

AAB MEDICAL TECHNOLOGIST (MT) – CHEMISTRY PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE

<https://aabmtchemistry.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	16

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.

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

SAMPLE

- 1. Which of the following statements about hemolysis is true?**
 - A. It is always preventable
 - B. Only samples collected from women are affected
 - C. It can cause significant errors in laboratory results
 - D. It improves the quality of serum samples
- 2. Catecholamines are primarily secreted by which part of the body?**
 - A. Adrenal medulla
 - B. Hormone-secreting pituitary
 - C. Thyroid gland
 - D. Pineal gland
- 3. What is the primary goal of quality control in a laboratory?**
 - A. To speed up the testing process
 - B. To ensure accuracy and reliability of test results
 - C. To minimize the costs of laboratory tests
 - D. To increase the number of tests performed
- 4. In a lipid panel, which substances are primarily measured?**
 - A. Blood glucose and insulin
 - B. Cholesterol and triglycerides
 - C. Sodium and potassium
 - D. Albumin and globulins
- 5. What element is reduced at the cathode of a Clark electrode?**
 - A. Carbon dioxide
 - B. Glucose
 - C. Oxygen
 - D. Potassium
- 6. Which of these substances is used to enhance the selectivity for potassium in ion-selective electrodes?**
 - A. Valinomycin
 - B. Chloride
 - C. Calcium ionophore
 - D. Benzyl alcohol

- 7. Which laboratory test monitors kidney function effectively alongside creatinine levels?**
- A. Complete blood count
 - B. B-type natriuretic peptide
 - C. Blood urea nitrogen
 - D. HbA1c
- 8. The mean for the normal glucose control is 76 mg/dL and one standard deviation is 3.0. What are the 95% confidence limits for the glucose control?**
- A. 73-76
 - B. 70-82
 - C. 67-85
 - D. 64-88
- 9. What is the significance of measuring 17-ketosteroids?**
- A. Evaluation of kidney function
 - B. Assessment of adrenal function
 - C. Monitoring blood glucose levels
 - D. Determining liver enzymes
- 10. Which hormone is known to exhibit diurnal variation?**
- A. Adrenaline
 - B. Cortisol
 - C. Insulin
 - D. Thyroxine

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. Which of the following statements about hemolysis is true?

- A. It is always preventable
- B. Only samples collected from women are affected
- C. It can cause significant errors in laboratory results**
- D. It improves the quality of serum samples

Hemolysis refers to the breakdown of red blood cells, leading to the release of hemoglobin and other intracellular components into the plasma or serum. This phenomenon can interfere with laboratory test results, making option C true. When hemolysis occurs, it can cause significant analytical errors, particularly in tests that measure electrolytes, enzymes, and certain proteins. For instance, elevated potassium levels may occur due to the release of potassium from red blood cells, leading to potentially inaccurate assessments and clinical decisions. Understanding hemolysis is crucial for laboratory professionals, as they must be vigilant in preventing it during blood collection and handling. Factors that can contribute to hemolysis include improper venipuncture techniques, using small needles, or vigorous shaking of samples. The other options do not accurately reflect the nature of hemolysis. It is not always preventable due to various factors that may contribute to it during specimen collection and processing. Additionally, hemolysis affects samples from all individuals, not just those collected from women. Lastly, hemolysis does not improve the quality of serum samples; in fact, it typically degrades sample quality, complicating the interpretation of laboratory tests.

2. Catecholamines are primarily secreted by which part of the body?

- A. Adrenal medulla**
- B. Hormone-secreting pituitary
- C. Thyroid gland
- D. Pineal gland

Catecholamines, which include epinephrine (adrenaline) and norepinephrine (noradrenaline), are primarily secreted by the adrenal medulla. This part of the adrenal glands is responsible for the immediate response to stress and regulates the body's fight-or-flight response. When the body perceives a threat, the adrenal medulla releases catecholamines into the bloodstream, resulting in increased heart rate, blood pressure, and energy mobilization. The adrenal medulla is specifically designed for this function, unlike the other choices, which have different roles in hormone production and regulation. The hormone-secreting pituitary gland is responsible for a variety of hormones that control other endocrine glands but does not produce catecholamines. The thyroid gland primarily secretes thyroid hormones like thyroxine (T4) and triiodothyronine (T3), which are involved in metabolism. The pineal gland primarily secretes melatonin, which regulates sleep-wake cycles, not catecholamines. Thus, the correct answer highlights the unique role of the adrenal medulla in catecholamine secretion.

3. What is the primary goal of quality control in a laboratory?

- A. To speed up the testing process
- B. To ensure accuracy and reliability of test results**
- C. To minimize the costs of laboratory tests
- D. To increase the number of tests performed

The primary goal of quality control in a laboratory is to ensure accuracy and reliability of test results. This is essential because laboratory results have significant implications for patient diagnosis and treatment. Quality control processes include regular calibration of instruments, validation of methods, and the use of control samples to monitor the performance of assays. By maintaining stringent quality control measures, laboratories can confidently report results that are both precise and accurate, ultimately leading to better patient outcomes and trust in laboratory services. While speeding up the testing process, minimizing costs, or increasing the number of tests performed may be important operational goals for some laboratories, they do not encapsulate the core objective of quality control. The fundamental focus of quality control is to uphold the integrity and dependability of the test results, as any inaccuracies could lead to misdiagnosis or inappropriate treatment decisions.

4. In a lipid panel, which substances are primarily measured?

- A. Blood glucose and insulin
- B. Cholesterol and triglycerides**
- C. Sodium and potassium
- D. Albumin and globulins

In a lipid panel, cholesterol and triglycerides are the primary substances measured. This test is designed to assess the levels of lipids in the blood, which are vital for evaluating cardiovascular risk and monitoring lipid-related diseases. Cholesterol is comprised of several types, including low-density lipoprotein (LDL) and high-density lipoprotein (HDL), both of which have different implications for heart health. Elevated levels of LDL cholesterol are often associated with an increased risk of atherosclerosis and heart disease, while HDL cholesterol is considered protective against such conditions. Triglycerides, on the other hand, provide insight into how the body converts excess calories into fat, which can also influence cardiovascular health when levels are elevated. Other options listed involve substances that are measured in different types of tests. Blood glucose and insulin relate to diabetes assessment, while sodium and potassium are typically assessed in electrolyte panels to evaluate kidney function and fluid balance. Albumin and globulins are proteins measured in liver function tests or to assess nutritional status and immune function, not in a lipid panel. Hence, the focus on cholesterol and triglycerides makes the choice of answer correct in the context of what a lipid panel is intended to measure.

5. What element is reduced at the cathode of a Clark electrode?

- A. Carbon dioxide
- B. Glucose
- C. Oxygen**
- D. Potassium

In the operation of a Clark electrode, which is primarily used for measuring oxygen concentration in various environments, oxygen is the key element that gets reduced at the cathode. This reduction occurs through a redox reaction where oxygen gains electrons, resulting in the formation of hydroxide ions. The polarographic mechanism allows for the quantification of the partial pressure of oxygen based on this reduction process. When an electric current is applied, oxygen molecules are drawn to the electrode surface, where they undergo reduction. The electrochemical reaction is essential for the functioning of the Clark electrode and is central to its application in clinical laboratories, particularly for measuring dissolved oxygen levels in blood and other fluids. This process emphasizes the role of oxygen as the primary analyte in this context. The other options listed do not directly participate in the reduction process at the cathode of a Clark electrode. Carbon dioxide, glucose, and potassium are not involved in this particular electrode's electrochemical reaction mechanism for oxygen measurement.

6. Which of these substances is used to enhance the selectivity for potassium in ion-selective electrodes?

- A. Valinomycin**
- B. Chloride
- C. Calcium ionophore
- D. Benzyl alcohol

Valinomycin is a well-known ionophore that specifically binds to potassium ions (K^+), enhancing the selectivity of ion-selective electrodes (ISEs) for this particular ion. It facilitates the transport of potassium across a membrane by forming a stable complex with the ion. This selectivity is crucial in various analytical applications, such as measuring potassium levels in clinical samples, because it minimizes interference from other cations that may be present in the solution. The ability of valinomycin to selectively bind potassium ions is a key feature that makes it suitable for use in ion-selective electrodes. Its structure allows it to fit potently with K^+ ions due to the ion's size and charge, leading to relatively high sensitivity and specificity. In contrast, the other substances mentioned have different roles or properties and do not enhance the selectivity for potassium in the same effective manner. Chloride, for instance, does not specifically enhance potassium selectivity; instead, it may contribute to other analytical responses but lacks the targeted specificity that valinomycin provides. Similarly, a calcium ionophore is more related to calcium ions and would not aid in the selective measurement of potassium ions. Benzyl alcohol is often used as a solvent or in various chemical applications

7. Which laboratory test monitors kidney function effectively alongside creatinine levels?

- A. Complete blood count
- B. B-type natriuretic peptide
- C. Blood urea nitrogen**
- D. HbA1c

Monitoring kidney function is important for assessing renal health, and one effective laboratory test that complements creatinine levels is blood urea nitrogen (BUN). Both creatinine and BUN are nitrogenous waste products that the kidneys filter from the blood, and measuring their levels provides valuable insight into the kidneys' ability to excrete waste and maintain normal bodily functions. Creatinine is primarily produced from muscle metabolism and released into the bloodstream at a relatively constant rate, while BUN reflects the liver's production of urea, which is influenced by protein intake, liver function, and hydration status. Together, these two measurements offer a more comprehensive view of kidney function. For instance, a significant discrepancy between BUN and creatinine levels can indicate specific renal pathologies or issues related to hydration or protein intake, enhancing the diagnostic accuracy for conditions affecting the kidneys. The other tests listed do not specifically monitor kidney function. A complete blood count evaluates overall health and detects various disorders such as infections and anemia but does not provide direct information about kidney filtration capability. B-type natriuretic peptide is used primarily in diagnosing heart failure and assessing cardiac function. HbA1c is a marker for long-term glucose control in diabetes management and is unrelated to kidney function assessment. Therefore, blood

8. The mean for the normal glucose control is 76 mg/dL and one standard deviation is 3.0. What are the 95% confidence limits for the glucose control?

- A. 73-76
- B. 70-82**
- C. 67-85
- D. 64-88

To determine the 95% confidence limits for the glucose control, we can use the mean and standard deviation provided, along with the understanding of how confidence intervals work in a normal distribution. The mean glucose level is given as 76 mg/dL, and the standard deviation is 3.0 mg/dL. In a normal distribution, approximately 95% of the values lie within two standard deviations from the mean. This means that to find the 95% confidence limits, you would calculate: - Lower limit: $\text{Mean} - 2(\text{Standard Deviation}) = 76 - 2(3) = 76 - 6 = 70$ mg/dL - Upper limit: $\text{Mean} + 2(\text{Standard Deviation}) = 76 + 2(3) = 76 + 6 = 82$ mg/dL. This results in confidence limits ranging from 70 mg/dL to 82 mg/dL, which indicates that we can be 95% confident that the true population mean for glucose levels falls within this interval. Thus, the correct choice reflects these computed confidence limits accurately.

9. What is the significance of measuring 17-ketosteroids?

- A. Evaluation of kidney function
- B. Assessment of adrenal function**
- C. Monitoring blood glucose levels
- D. Determining liver enzymes

Measuring 17-ketosteroids is significant primarily in the assessment of adrenal function. These compounds are metabolites of steroid hormones produced by the adrenal cortex, which play a critical role in various physiological processes, including metabolism and the stress response. In clinical practice, the measurement of 17-ketosteroids helps in diagnosing conditions related to adrenal gland disorders, such as Cushing's syndrome or adrenal insufficiency. Elevated or decreased levels of these metabolites can indicate hypersecretion or hypo-secretion of adrenal hormones. For example, in cases of excessive adrenal corticoid secretion, such as with tumors or adrenal hyperplasia, 17-ketosteroid levels may be elevated. Understanding the function of the adrenal gland is crucial for effective diagnosis and management of various disorders, making this measurement a valuable tool in clinical assessments related to adrenal functionality.

10. Which hormone is known to exhibit diurnal variation?

- A. Adrenaline
- B. Cortisol**
- C. Insulin
- D. Thyroxine

Cortisol is well known for its diurnal variation, which means that its levels fluctuate throughout the day, typically peaking in the early morning upon waking and gradually declining throughout the day, reaching their lowest levels late in the evening. This pattern is influenced by the body's internal clock, also known as the circadian rhythm, and is integral to various physiological processes, including metabolism, immune response, and stress management. Understanding cortisol's diurnal rhythm is essential in clinical chemistry, as it affects diagnostic interpretations. For example, abnormal cortisol levels at specific times may indicate conditions like Cushing's syndrome or adrenal insufficiency. Therefore, when measuring cortisol for diagnostic purposes, the timing of specimen collection is critical to achieve accurate assessment. In contrast to cortisol, other hormones like adrenaline, insulin, and thyroxine do not exhibit the same pronounced diurnal variation. Adrenaline levels can fluctuate based on stress and physical activity rather than a consistent daily pattern. Insulin secretion is more closely tied to dietary intake and blood glucose levels, rather than a strict daily rhythm. Similarly, while thyroxine levels can display some variation, they are not characterized by a clear diurnal cycle like cortisol. This distinction highlights why cortisol is the hormone best known for exhibiting di

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://aabmtchemistry.examzify.com>

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

SAMPLE