

STEVENS IMMUNOLOGY- SEROLOGY PRACTICE TEST (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

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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. All of the following describe HIV except**
 - A. It possesses an outer envelope.
 - B. It contains an inner core with P24 antigen.
 - C. It contains DNA as its nucleic acid.
 - D. It is a member of the retrovirus family.
- 2. Which of the following conclusions can be drawn about a patient whose total IgE level was determined to be 150 IU/mL?**
 - A. Antigen-specific testing should be done.
 - B. The patient will never have an allergic reaction.
 - C. The patient may be subject to anaphylactic shock.
 - D. The patient definitely has allergic tendencies.
- 3. Suppose a 30-year-old man was found to be a suitable donor for a kidney transplant to his younger sister. This transplant would be an example of a(an)**
 - A. autograft
 - B. allograft
 - C. isograft
 - D. xenograft
- 4. Which would be the best assay to measure a specific cytokine?**
 - A. Blast formation
 - B. T-cell proliferation
 - C. Measurement of leukocyte chemotaxis
 - D. ELISA testing
- 5. Which test is currently recommended by the CDC to confirm a positive screening test result for HIV infection?**
 - A. HIV viral culture
 - B. Molecular testing for HIV RNA
 - C. Western blot
 - D. Rapid test for HIV-1 and HIV-2 antibodies

- 6. When soluble antigens diffuse in a gel that contains antibody, in which zone does optimum precipitation occur?**
- A. Prozone
 - B. Zone of equivalence
 - C. Postzone
 - D. Prezone
- 7. Which type of assay uses a solid phase to capture an antigen with a subsequent labeled detector antibody?**
- A. Competitive binding assay
 - B. Sandwich (capture) enzyme assay
 - C. Direct binding assay
 - D. Chemiluminescent assay
- 8. Adoptive immunity is best illustrated by which scenario?**
- A. Vaccination with a killed pathogen
 - B. Administration of a vaccine to stimulate antibody production
 - C. Natural infection leading to antibody production
 - D. Transfer of immune cells from an immune donor to a recipient
- 9. Which two HIV envelope glycoproteins are commonly detected in HIV serology as markers?**
- A. Gp120 and Gp160
 - B. Gp41 and Gp120
 - C. Gp24 and Gp55
 - D. P24 and Gp120
- 10. Which factors can lead normal cells to become malignant?**
- A. Overexpression of oncogenes
 - B. Underexpression of tumor suppressor genes
 - C. Viral infection
 - D. All of the above

Answers

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

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Explanations

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1. All of the following describe HIV except

- A. It possesses an outer envelope.
- B. It contains an inner core with P24 antigen.
- C. It contains DNA as its nucleic acid.**
- D. It is a member of the retrovirus family.

HIV carries its genetic material as RNA, not DNA. It is an enveloped, single-stranded RNA virus in the retrovirus family. Its RNA genome is the genetic material packaged in the virion, and after it enters a host cell, the enzyme reverse transcriptase converts that RNA into a DNA copy that can integrate into the host genome. That integration step is part of its replication, but the venomous genome inside the viral particle remains RNA, so describing HIV's nucleic acid as DNA is incorrect. The virus does have an outer envelope, and its core contains the p24 capsid protein, which is a common diagnostic marker.

2. Which of the following conclusions can be drawn about a patient whose total IgE level was determined to be 150 IU/mL?

- A. Antigen-specific testing should be done.**
- B. The patient will never have an allergic reaction.
- C. The patient may be subject to anaphylactic shock.
- D. The patient definitely has allergic tendencies.

Total IgE is a nonspecific marker of atopy, not a diagnostic test for allergy. A single elevated level doesn't tell you which substances, if any, a patient is allergic to. The best next step is to perform antigen-specific testing (such as specific IgE tests or skin prick testing) to identify which allergens the patient may be sensitized to and to correlate these findings with the patient's clinical history. Therefore, antigen-specific testing should be done. The other conclusions aren't supported by a total IgE value alone: a raised total IgE does not guarantee allergic reactions, it does not by itself indicate a risk of anaphylaxis, and it does not prove that the patient has allergic tendencies—it simply raises the possibility and warrants targeted testing to confirm sensitizations.

3. Suppose a 30-year-old man was found to be a suitable donor for a kidney transplant to his younger sister. This transplant would be an example of a(an)

- A. autograft
- B. allograft**
- C. isograft
- D. xenograft

Transplant types are defined by the donor–recipient relationship and species. A kidney donated from one person to another of the same species but who is not genetically identical is an allograft. Here, the donor is a man and the recipient is his sister—two different individuals of the same species—so the graft fits the allograft category. An autograft would be tissue moved within the same person, an isograft would be between identical twins, and a xenograft would be from another species.

4. Which would be the best assay to measure a specific cytokine?

- A. Blast formation
- B. T-cell proliferation
- C. Measurement of leukocyte chemotaxis

D. ELISA testing

Direct quantification of a soluble cytokine in a sample requires an assay that specifically detects the molecule. ELISA uses antibodies that bind the target cytokine and produce a measurable signal proportional to its concentration, giving precise, quantitative results in fluids or culture supernatants. This specificity and sensitivity make it ideal for measuring a single cytokine. The other approaches assess cellular responses rather than the cytokine's actual amount: blast formation and T-cell proliferation look at how cells multiply in response to stimuli, not the cytokine's level; measuring leukocyte chemotaxis examines movement toward signals, which again reflects activity rather than exact concentration.

5. Which test is currently recommended by the CDC to confirm a positive screening test result for HIV infection?

- A. HIV viral culture
- B. Molecular testing for HIV RNA
- C. Western blot

D. Rapid test for HIV-1 and HIV-2 antibodies

After a positive HIV screening result, the test that best serves as confirmation is an assay that detects antibodies to both HIV-1 and HIV-2 and can distinguish between them. This aligns with the CDC's current testing algorithm, which uses an HIV-1/HIV-2 antibody differentiation immunoassay to confirm infection and identify the specific virus type. If this differentiation test is reactive for either HIV-1 or HIV-2, a diagnosis is established. If the differentiation test is nonreactive or indeterminate after a reactive screen, a nucleic acid test measuring HIV RNA is used to resolve possible acute infection or discordant results. Western blot, once used for confirmation, is no longer recommended due to its limitations and potential for indeterminate results. HIV RNA testing has its place in certain scenarios, but it is not the standard confirmatory test immediately after a reactive antibody screening result unless the differentiation step is inconclusive.

6. When soluble antigens diffuse in a gel that contains antibody, in which zone does optimum precipitation occur?

- A. Prozone
- B. Zone of equivalence
- C. Postzone
- D. Prezone

In this diffusion setup, precipitation is best when antigen and antibody meet in equivalent concentrations so that many binding sites can cross-link and form a continuous lattice. This balance, the zone of equivalence, allows enough cross-linking between multiple antigen and antibody molecules to create a visible precipitin network. If antibody is in excess (prozone), each antigen tends to be fully occupied by antibodies without linking to other antigens, preventing lattice formation. If antigen is in excess (postzone), there aren't enough antibodies to bridge multiple antigens, so precipitation also fails to form.

7. Which type of assay uses a solid phase to capture an antigen with a subsequent labeled detector antibody?

- A. Competitive binding assay
- B. Sandwich (capture) enzyme assay**
- C. Direct binding assay
- D. Chemiluminescent assay

A sandwich assay uses a solid-phase antibody to capture the antigen, then a second, labeled detector antibody binds to a different epitope on that same antigen, forming a "sandwich." The detector antibody carries a label (often an enzyme) that produces a measurable signal, allowing quantification of the antigen. This format requires two antibodies and high specificity, which is why it's ideal for accurately detecting and measuring antigens in samples—the antigen is captured on the solid surface and then revealed by the labeled detector antibody. The other approaches don't fit this setup. Competitive binding relies on antigen competing with a labeled component for a limited antibody, giving a signal inversely related to antigen amount and not a sandwich of two antibodies. Direct binding uses a single antibody to detect the antigen, with no second antibody forming a sandwich. Chemiluminescent describes the detection method (light produced), not the specific sandwich capture format.

8. Adoptive immunity is best illustrated by which scenario?

- A. Vaccination with a killed pathogen
- B. Administration of a vaccine to stimulate antibody production
- C. Natural infection leading to antibody production
- D. Transfer of immune cells from an immune donor to a recipient**

Adoptive immunity involves transferring immune cells from a donor to a recipient to provide immunity, rather than triggering the recipient to make their own response. This is exactly what happens in scenarios like bone marrow transplants or donor lymphocyte transfers, where T cells, B cells, or other immune cells from an immune donor repopulate or supplement the recipient's immune system. The recipient gains immunity because they receive ready-made immune effector cells, not because their own immune system was stimulated by an antigen. Vaccination or natural infection, by contrast, rely on the recipient's immune system to encounter an antigen and mount a response, which is a form of active immunity.

9. Which two HIV envelope glycoproteins are commonly detected in HIV serology as markers?

- A. Gp120 and Gp160
- B. Gp41 and Gp120**
- C. Gp24 and Gp55
- D. P24 and Gp120

HIV serology centers on detecting antibodies against the virus's envelope glycoproteins, the proteins that form the surface spikes the virus uses to enter cells. The two main envelope components are gp120, the surface glycoprotein that binds CD4 and co-receptors, and gp41, the transmembrane glycoprotein that completes the fusion process. Because the immune system routinely makes antibodies against these envelope proteins, serology assays are designed to detect anti-gp120 and anti-gp41 antibodies as markers of infection. The alternative gp160 is the precursor that is cleaved to gp120 and gp41, so it isn't typically counted as a separate envelope marker in standard serology. P24 is a capsid protein, not an envelope protein, and gp55 isn't a recognized envelope component. Therefore, the two envelope glycoproteins most commonly detected are gp120 and gp41.

10. Which factors can lead normal cells to become malignant?

- A. Overexpression of oncogenes
- B. Underexpression of tumor suppressor genes
- C. Viral infection
- D. All of the above

Normal cells become malignant when additional genetic changes remove growth restraints and push them toward unchecked proliferation. Overexpression or activation of oncogenes drives signals that promote cell growth and division. At the same time, loss or inactivation of tumor suppressor genes eliminates key brakes on the cell cycle and can enable accumulation of further mutations and resistance to cell death. Viral infections can contribute by introducing viral oncogenes or disrupting normal regulation of host genes, as seen with certain oncogenic viruses. Cancer typically requires multiple cooperating events, so any one of these mechanisms can initiate change, and together they often drive malignant transformation.

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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://stevensimmunologyserology.examzify.com>

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

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