

AAB Medical Technologist (MT) - Generalist 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. For how long can donated platelets be stored at room temperature?**
 - A. 3 days**
 - B. 5 days**
 - C. 7 days**
 - D. 10 days**

- 2. What color label represents bags of A blood?**
 - A. Red**
 - B. Yellow**
 - C. Blue**
 - D. Green**

- 3. Which ion is necessary for the blood clotting process?**
 - A. Potassium**
 - B. Sodium**
 - C. Calcium**
 - D. Magnesium**

- 4. What is one potential effect of lysing red blood cells in a blood sample?**
 - A. Increased white blood cell count**
 - B. Altered coagulation factors**
 - C. More accurate platelet counts**
 - D. Mismatch in antigens**

- 5. What does a diagnosis of febrile non-hemolytic transfusion reaction primarily indicate?**
 - A. Incompatibility with donor blood**
 - B. Activation of the immune system against transfused blood products**
 - C. Presence of antibodies against donor antigens**
 - D. None of the above**

- 6. What principle is the Coulter principle based on in hematology?**
- A. Change in blood viscosity**
 - B. Change in cell electrical currents**
 - C. Change in light scattering**
 - D. Change in serum osmolality**
- 7. T cells exert their actions primarily by secreting what type of proteins?**
- A. Antibodies**
 - B. Cytokines**
 - C. Enzymes**
 - D. Growth factors**
- 8. What is the likely cause of a 2°C temperature rise during a blood transfusion with no abnormal findings?**
- A. Acute hemolytic reaction**
 - B. Febrile non-hemolytic reaction**
 - C. Allergic reaction**
 - D. Transfusion-associated lung injury**
- 9. Which marker is commonly used to monitor the treatment of ovarian cancer?**
- A. PSA**
 - B. CA-125**
 - C. CEA**
 - D. AFP**
- 10. What is the formula to calculate the reticulocyte production index?**
- A. Corrected reticulocyte percentage / number of nucleated RBC**
 - B. Corrected reticulocyte percentage x maturation correction**
 - C. Corrected reticulocyte percentage + maturation correction**
 - D. Corrected reticulocyte percentage / maturation correction**

Answers

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

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Explanations

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1. For how long can donated platelets be stored at room temperature?

- A. 3 days
- B. 5 days**
- C. 7 days
- D. 10 days

Donated platelets can be stored at room temperature for a maximum of five days. This storage condition is critical for maintaining the functionality and viability of the platelets, as they are sensitive to temperature variations. Platelets are typically stored in a platelet concentrator with continuous agitation to ensure that they remain viable and functional throughout the storage period. While some blood components, like red blood cells, can be stored longer under refrigerated conditions, platelets require room temperature storage to maintain their normal physiology and prevent clumping. Beyond five days, the quality of the platelets begins to decline significantly, making them less effective for transfusion purposes. After this period, the risk of bacterial growth also increases, which can compromise the safety of transfused platelets. Understanding the storage guidelines for platelets is crucial for healthcare professionals involved in transfusion medicine, ensuring that patients receive products that are both safe and effective. This is why the correct answer indicates a five-day storage limit under appropriate conditions.

2. What color label represents bags of A blood?

- A. Red
- B. Yellow**
- C. Blue
- D. Green

The color label that represents bags of A blood is conventionally yellow. In blood banking and transfusion medicine, different blood groups are identified by specific color coding on the blood bags to ensure easy identification and prevent errors. Yellow is used for type A blood, which helps healthcare providers quickly distinguish it from other blood types during storage and transfusion processes. This system of color coding plays a crucial role in maintaining safety protocols in transfusion medicine, as blood type mismatches can lead to serious complications. Color-coding enhances the efficiency of blood management, especially in emergency settings where time is of the essence. Other color labels are designated for different blood types; for example, red may represent type O, blue for type B, and green for type AB. Each color corresponds to a specific blood type, serving as a visual guide to ensure proper blood component selection and administration.

3. Which ion is necessary for the blood clotting process?

- A. Potassium
- B. Sodium
- C. Calcium**
- D. Magnesium

Calcium is essential for the blood clotting process because it acts as a cofactor in several steps of the coagulation cascade. Specifically, calcium ions facilitate the conversion of prothrombin to thrombin, which is a critical step in the formation of fibrin, leading to the stabilization of the clot. This process begins when a vessel is injured, leading to the exposure of tissue factor and collagen, which in turn activate platelets and the clotting factors that require calcium ions to properly function. Calcium is also involved in the activation of various clotting factors (such as Factors VII, IX, X, XI, and XII) and plays a vital role in maintaining the structure and function of the platelets themselves during clot formation. Without adequate levels of calcium, the clotting mechanism cannot proceed effectively, resulting in prolonged bleeding. Thus, its crucial role makes calcium an integral component of the hemostatic process.

4. What is one potential effect of lysing red blood cells in a blood sample?

- A. Increased white blood cell count
- B. Altered coagulation factors
- C. More accurate platelet counts**
- D. Mismatch in antigens

Lysing red blood cells (RBCs) in a blood sample is a common laboratory technique that can significantly impact the components of the sample. The correct choice highlights that lysing RBCs may provide a more accurate platelet count. When RBCs are lysed, the plasma and other components become more accessible for analysis. This can enhance the precision of automated complete blood counts (CBCs). In particular, platelet counts can be more accurately determined because the hemoglobin released from lysed RBCs does not interfere with the counting of platelets, which is crucial for assessing clotting ability and diagnosing various conditions. In contrast, when RBCs remain intact, their presence can lead to inaccuracies in platelet counting due to overlapping cell populations and potential miscalculations in automated hematological analyzers. By lysing the RBCs, the clarity of the remaining components, particularly the platelets, improves, leading to more reliable results.

5. What does a diagnosis of febrile non-hemolytic transfusion reaction primarily indicate?

A. Incompatibility with donor blood

B. Activation of the immune system against transfused blood products

C. Presence of antibodies against donor antigens

D. None of the above

A diagnosis of febrile non-hemolytic transfusion reaction primarily indicates the activation of the immune system against transfused blood products. This type of reaction is characterized by the development of fever and chills during or shortly after a blood transfusion, typically due to the recipient's immune response to white blood cells, cytokines, or other components present in the donor blood. In this context, the immune system can react to minor histocompatibility antigens found on the transfused leukocytes. Even though the blood may be deemed compatible in terms of ABO and Rh blood group systems, the presence of these antigens can trigger a febrile response, which is generally non-life-threatening but requires monitoring and management. This understanding highlights the importance of pre-transfusion practices, such as leukoreduction, which can minimize the risk of such febrile reactions by removing most white blood cells from the blood components. Knowing the underlying cause helps healthcare providers manage these reactions effectively and improve patient safety during transfusions.

6. What principle is the Coulter principle based on in hematology?

A. Change in blood viscosity

B. Change in cell electrical currents

C. Change in light scattering

D. Change in serum osmolality

The Coulter principle is based on the detection of changes in cell electrical currents as cells pass through an electrical sensing zone. When a cell enters this zone, it displaces a volume of electrolyte solution, which results in a change in the electrical impedance. This change in impedance is directly proportional to the size of the cell. As a result, the Coulter counter can accurately count and size blood cells, making it a fundamental technique in hematology for analyzing blood samples. This principle is crucial for the automated counting and sizing of red blood cells, white blood cells, and platelets, providing vital information for diagnosing various medical conditions. By leveraging electrical properties rather than physical attributes like viscosity or light scattering, the Coulter principle ensures precise and reliable results in blood analysis.

7. T cells exert their actions primarily by secreting what type of proteins?

A. Antibodies

B. Cytokines

C. Enzymes

D. Growth factors

T cells are a crucial component of the adaptive immune system, and they exert their effects primarily by secreting signaling proteins known as cytokines. These cytokines play a vital role in cell signaling during immune responses, facilitating communication between immune cells and coordinating the activities necessary to mount an effective response against pathogens. When T cells recognize antigens presented by other cells, they become activated and produce cytokines that can influence the behavior of other immune cells, such as B cells and macrophages, enhancing their ability to respond to infections. This is essential for regulating the immune response, promoting inflammation, and mediating various immune functions, including cell proliferation and differentiation. While antibodies, enzymes, and growth factors are also important in various biological processes and immune responses, cytokines are the primary proteins secreted by T cells to carry out their functions in the immune system. Thus, the correct answer underscores the specialized role of T cells in immune modulation through cytokine secretion.

8. What is the likely cause of a 2°C temperature rise during a blood transfusion with no abnormal findings?

A. Acute hemolytic reaction

B. Febrile non-hemolytic reaction

C. Allergic reaction

D. Transfusion-associated lung injury

A 2°C temperature rise during a blood transfusion, especially when there are no other abnormal findings, is most indicative of a febrile non-hemolytic reaction. This type of reaction is quite common and typically occurs due to the recipient's immune response to the white blood cells or platelets in the transfused blood product. The rise in temperature is caused by the release of pyrogens, which can occur when the transfusion contains residual immune components. Unlike acute hemolytic reactions, which are often associated with hemolysis of red blood cells and can cause additional symptoms like chills and back pain, febrile non-hemolytic reactions are generally mild and do not present with hemolysis. In this case, the absence of other abnormal findings like hives or respiratory distress makes it less likely that an allergic reaction or transfusion-associated lung injury is the cause. While allergic reactions can manifest with fever, they usually also present with urticaria or itching, which have not been mentioned here. Therefore, the temperature rise without further complications aligns well with the characteristics of a febrile non-hemolytic reaction, making it the correct answer.

9. Which marker is commonly used to monitor the treatment of ovarian cancer?

- A. PSA
- B. CA-125**
- C. CEA
- D. AFP

The marker commonly used to monitor the treatment of ovarian cancer is CA-125. CA-125, or cancer antigen 125, is a protein that is often elevated in the blood of individuals with ovarian cancer. It serves as a tumor marker that can help in both the diagnosis and the monitoring of treatment efficacy. CA-125 levels are measured to assess the progression or regression of the disease, especially during and after treatment. When therapy is effective, a decrease in CA-125 levels may be observed, indicating a positive response to treatment or remission. Conversely, rising CA-125 levels can suggest disease progression or recurrence, making it a vital tool for oncologists in managing ovarian cancer. The other markers mentioned, while significant in their own right, are not primarily used for ovarian cancer. PSA (prostate-specific antigen) is primarily associated with prostate cancer, CEA (carcinoembryonic antigen) is often elevated in colorectal and other cancers but is not specific to ovarian cancer, and AFP (alpha-fetoprotein) is typically associated with germ cell tumors and liver cancers. Thus, their roles as markers for ovarian cancer treatment monitoring do not align with the specific use of CA-125.

10. What is the formula to calculate the reticulocyte production index?

- A. Corrected reticulocyte percentage / number of nucleated RBC
- B. Corrected reticulocyte percentage x maturation correction
- C. Corrected reticulocyte percentage + maturation correction
- D. Corrected reticulocyte percentage / maturation correction**

The reticulocyte production index (RPI) is an important calculation used to assess bone marrow response in situations such as anemia. It accounts for the level of reticulocytes, which are immature red blood cells, in circulation, and adjusts this value based on the degree of anemia by including a maturation correction factor. The formula for calculating the RPI involves taking the corrected reticulocyte percentage (which is based on the patient's hematocrit) and dividing it by the maturation correction factor. This factor is used to correct for the fact that reticulocytes take about 1-2 days to mature into fully functional red blood cells. If the patient has anemia, the number of days the reticulocytes need to mature is longer, hence the need for correction. Using the correct formula allows for a better assessment of whether the bone marrow is producing enough new red blood cells in response to anemia. A high RPI indicates a good bone marrow response, while a low RPI may indicate inadequate bone marrow response. This understanding clarifies the necessity for dividing the corrected reticulocyte percentage by the maturation correction factor, thereby establishing why this configuration accurately represents how to calculate the reticulocyte production index.

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://aabmtgeneralist.examzify.com>

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

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