

AAB MEDICAL TECHNOLOGIST (MT) – GENERALIST PRACTICE EXAM (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. A histologist has stained a blood sample but the basophils have poor definition. What action would improve the definition?**
 - A. Increase the stain concentration
 - B. Reduce the time between preparing the smear and fixation
 - C. Use a different stain entirely
 - D. Thicken the blood smear
- 2. Which blood type is characterized by the absence of any Rh antigens?**
 - A. A+
 - B. B-
 - C. AB-
 - D. Rh-null
- 3. Which blood type possesses both A and B antigens?**
 - A. A+
 - B. B+
 - C. AB+
 - D. O+
- 4. Coombs control cells are red blood cells coated with which antibody?**
 - A. IgM
 - B. IgG
 - C. IgA
 - D. IgE
- 5. Which laboratory finding is often used to assess blood gas status?**
 - A. Blood glucose level
 - B. Red blood cell count
 - C. Arterial blood pH
 - D. Platelet function
- 6. The class of an antibody is determined by which part of the antibody?**
 - A. Variable region of the heavy chain
 - B. Light chain
 - C. Constant region of the heavy chain
 - D. Fc region

- 7. What protein breaks down to form D-dimer during clot dissolution?**
- A. Fibrinogen
 - B. Fibrin
 - C. Thrombin
 - D. Prothrombin
- 8. Which type of transfusion reaction occurs due to the destruction of incompatible red blood cells?**
- A. Circulatory overload
 - B. Febrile
 - C. Hemolytic
 - D. Anaphylactic
- 9. What does the term "left shift" indicate in a complete blood count (CBC)?**
- A. An increase in immature neutrophils
 - B. Decrease in hemoglobin levels
 - C. Increase in eosinophils
 - D. Decrease in platelet count
- 10. What occurs to red blood cells during the incubation phase of the indirect antiglobulin test?**
- A. Sensitization
 - B. Maturation
 - C. Hemolysis
 - D. Storage

Answers

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

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Explanations

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1. A histologist has stained a blood sample but the basophils have poor definition. What action would improve the definition?

- A. Increase the stain concentration
- B. Reduce the time between preparing the smear and fixation**
- C. Use a different stain entirely
- D. Thicken the blood smear

To improve the definition of basophils in a stained blood sample, reducing the time between preparing the smear and fixation is crucial. When blood smears are left unprocessed for too long before fixation, the cells may degrade or lose structural integrity, which can lead to poor staining characteristics. Fixation stabilizes the cellular components and minimizes degradation, allowing for clearer distinctions between the different cellular elements, including basophils. This action ensures that the cellular morphology is preserved as much as possible, which is essential for achieving sharp and well-defined cellular structures in the stained smear. A quick fixation helps in maintaining the contrast between the basophils and other blood cells, enhancing their visibility. Adjusting stain concentration, using a different stain, or thickening the smear may alter the overall quality of the stain or the appearance of the cells, but they do not specifically address the issue of cellular integrity and morphology preservation that is crucial for improving definition in the microscopy of blood cells.

2. Which blood type is characterized by the absence of any Rh antigens?

- A. A+
- B. B-
- C. AB-
- D. Rh-null**

The blood type characterized by the absence of any Rh antigens is Rh-null. Individuals with Rh-null blood type do not express any of the Rh antigens on the surface of their red blood cells, including the common D antigen associated with the Rh factor. This condition is extremely rare and can lead to complications in blood transfusions, as Rh-null individuals can develop antibodies against Rh antigens not present in their serum. In contrast, the other blood types mentioned all contain Rh antigens to varying degrees. For instance, A+ and B- indicate the presence of the Rh antigen (positive and negative, respectively), while AB- signifies the presence of A and B antigens along with the absence of the Rh antigen (indicating that the person is negative for Rh). None of these blood types can be classified as Rh-null since they still have some Rh antigen presence.

3. Which blood type possesses both A and B antigens?

- A. A+
- B. B+
- C. AB+**
- D. O+

The blood type that possesses both A and B antigens is AB+. Individuals with this blood type have red blood cells that express both A and B antigens on their surface. This unique attribute allows them to receive blood from all other ABO blood groups, making them universal recipients. The presence of both antigens explains why AB individuals do not produce antibodies against A or B antigens, thus having a lower risk of transfusion reactions when receiving blood containing these antigens. In contrast, blood types A and B express only one type of antigen (either A or B, respectively) and produce antibodies against the other type, thus limiting their compatibility with other blood types. Blood type O, on the other hand, lacks both A and B antigens, making it the universal donor for red blood cells but incompatible with A and B types when in need of transfusion.

4. Coombs control cells are red blood cells coated with which antibody?

- A. IgM
- B. IgG**
- C. IgA
- D. IgE

The correct choice is IgG because Coombs control cells are specifically used in the Antiglobulin test (Coombs test) to verify the performance of the test by ensuring that the reagents used can detect IgG-coated red blood cells. The presence of IgG antibodies on the surface of these control cells allows for the agglutination to occur when exposed to Coombs reagent, which contains anti-IgG. In the context of blood banking and immunohematology, IgG is the most relevant isotype when testing for sensitization of red blood cells, particularly in cases of hemolytic anemias or transfusion reactions. These control cells serve as a benchmark to confirm that the test is working correctly, and that any agglutination observed in a patient sample is indeed due to the presence of IgG-coated red blood cells, not a problem with the reagents used or the testing procedure itself. Other antibody classes like IgM, IgA, or IgE do not play a role in the context of Coombs control cells for this specific test. IgM generally reacts well at lower temperatures and is less involved in the agglutination processes related to red blood cells in this scenario, while IgA and Ig

5. Which laboratory finding is often used to assess blood gas status?

- A. Blood glucose level
- B. Red blood cell count
- C. Arterial blood pH**
- D. Platelet function

The assessment of blood gas status is primarily concerned with the levels of gases in the blood, particularly oxygen and carbon dioxide, as well as the acid-base balance of the body. Arterial blood pH is a direct measurement that indicates the acidity or alkalinity of the blood, which is a crucial component of this assessment. The pH level can help determine if the body is in a state of acidosis or alkalosis, conditions that can arise from respiratory or metabolic issues. In the context of blood gas analysis, arterial blood pH provides insight into the effectiveness of gas exchange in the lungs and the body's ability to maintain a stable internal environment despite various changes in metabolism or respiratory function. This makes it a central value in assessing blood gas status and determining appropriate clinical interventions. Other laboratory findings, such as blood glucose levels, red blood cell counts, and platelet function, serve different clinical purposes and are not specifically utilized to evaluate blood gas status. Blood glucose levels are important for diagnosing diabetes and monitoring metabolic function, red blood cell counts are essential for evaluating anemia and overall oxygen-carrying capacity, and platelet function tests assess hemostasis rather than gas exchange.

6. The class of an antibody is determined by which part of the antibody?

- A. Variable region of the heavy chain
- B. Light chain
- C. Constant region of the heavy chain**
- D. Fc region

The class of an antibody is determined by the constant region of the heavy chain. This region is responsible for defining the isotype of the antibody, such as IgG, IgA, IgM, IgD, or IgE. Each isotype has distinct functions and roles in the immune response, and the constant region dictates these characteristics. It interacts with various components of the immune system, such as cells and complement proteins, allowing for a tailored immune response. The variable region of the heavy chain contributes to the specificity of the antibody, enabling it to bind to a particular antigen, but it does not determine the antibody class. The light chain, while important for the overall structure and function of the antibody, also does not play a role in class determination. The Fc region, which is part of the constant region, is crucial for interactions with immune cells, but it is the broader constant region of the heavy chain that ultimately classifies the antibody.

7. What protein breaks down to form D-dimer during clot dissolution?

- A. Fibrinogen
- B. Fibrin**
- C. Thrombin
- D. Prothrombin

D-dimer is a small protein fragment present in the blood after a blood clot dissolves. It is formed specifically from the breakdown of fibrin, which is one of the key proteins involved in the clotting process. When a blood clot is formed, fibrin strands weave through the platelets, providing structure and stability to the clot. During the process of fibrinolysis, the enzyme plasmin dissolves fibrin, leading to the creation of D-dimer as the fibrin is degraded. Fibrinogen, while an important protein in the formation of fibrin, does not directly lead to D-dimer formation. Thrombin and prothrombin are crucial in the coagulation cascade for clot formation but do not play a direct role in the breakdown of clots or the formation of D-dimer. Thus, fibrin is indeed the protein that breaks down to produce D-dimer during the process of clot dissolution, confirming the correctness of the answer.

8. Which type of transfusion reaction occurs due to the destruction of incompatible red blood cells?

- A. Circulatory overload
- B. Febrile
- C. Hemolytic**
- D. Anaphylactic

The type of transfusion reaction that occurs due to the destruction of incompatible red blood cells is hemolytic. This reaction is primarily due to the recipient's immune system recognizing the transfused red blood cells as foreign, which leads to an immune response that destroys those cells. Hemolytic reactions can happen when a person receives blood with incompatible ABO or Rh antigens. The immediate response involves antibodies binding to the foreign red blood cells, leading to their lysis (destruction). This can result in symptoms such as fever, chills, back pain, and hemoglobinuria. In contrast, circulatory overload occurs when there is too much blood transfused too quickly, leading to fluid overload in the vascular system rather than an immune reaction. Febrile reactions are associated with the recipient's immune response to white blood cells or plasma proteins in the transfused blood but do not involve the destruction of red blood cells. Anaphylactic reactions are severe allergic responses that can occur due to proteins in the blood products but are unrelated to the incompatibility of red blood cells.

9. What does the term "left shift" indicate in a complete blood count (CBC)?

A. An increase in immature neutrophils

B. Decrease in hemoglobin levels

C. Increase in eosinophils

D. Decrease in platelet count

The term "left shift" in a complete blood count (CBC) refers specifically to an increase in the number of immature neutrophils, such as band cells, in the bloodstream. This phenomenon is commonly associated with the body's response to infections or inflammation, where the bone marrow releases these immature forms to meet the high demand for neutrophils during a heightened immune response. The presence of immature neutrophils indicates that the body is actively fighting an infection or experiencing another type of stress, as it often occurs in bacterial infections. Clinicians evaluate the degree of left shift to gauge the severity of the condition or the effectiveness of treatment. The other choices do not pertain to the definition of "left shift." A decrease in hemoglobin levels, an increase in eosinophils, or a decrease in platelet count are separate laboratory findings that signify different underlying health issues and do not relate directly to the concept of left shift in the context of neutrophil maturation.

10. What occurs to red blood cells during the incubation phase of the indirect antiglobulin test?

A. Sensitization

B. Maturation

C. Hemolysis

D. Storage

During the incubation phase of the indirect antiglobulin test, red blood cells undergo sensitization. This process involves the binding of antibodies present in the serum to specific antigens on the surface of the red blood cells. Sensitization is essential for the detection of antibodies because it allows the test to identify any potential incompatibilities between blood types. In this phase, antibodies attach to their corresponding antigens without causing immediate destruction of the red blood cells, which would occur later in the testing process if hemolysis were to happen. Sensitization is a critical step that precedes further steps in the testing, such as the addition of antiglobulin reagent, which will cause agglutination if the sensitization has occurred. In contrast, maturation refers to the process of development and differentiation, which is not applicable in this context. Hemolysis involves the rupture of red blood cells and occurs under different conditions, typically after sensitization has taken place and there is a reaction with complement. Storage is relevant to the preservation of blood components but does not relate directly to the events occurring during the incubation phase of this specific testing process.

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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