inability to excrete potassium effectively. This results in elevated potassium levels in the bloodstream. Patients with Addison's disease may present with symptoms related to these imbalances, such as fatigue, muscle weakness, and fluctuations in blood pressure. Thus, the characteristic electrolyte pattern of low sodium and high potassium is what defines Addison's disease, making the choice that reflects this imbalance accurate.

## 9. Which gland is responsible for producing adrenaline?

- A. Pituitary gland
- B. Adrenal gland**
- C. Pineal gland
- D. Thyroid gland

The adrenal gland is responsible for producing adrenaline, also known as epinephrine. This hormone plays a crucial role in the body's fight-or-flight response, which is a physiological reaction to stressful situations. When the body perceives a threat, the adrenal glands release adrenaline into the bloodstream, leading to various effects such as increased heart rate, improved blood flow to muscles, and heightened alertness. This rapid release of adrenaline prepares the body to respond effectively to perceived dangers. The adrenal glands are located on top of each kidney and consist of two main parts: the adrenal cortex and the adrenal medulla. The adrenal medulla is specifically where adrenaline is synthesized and secreted. This function is distinct from other glands involved in different hormonal pathways, which is crucial for understanding the specific role of the adrenal gland in stress response and overall hormonal balance in the body.

## 10. Which clinical condition may result from chronic excess production of thyroid hormones?

- A. Hypothyroidism
- B. Thyrotoxicosis**
- C. Cushing's syndrome
- D. Addison's disease

Chronic excess production of thyroid hormones leads to a condition known as thyrotoxicosis. This condition is characterized by an overactive metabolism, which can result from various underlying causes, such as Graves' disease or toxic multinodular goiter. Symptoms of thyrotoxicosis can include weight loss, increased appetite, rapid heart rate, heat intolerance, excessive sweating, and nervousness due to the increased metabolic rate caused by elevated levels of thyroid hormones. It's important to note that while hypothyroidism is characterized by a deficiency of thyroid hormones and conditions like Cushing's syndrome and Addison's disease are related to adrenal hormone imbalances, these do not stem from an excess of thyroid hormones but rather from dysfunction within the adrenal gland system. Thus, thyrotoxicosis is the only option that directly correlates with chronic excess production of thyroid hormones.

# 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:**

**<https://plabendocrinology.examzify.com>**

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

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