

ASCP TECHNOLOGIST IN IMMUNOLOGY (I) PRACTICE EXAM (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

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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

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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. What is a common serological test for syphilis besides FTA-ABS?**
 - A. HBV testing
 - B. TPHA
 - C. HCV testing
 - D. HIV testing

- 2. What results best correlate with a positive anti-nuclear antibody test showing a titer of 1:320 with a peripheral pattern?**
 - A. Anti-dsDNA titer 1:40 and antibodies to Sm
 - B. Anti-dsDNA titer 1:80 and a high titer of antibodies to Sm
 - C. Anti-dsDNA titer 1:160 and low titers of antibodies to Sm
 - D. Anti-dsDNA titer 1:320 with no other antibodies

- 3. What term describes normal serum constituents that increase rapidly during infection?**
 - A. Acute phase reactants
 - B. Chronic phase reactants
 - C. Inflammatory markers
 - D. Serum antibodies

- 4. Which class of antibodies is primarily involved in allergic reactions?**
 - A. IgG
 - B. IgA
 - C. IgM
 - D. IgE

- 5. What determines if serological test results are diagnostic when drawn from a patient for a viral disease?**
 - A. The first antibody titer
 - B. The second antibody titer is at least 4x the first
 - C. If there is a visible reaction
 - D. The presence of IgM antibodies

6. What activity is primarily associated with the C3B component in the complement system?
- A. Viral neutralization
 - B. Opsonization
 - C. Membrane lysis
 - D. Inflammation promotion
7. Which of the following is NOT a consideration in ELISA testing?
- A. Inhibition versus enhancement
 - B. Radioactive versus colorimetric
 - C. Assay duration
 - D. Temperature control
8. What components make up the membrane attack complex of complement activation?
- A. C3, C4, C5, C6
 - B. C5, C6, C7, C8, C9
 - C. C1, C2, C3, C4
 - D. C5, C6, C8, C9
9. In a quantitative B lymphocyte assay, what is the expected percentage of B lymphocytes among total lymphocytes?
- A. 10%
 - B. 20%
 - C. 30%
 - D. 50%
10. What is the expected total number of T cells based on a WBC count of $10.0 \times 10^3/\mu\text{L}$ and 40% T cells?
- A. 2000 cells
 - B. 1000 cells
 - C. 2500 cells
 - D. 1500 cells

Answers

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

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Explanations

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1. What is a common serological test for syphilis besides FTA-ABS?

- A. HBV testing
- B. TPHA**
- C. HCV testing
- D. HIV testing

The correct response, TPHA (Treponema pallidum hemagglutination assay), is indeed a common serological test used for diagnosing syphilis. This test detects antibodies against Treponema pallidum, the bacterium that causes syphilis, in a patient's serum. It is particularly valued because it is highly sensitive and can remain positive long after treatment, making it useful for screening as well as confirmation of syphilis infection. In addition to the FTA-ABS (Fluorescent Treponemal Antibody Absorption) test, the TPHA helps provide a comprehensive understanding of a patient's serological status regarding syphilis. Both tests are part of the non-treponemal and treponemal testing methods for syphilis, reflecting the desired confirmatory testing approach used in clinical practice. The other strategies indicated, such as HBV testing, HCV testing, and HIV testing, are relevant for different infections, but they are not used specifically for the detection of syphilis. Each of these tests addresses specific viral infections rather than the bacterial infection associated with syphilis, which is why they do not serve as alternatives to TPHA in diagnosing syphilis.

2. What results best correlate with a positive anti-nuclear antibody test showing a titer of 1:320 with a peripheral pattern?

- A. Anti-dsDNA titer 1:40 and antibodies to Sm
- B. Anti-dsDNA titer 1:80 and a high titer of antibodies to Sm**
- C. Anti-dsDNA titer 1:160 and low titers of antibodies to Sm
- D. Anti-dsDNA titer 1:320 with no other antibodies

The most appropriate answer to correlate with a positive anti-nuclear antibody (ANA) test showing a titer of 1:320 with a peripheral pattern is the one indicating an anti-dsDNA titer of 1:80 and a high titer of antibodies to Sm. A titer of 1:320 for ANA, particularly with a peripheral pattern, suggests a strong likelihood of systemic lupus erythematosus (SLE), a condition frequently associated with antibodies related to nuclear material. Among these, anti-double stranded DNA (anti-dsDNA) and anti-Smith (Sm) antibodies are highly specific for SLE. A high titer of antibodies to Sm, in conjunction with anti-dsDNA, enhances the association with SLE, as these specific antibodies are commonly found in patients with this disease. The presence of anti-dsDNA at a titer of 1:80 indicates the possible severity of the condition, as higher titers of these antibodies tend to correlate with disease activity. Alongside a high titer of anti-Sm antibodies, this combination strengthens the association with SLE, which is consistent with the characteristics of a positive ANA with a significant titer. Other options are less representative of strong correlations with the

3. What term describes normal serum constituents that increase rapidly during infection?

- A. Acute phase reactants**
- B. Chronic phase reactants
- C. Inflammatory markers
- D. Serum antibodies

The term that accurately describes normal serum constituents that increase rapidly during infection is acute phase reactants. These are proteins whose levels in the blood rise or fall in response to inflammation, infection, or tissue injury. Common examples include C-reactive protein (CRP) and fibrinogen, which serve as important indicators of inflammation and are used clinically to assess the presence and intensity of an inflammatory response. Acute phase reactants are produced primarily by the liver and have various roles in the immune response. They can enhance the clearance of pathogens, modulate the inflammatory response, and support tissue repair processes during and after an infection. Because their concentration can change rapidly within hours to days following the onset of an infection or injury, they provide valuable information for diagnosing and monitoring infectious and inflammatory diseases. Other options, such as chronic phase reactants, inflammatory markers, and serum antibodies, do not specifically refer to this acute response seen during infections. Chronic phase reactants typically pertain to markers or proteins elevated over a longer duration and are associated with chronic inflammatory states rather than acute responses. Inflammatory markers is a broader term that can encompass a wide range of indicators including both acute and chronic reactions. Serum antibodies represent the immune response but are not classified as acute phase reactants

4. Which class of antibodies is primarily involved in allergic reactions?

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

The correct answer is IgE, as this class of antibodies plays a crucial role in the body's immune response to allergens. IgE is primarily associated with allergic reactions and the defense against parasitic infections. When an allergen enters the body, it can trigger the production of IgE antibodies by B cells. These IgE antibodies then bind to allergens and activate mast cells and basophils, leading to the release of histamines and other inflammatory mediators. This process results in the symptoms commonly associated with allergies, such as itching, swelling, and bronchoconstriction, which are part of the immediate hypersensitivity reactions. IgE's specific association with allergies distinguishes it from the other antibody classes, which serve different roles in the immune system. For example, IgG primarily functions in fighting bacterial and viral infections, IgA is predominantly found in mucosal areas and bodily secretions, and IgM is typically the first antibody produced in response to an infection but is not directly involved in allergic reactions.

5. What determines if serological test results are diagnostic when drawn from a patient for a viral disease?

- A. The first antibody titer
- B. The second antibody titer is at least 4x the first**
- C. If there is a visible reaction
- D. The presence of IgM antibodies

For serological tests used to diagnose viral diseases, determining diagnostic results often relies on measuring changes in antibody titers over time. The second antibody titer being at least four times greater than the first indicates an increase in antibody levels, which is typically suggestive of a recent or active infection. This fourfold rise strongly supports the diagnosis because it reflects the patient's immune response to the viral antigen. In contrast, the first antibody titer alone may not provide sufficient information about the timing of infection or the immune response, as it can indicate past exposure but not necessarily current infection. Presence of a visible reaction can be helpful, but it does not quantify the immune response or confirm active disease. The presence of IgM antibodies is also an important marker for recent infections, but it is not the sole determinant; therefore, the fourfold increase in antibody titer is a more definitive hallmark of an ongoing immune response indicative of a current infection.

6. What activity is primarily associated with the C3B component in the complement system?

- A. Viral neutralization
- B. Opsonization**
- C. Membrane lysis
- D. Inflammation promotion

The C3B component of the complement system plays a crucial role in opsonization, which enhances the immune system's ability to identify and eliminate pathogens. Opsonization involves the tagging of pathogens, such as bacteria and viruses, with complement proteins, particularly C3B, which marks them for recognition and ingestion by phagocytes like macrophages and neutrophils. When C3B binds to the surface of a pathogen, it effectively labels it, facilitating its uptake by phagocytic cells that have receptors for C3B. This process significantly increases the efficiency of phagocytosis because it allows immune cells to recognize and target pathogens more effectively than they would in the absence of these tags. The other options refer to important functions of the complement system but do not directly emphasize the primary role of C3B. For instance, while C3B can contribute to inflammation and membrane lysis, these processes are more associated with different components of the complement cascade and its role in forming the membrane attack complex (MAC) or in promoting inflammatory responses through the release of anaphylatoxins like C3A. Therefore, the primary activity linked directly to C3B is its role in opsonization.

7. Which of the following is NOT a consideration in ELISA testing?

- A. Inhibition versus enhancement
- B. Radioactive versus colorimetric**
- C. Assay duration
- D. Temperature control

In the context of ELISA (Enzyme-Linked Immunosorbent Assay) testing, the focus is on various considerations that impact the effectiveness, reliability, and interpretation of the assay results. The answer indicating "radioactive versus colorimetric" is correct because ELISA primarily utilizes enzyme-linked antibodies that generate a colorimetric signal for detection, rather than radioactive isotopes. The use of enzymes to produce a measurable signal, typically a color change, is a hallmark of ELISA, while radioactive methods are not typically employed in this particular assay format. Therefore, the choice of detection methodology, such as colorimetric detection, is very relevant, while the concept of radioactive detection does not pertain to standard ELISA practices. The other options highlight important aspects of ELISA testing. Inhibition versus enhancement refers to observing how certain factors may interfere with or enhance the assay's signal, which can significantly affect result interpretation. Assay duration is critical because timing impacts the enzymatic reaction and accuracy of the measurement. Temperature control is also fundamental as it affects the stability of reagents and the enzymatic activity that is pivotal in generating measurable results. Each of these factors is crucial in ensuring that the ELISA test produces valid and reliable results, while radioactive

8. What components make up the membrane attack complex of complement activation?

- A. C3, C4, C5, C6
- B. C5, C6, C7, C8, C9**
- C. C1, C2, C3, C4
- D. C5, C6, C8, C9

The membrane attack complex (MAC) is a critical component of the immune response, specifically in the complement system, which helps to eliminate pathogens. The correct answer includes the proteins C5, C6, C7, C8, and C9. These components work together to form the MAC, which facilitates the lysis (destruction) of target cells, such as bacteria. The process begins when C5 is cleaved to generate C5b, which then associates with C6. This C5bC6 complex subsequently binds to C7, enabling the insertion of the complex into the target cell membrane. Once inserted, the complex recruits C8 and multiple C9 molecules to form a pore-like structure in the membrane of the target cell, ultimately leading to its lysis by creating an osmotic imbalance. By contrast, while C3, C4, and C5 appear in various stages of complement activation, they are not part of the membrane attack complex itself. C3 is critical in the initial complement activation pathways, and C4 plays a role in the classical pathway, but they do not contribute directly to the formation of the MAC. Some of the other options, while listing various components, either lack some essential proteins or mix components

9. In a quantitative B lymphocyte assay, what is the expected percentage of B lymphocytes among total lymphocytes?

- A. 10%
- B. 20%**
- C. 30%
- D. 50%

In a typical quantitative assessment of B lymphocytes among total lymphocytes, the expected percentage generally falls in the range of 10% to 20%. This is due to the fact that B cells usually comprise a smaller portion of the total lymphocyte population compared to T cells. While the exact percentage can vary depending on the individual and specific conditions, a value close to 20% is considered within the normal range for healthy adults. In this scenario, the choice of 20% accurately reflects the typical distribution seen in peripheral blood, reinforcing the understanding that while B lymphocytes are essential for humoral immunity and the production of antibodies, they do not dominate the lymphocyte population compared to T lymphocytes.

10. What is the expected total number of T cells based on a WBC count of $10.0 \times 10^3/\mu\text{L}$ and 40% T cells?

- A. 2000 cells
- B. 1000 cells
- C. 2500 cells**
- D. 1500 cells

To determine the expected total number of T cells from the provided white blood cell (WBC) count and percentage of T cells, you can use the following formula: Total T cells = (WBC count in cells/ μL) $\times$ (Percentage of T cells). In this case, the WBC count is $10.0 \times 10^3/\mu\text{L}$, which is equivalent to 10,000 cells/ μL , and the percentage of T cells is 40%, or 0.40 when expressed as a decimal. Now, calculating the total number of T cells: Total T cells = 10,000 cells/ μL $\times$ 0.40 = 4,000 cells. Given that the question asks for the expected number of T cells, it's possible there was a misinterpretation in the options provided, or a detail may need further clarification. However, if we were to be strictly focused on what the number would translate to in the context of the options given, we could reassess how one might arrive at a figure in the options listed. But fundamentally, the mathematical process highlights that using the WBC count and the percentage yields 4,000 cells, which is not reflected among the options.

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.

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

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