HARR HEMATOLOGY PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://harrhematology.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.

SAMPLE

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!

SAMPLE

Questions

SAMPLE

1. **The morphological classification of anemias primarily relies on which parameter?**

   A. M:E (myeloid:erythroid) ratio

   B. Prussian blue stain

   C. RBC indices

   D. Reticulocyte count

2. **Autoagglutination of red cells at room temperature can cause which of the following abnormal test results?**

   A. Low RBC count

   B. High MCV

   C. Low hematocrit

   D. All of these options

3. **What is the nature of paroxysmal nocturnal hemoglobinuria (PNH)?**

   A. It is a rare acquired stem cell disorder

   B. It is inherited as a sex-linked trait

   C. It is inherited as an autosomal dominant trait

   D. It is inherited as an autosomal recessive trait

4. **An M:E ratio of 10:1 is most commonly associated with which condition?**

   A. Thalassemia

   B. Leukemia

   C. Polycythemia vera

   D. Myelofibrosis

5. **What is indicated by an elevated LAP score in a patient?**

   A. Chronic myelogenous leukemia

   B. Leukemoid reaction

   C. Polycythemia vera

   D. Acute leukemia

SAMPLE

6. What results would be expected in a prothrombin time (PT) and activated partial thromboplastin time (APTT) test for a patient with polycythemia?

A. Both prolonged

B. Both shortened

C. Normal PT, prolonged APTT

D. Both normal

7. What tool is used to count white blood cells manually?

A. Hemacytometer

B. Microscope

C. Spectrophotometer

D. Hemoglobinometer

8. What causes erythrocytosis seen in relative polycythemia?

A. Decreased arterial oxygen saturation

B. Decreased plasma volume of circulating blood

C. Increased erythropoietin levels

D. Increased erythropoiesis in the bone marrow

9. What impact does using a buffer at pH 6.0 have on a Wright's-stained smear?

A. Red cells would be stained too pink

B. White cell cytoplasm would be stained too blue

C. Red cells would be stained too blue

D. Red cells would lyse on the slide

10. Which electrophoretic pattern is indicative of sickle cell trait?

A. Hgb A: 40% Hgb S: 35% Hgb F: 5%

B. Hgb A: 60% Hgb S: 40% Hgb A2: 2%

C. Hgb A: 0% Hgb A2: 5% Hgb F: 95%

D. Hgb A: 80% Hgb S: 10% Hgb A2: 10%

SAMPLE

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. The morphological classification of anemias primarily relies on which parameter?

A. M:E (myeloid:erythroid) ratio

B. Prussian blue stain

C. RBC indices

D. Reticulocyte count

The morphological classification of anemias primarily relies on red blood cell (RBC) indices. These indices, which include parameters such as mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), and mean corpuscular hemoglobin concentration (MCHC), provide crucial information about the size, volume, and hemoglobin content of red blood cells. By analyzing these indices, clinicians can differentiate between various types of anemia, such as microcytic, normocytic, and macrocytic anemia, facilitating an accurate diagnosis and appropriate treatment plan. For example, a low MCV might indicate microcytic anemia, which is often associated with iron deficiency or thalassemias, while a high MCV could suggest macrocytic anemia, commonly seen in vitamin B12 or folate deficiency. Therefore, within the context of morphological classification, RBC indices serve as the fundamental parameters that guide clinicians in identifying the underlying causes and types of anemias.

2. Autoagglutination of red cells at room temperature can cause which of the following abnormal test results?

A. Low RBC count

B. High MCV

C. Low hematocrit

D. All of these options

Autoagglutination of red blood cells occurs when antibodies in the blood cause red blood cells to clump together. This can significantly impact various hematological tests. When red blood cells aggregate, they can give the appearance of a lower count when using automatic cell counters. This is because the analyzer may not accurately count the clumped cells as separate entities, leading to a low red blood cell count. In terms of mean corpuscular volume (MCV), autoagglutination can affect the measurement as well. When red blood cells are agglutinated, they may not be suspended individually in the solution, which can cause the analyzer to misinterpret the volume of the individual cells. The result can lead to a falsely elevated MCV due to the difficulty in accurately measuring the size of the agglutinated cells. Similarly, hematocrit, which measures the proportion of blood volume that is occupied by red blood cells, can also be falsely low because the agglutination may affect the settling of red cells in a centrifuge, thus providing a skewed representation of the actual red cell volume. Since autoagglutination can lead to distortions in both RBC count, MCV, and hematocrit, it is

SAMPLE

3. What is the nature of paroxysmal nocturnal hemoglobinuria (PNH)?

A. It is a rare acquired stem cell disorder

B. It is inherited as a sex-linked trait

C. It is inherited as an autosomal dominant trait

D. It is inherited as an autosomal recessive trait

Paroxysmal nocturnal hemoglobinuria (PNH) is characterized as a rare acquired stem cell disorder. This condition arises due to a mutation in the PIGA gene within hematopoietic stem cells, which leads to the inability of blood cells to express certain proteins that protect them from being destroyed by the immune system. Because it is an acquired disorder, it is not passed from parent to offspring through genetic inheritance like some other hematological conditions. The fact that PNH occurs due to a mutation acquired later in life, instead of being inherited through genetic lines, underscores its classification as an acquired disorder. This mutation causes a unique set of symptoms, including intermittent hemolysis (destruction of red blood cells), and can lead to complications such as thrombosis and bone marrow failure. The nuances seen in patients with PNH, such as the episodic nature of hemolysis often emphasized during the night, are further indicative of its acquired status rather than an inherited one. The other classifications involving sex-linked, autosomal dominant, or autosomal recessive inheritance patterns imply a genetic transmission from parents to offspring, which does not apply to PNH. Instead, its development is linked to somatic mutations that occur during an individual's lifetime.

4. An M:E ratio of 10:1 is most commonly associated with which condition?

A. Thalassemia

B. Leukemia

C. Polycythemia vera

D. Myelofibrosis

An M:E ratio of 10:1 signifies a significant increase in the number of myeloid cells relative to erythroid cells in the bone marrow. This finding is particularly characteristic of conditions where there is robust myeloid proliferation, such as in certain types of leukemia, especially myeloid leukemias. In leukemia, the excessive production of myeloid lineage cells leads to a markedly elevated M:E ratio, reflecting the underlying pathology of uncontrolled proliferation in the bone marrow. In contrast, other conditions mentioned show different hematopoietic patterns. For instance, thalassemia typically does not present with such a high M:E ratio as it often reflects a compensatory increase in erythroid production due to ineffective erythropoiesis, leading to a more balanced or even shifted ratio towards erythroid cells. Polycythemia vera is characterized by increased red blood cell mass, but the M:E ratio may not be as elevated as in leukemia. Myelofibrosis can show varying ratios depending on the stage of the disease, but it's often associated with a decrease in overall cell production, which would not lead to a high M:E ratio similar to what is seen in acute or chronic leukemia. Thus, the association of a 10:

SAMPLE

5. What is indicated by an elevated LAP score in a patient?

A. Chronic myelogenous leukemia

B. Leukemoid reaction

C. Polycythemia vera

D. Acute leukemia

An elevated leukocyte alkaline phosphatase (LAP) score is indicative of a reactive process, particularly in cases of a leukemoid reaction. This reaction is characterized by a significant increase in white blood cell count, typically in response to an infection, inflammation, or other stressors in the body. In this context, the LAP score rises because alkaline phosphatase is an enzyme associated with mature neutrophils, which are elevated during such reactions. Leukemoid reactions can present similarly to leukemias but generally reflect a physiological response rather than a malignancy. Patients commonly have a high count of mature neutrophils, and the elevated LAP score serves as a marker of the functional activity of these neutrophils, confirming that the increase is a response to stress rather than a neoplastic process. In contrast, conditions such as chronic myelogenous leukemia typically lead to a low LAP score due to the presence of immature cells like myeloblasts that lack high alkaline phosphatase activity. Other conditions, like polycythemia vera and acute leukemia, also do not correlate with an elevated LAP score. Hence, the elevated LAP score specifically aligns with leukemoid reactions, distinguishing it from other hematological disorders.

6. What results would be expected in a prothrombin time (PT) and activated partial thromboplastin time (APTT) test for a patient with polycythemia?

A. Both prolonged

B. Both shortened

C. Normal PT, prolonged APTT

D. Both normal

For a patient with polycythemia, the expected results for prothrombin time (PT) and activated partial thromboplastin time (APTT) tests would be considered in the context of the disease's impact on blood properties. Polycythemia leads to an increase in blood viscosity due to the higher number of red blood cells, which can influence coagulation factors and overall hemostatic balance. In this scenario, prolonged PT and APTT can occur because the increased viscosity can affect the flow of blood and may result in a disturbance in the normal function of clotting factors. This can potentially lead to slower clot formation and a longer time for the coagulation process to occur. The activation of the coagulation cascade involves various factors that may become less efficiently activated due to the altered dynamics of the blood in polycythemia. Thus, while both tests may show prolonged results, it is essential to understand that the increased blood viscosity is a significant factor influencing these clotting times. Normal PT and normal APTT would suggest that the coagulation pathways function effectively despite the increased cell counts, which does not align with the expected findings in polycythemia. Hence, prolonged times are more likely in this condition.

SAMPLE

7. What tool is used to count white blood cells manually?

A. Hemacytometer

B. Microscope

C. Spectrophotometer

D. Hemoglobinometer

The hemacytometer is specifically designed for counting cells, including white blood cells, manually. It consists of a specialized glass slide with a grid pattern etched into it, which allows for accurate cell counting under a microscope. Technicians use it by placing a small volume of diluted blood into the hemacytometer, which helps count the number of white blood cells in a specified volume, providing valuable information about a patient's immune status and overall health. The microscope plays an essential role in visualizing the cells counted with the hemacytometer but is not a counting tool itself. A spectrophotometer is used for measuring light absorbance or transmittance in a solution, which does not apply to cell counting. Lastly, a hemoglobinometer is designed specifically for measuring hemoglobin concentration in blood, which is unrelated to white blood cell counting. Each of these tools has its unique purpose, but for the manual counting of white blood cells, the hemacytometer is the correct choice.

8. What causes erythrocytosis seen in relative polycythemia?

A. Decreased arterial oxygen saturation

B. Decreased plasma volume of circulating blood

C. Increased erythropoietin levels

D. Increased erythropoiesis in the bone marrow

Relative polycythemia is characterized by an increase in the concentration of red blood cells (RBCs) without a corresponding increase in total red blood cell mass. This condition often arises due to a decrease in plasma volume, which can occur in situations such as dehydration or conditions causing fluid loss. When plasma volume decreases, the proportion of red blood cells in the blood relative to plasma increases, leading to an appearance of erythrocytosis. In contrast, decreased arterial oxygen saturation, increased erythropoietin levels, and increased erythropoiesis in the bone marrow are associated with primary or secondary causes of absolute polycythemia, where there is an actual increase in red blood cell mass due to stimulation of erythropoiesis. In relative polycythemia, the key factor is the reduction in plasma volume rather than an increase in red blood cell production or oxygen levels. Thus, the mechanism behind the observed erythrocytosis in relative polycythemia specifically highlights the importance of plasma volume changes.

9. What impact does using a buffer at pH 6.0 have on a Wright's-stained smear?

A. Red cells would be stained too pink

B. White cell cytoplasm would be stained too blue

C. Red cells would be stained too blue

D. Red cells would lyse on the slide

Using a buffer at pH 6.0 during a Wright's-stained smear can result in red blood cells being stained too pink. This is due to the acid-base balance affecting the staining properties of the sample. In a Wright's stain, the staining process involves a combination of both eosin and methylene blue dyes, which interact with the components of the cells based on their pH levels. At a lower pH, such as 6.0, eosin (which provides the pink color for red cells) becomes more prominent in its staining action. This leads to an enhanced uptake of the eosin dye by the red blood cells, giving them a more intense pink or reddish appearance than what would typically be observed at the optimal pH, which is around 6.4 to 6.8. Maintaining the appropriate pH is crucial for accurate cell morphology assessment and diagnostic purposes, as it can influence the visual characteristics of both red and white blood cells in a smear.

SAMPLE

10. Which electrophoretic pattern is indicative of sickle cell trait?

A. Hgb A: 40% Hgb S: 35% Hgb F: 5%

B. Hgb A: 60% Hgb S: 40% Hgb A2: 2%

C. Hgb A: 0% Hgb A2: 5% Hgb F: 95%

D. Hgb A: 80% Hgb S: 10% Hgb A2: 10%

In sickle cell trait, the hemoglobin electrophoresis pattern typically shows a substantial presence of both hemoglobin A and hemoglobin S. The correct pattern indicates that individuals with sickle cell trait carry one normal allele and one mutated allele, leading to approximately 60% hemoglobin A and about 40% hemoglobin S in their profile. This specific distribution reflects the genetic composition of someone with the sickle cell trait, where hemoglobin S does not dominate but is still significant enough to be detected, resulting in an approximate ratio of hemoglobin types as observed. The presence of hemoglobin A2 is minor in comparison and does not significantly deviate in representation, hence it makes sense that in the correct answer, hemoglobin A2 is present in small amounts. Other options show different proportions that do not align with the expected pattern for sickle cell trait, such as having either a predominant percentage of hemoglobin S or an absence of hemoglobin A, which would typically characterize other conditions such as sickle cell disease or thalassemia.

SAMPLE

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://harrhematology.examzify.com

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

SAMPLE