AAB MEDICAL TECHNOLOGIST (MT) – HEMATOLOGY PRACTICE EXAM (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.

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

1. Which of the following is NOT an indication of anemia?

A. Decreased RBC

B. Decreased HGB

C. Decreased HCT

D. Decreased PLT

2. Which leukemia can be identified by a positive periodic acid-Schiff stain?

A. Acute myelogenous leukemia

B. Chronic lymphocytic leukemia

C. Acute lymphocytic leukemia

D. Acute myelomonocytic leukemia

3. Which of the following cells is typically seen with increased alkaline phosphatase activity in CML?

A. Neutrophils

B. Monocytes

C. Agranulocytes

D. Thrombocytes

4. Which activated coagulation factor is NOT classified as a serine protease?

A. X

B. VIII

C. IX

D. VII

5. A prolonged bleeding time with a normal platelet count indicates all of the following EXCEPT which one?

A. von Willebrand's disease

B. Glanzmann's disease

C. aspirin ingestion

D. Bernard-Soulier syndrome

6. The end result of most coagulation tests is the production of which structure?

A. Fibrinogen

B. Fibrin clot

C. Platelets

D. Thrombin

7. In a patient with prolonged PTT, what can indicate the presence of a circulating anticoagulant?

A. Corrected PTT incubated results

B. Increased platelet count

C. Normal PT ratio

D. Normal plasma addition

8. Which of the following can cause a falsely decreased platelet count?

A. Schistocytes

B. Normal platelet morphology

C. Giant platelets

D. Platelet clumps

9. Which reagent is used as the fixative in Wright's stain?

A. Methanol

B. Ethanol

C. Formalin

D. Acetic acid

10. Where should one read the percentage of packed red blood cell column from a microhematocrit reading device?

A. At the top of the plasma

B. At the midpoint of the buffy coat

C. Below the buffy coat

D. At the top of the red blood cell layer

Answers

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

Explanations

1. Which of the following is NOT an indication of anemia?

A. Decreased RBC

B. Decreased HGB

C. Decreased HCT

D. Decreased PLT

The correct response identifies that decreased platelet (PLT) count is not an indication of anemia. Anemia is primarily characterized by a decrease in the number or function of red blood cells (RBC), hemoglobin (HGB), and hematocrit (HCT), all of which reflect the oxygen-carrying capacity of the blood. When the RBC count decreases, it indicates fewer cells available to transport oxygen, leading to the symptoms associated with anemia. A decrease in hemoglobin means less hemoglobin available for binding oxygen, contributing to fatigue and weakness often experienced by individuals with anemia. Similarly, hematocrit measures the proportion of blood volume occupied by red blood cells; a decreased value also indicates anemia because it shows insufficient RBC concentration in the blood. In contrast, a decrease in platelet count is linked to issues related to blood clotting and hemostasis rather than oxygen transport. While low platelet levels can indicate bleeding disorders or other hematological conditions, they do not signify anemia. Thus, recognizing platelet count changes as separate from anemia allows for a clearer understanding of the various blood disorders and their implications on patient care.

2. Which leukemia can be identified by a positive periodic acid-Schiff stain?

A. Acute myelogenous leukemia

B. Chronic lymphocytic leukemia

C. Acute lymphocytic leukemia

D. Acute myelomonocytic leukemia

Acute lymphocytic leukemia (ALL) can be identified by a positive periodic acid-Schiff (PAS) stain due to the presence of lymphoblasts that have abundant glycogen. The PAS stain highlights polysaccharides, including glycogen, which is especially prevalent in the cells associated with ALL. This staining property aids in the differentiation of leukemias since other types do not exhibit the same level of glycogen deposits. In the context of acute lymphocytic leukemia, the positive PAS staining serves as a valuable diagnostic tool, allowing medical technologists to confirm the presence of lymphoblastic cells. This is particularly important in confirming the diagnosis of ALL, as its recognition can guide treatment options. The staining pattern is a characteristic feature utilized in the laboratory to differentiate ALL from other types of leukemia, making it crucial for accurate diagnosis and subsequent management.

3. Which of the following cells is typically seen with increased alkaline phosphatase activity in CML?

A. Neutrophils

B. Monocytes

C. Agranulocytes

D. Thrombocytes

In Chronic Myeloid Leukemia (CML), an increase in alkaline phosphatase activity is typically associated with neutrophils. This is due to the fact that CML is characterized by an increase in myeloid cells, particularly granulocytes, as the disease progresses. Neutrophils, being predominant in this condition, display heightened enzyme activity, including alkaline phosphatase, which is often utilized as a marker of neutrophilic activation and differentiation. The increase in alkaline phosphatase can be linked to the maturation of neutrophils that occurs as the disease advances, reflecting their functional activity. Elevated alkaline phosphatase levels are not a characteristic finding in monocytes, agranulocytes, or thrombocytes in the context of CML, making neutrophils the appropriate choice in this case. Thus, when evaluating patients with CML, the presence of neutrophils with increased alkaline phosphatase activity can serve as an important diagnostic feature, helping to confirm the diagnosis and understand the state of the disease.

4. Which activated coagulation factor is NOT classified as a serine protease?

A. X

B. VIII

C. IX

D. VII

Factor VIII is the factor among the options that is not classified as a serine protease. Serine proteases are enzymes that have a serine residue in their active site and are involved in the proteolytic cleavage of other proteins, which is a key function in the coagulation cascade. Factor VIII, on the other hand, functions primarily as a cofactor in the activation of Factor X but does not possess proteolytic activity itself. It assists and stabilizes other coagulation factors rather than cleaving them. Coagulation Factors X, IX, and VII, however, are all classified as serine proteases, as they directly cleave and activate other proteins within the coagulation pathway. Understanding this classification is important in hematology since it highlights the different roles that various factors play in coagulation, with some directly participating in the enzyme activities while others serve supportive or regulatory roles.

5. A prolonged bleeding time with a normal platelet count indicates all of the following EXCEPT which one?

A. von Willebrand's disease

B. Glanzmann's disease

C. aspirin ingestion

D. Bernard-Soulier syndrome

A prolonged bleeding time with a normal platelet count can point to various conditions related to platelet function or vascular integrity. In this case, the exception is Bernard-Soulier syndrome. Bernard-Soulier syndrome is characterized by a defect in platelet aggregation due to a deficiency in glycoprotein Ib-V-IX complex, which is essential for platelet adhesion. This defect often leads to thrombocytopenia, meaning that individuals typically present with a low platelet count, which would not align with the scenario described in the question where the platelet count is normal. On the other hand, conditions like von Willebrand's disease and Glanzmann's disease often present with normal platelet counts but can lead to prolonged bleeding times. Von Willebrand's disease affects platelet function due to a deficiency in von Willebrand factor which aids in platelet adhesion, while Glanzmann's disease results from a lack of glycoprotein IIb/IIIa, affecting platelet aggregation, both causing prolonged bleeding time despite having a normal platelet count. Aspirin ingestion impairs platelet function by inhibiting cyclooxygenase, which also results in prolonged bleeding time without affecting the platelet count. Thus, the key differentiator for the question is that Bernard-Soulier syndrome typically involves a

6. The end result of most coagulation tests is the production of which structure?

A. Fibrinogen

B. Fibrin clot

C. Platelets

D. Thrombin

The end result of most coagulation tests is the production of a fibrin clot. In the coagulation cascade, various factors interact to ultimately lead to the conversion of fibrinogen, a soluble plasma protein, into fibrin, which is an insoluble protein. This transformation is essential for the formation of a stable fibrin clot. The formation of a fibrin clot serves as a pivotal mechanism in hemostasis, helping to seal wounds and prevent excessive bleeding. Fibrin itself is not the primary focus of coagulation tests; instead, the tests typically measure the function of the coagulation pathways and their effectiveness in producing the final clot. While components like platelets and thrombin play vital roles in the coagulation process, the crucial endpoint that signifies successful coagulation is the formation of this fibrin clot. This is why the correct answer is associated with the definitive outcome of coagulation tests.

7. In a patient with prolonged PTT, what can indicate the presence of a circulating anticoagulant?

A. Corrected PTT incubated results

B. Increased platelet count

C. Normal PT ratio

D. Normal plasma addition

In the scenario of a patient with a prolonged Partial Thromboplastin Time (PTT), the presence of a circulating anticoagulant can be suggested by the behavior of the PTT in a corrected PTT test conducted under specific conditions. When the PTT is prolonged due to the presence of an inhibitor such as a circulating anticoagulant, incubating a sample of the patient's plasma with normal plasma may not result in correction of the PTT. In contrast, if the PTT is corrected upon incubation, it indicates that the prolonged time was due to a factor deficiency, rather than an inhibitor. Therefore, observing a failure to correct the PTT upon incubation is a strong indicator that a circulating anticoagulant is present. The other options do not directly relate to identifying the presence of a circulating anticoagulant in this context. For instance, increased platelet count does not influence PTT; rather, it pertains to platelet function and coagulopathy. The normal PT ratio indicates that the extrinsic pathway is functioning properly and does not provide information about intrinsic pathway abnormalities. Normal plasma addition refers to replacing the patient's plasma with normal plasma to observe adjustments in coagulation levels, but without the specific context of incubation, it doesn't clearly demonstrate the presence of an

8. Which of the following can cause a falsely decreased platelet count?

A. Schistocytes

B. Normal platelet morphology

C. Giant platelets

D. Platelet clumps

Platelet clumps lead to a falsely decreased automated platelet count because the analyzer counts discrete particles, and clumped platelets are usually counted as fewer events (or as one) than many individual platelets, so the reported count drops even though the circulating platelets are adequate. This is a classic EDTA-related pseudothrombocytopenia phenomenon—the smear may show platelet aggregates while the patient's true platelet number is normal. To address this, redraw in a different anticoagulant (like citrate) or verify with a manual smear examination to confirm actual platelet number. The other options don't typically cause a spuriously low count: schistocytes reflect red cell fragmentation, normal platelet morphology wouldn't reduce the count, and giant platelets can sometimes affect counts depending on the analyzer but aren't the common source of a false decrease like clumping is.

9. Which reagent is used as the fixative in Wright's stain?

A. Methanol

B. Ethanol

C. Formalin

D. Acetic acid

Wright's stain is a widely used staining technique in hematology for the examination of blood smears and bone marrow. The reagent that serves as the fixative in this process is methanol. Methanol is effective because it preserves the cellular morphology and allows for the staining of cells without significantly altering their structure. Fixation with methanol prevents the degradation of cellular components and facilitates the adherence of the cells to the glass slide, which is critical for obtaining accurate staining and visualization under the microscope. While ethanol, formalin, and acetic acid are also common fixatives in histology and cytology, they serve different purposes or have varying effects on cellular structures. Ethanol can cause dehydration and ultimately is not typically used for the fixation in Wright's stain. Formalin, while a very effective fixative for many tissues, introduces cross-linking that can obscure cellular details. Acetic acid tends to lyse red blood cells, which would not be desirable when preparing blood smears for examination. Therefore, methanol is specifically chosen for its suitability in preserving blood cell morphology while allowing for the optimal application of Wright's stain.

10. Where should one read the percentage of packed red blood cell column from a microhematocrit reading device?

A. At the top of the plasma

B. At the midpoint of the buffy coat

C. Below the buffy coat

D. At the top of the red blood cell layer

In a microhematocrit reading, the percentage of packed red blood cells (RBCs) is determined by measuring the height of the red blood cell layer in relation to the total height of the blood column after centrifugation. The correct approach is to read the percentage at the top of the red blood cell layer, as this accurately reflects the packed cell volume. When using a microhematocrit tube, after centrifugation, the components separate into three distinct layers: plasma at the top, a thin layer of white blood cells and platelets (the buffy coat) in the middle, and then the red blood cells at the bottom. The height of the packed red blood cells is crucial for determining the hematocrit value. This is typically indicated just above the boundary line where the red blood cells meet the buffy coat, providing a clear separation to ensure accurate measurement. Reading from the correct point not only yields a precise hematocrit value but also helps when comparing results across different samples or testing conditions. Thus, measuring at the top of the red blood cell layer is essential for obtaining accurate and reliable hematocrit values in clinical settings.

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://aabmthematology.examzify.com

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