

PMLS 2 COMPREHENSIVE PRACTICE TEST (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

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- 1. Thayer-Martin medium is used to isolate which organism?**
 - A. *Staphylococcus aureus*
 - B. *Streptococcus pneumoniae*
 - C. *Neisseria gonorrhoeae*
 - D. *Escherichia coli*

- 2. The greatest antigen-antibody reaction occurs under which transfusion circumstance?**
 - A. A person with type A blood is given type O blood.
 - B. A person with type AB blood is given type O blood.
 - C. A person with type O blood is given type A blood.
 - D. A person with type AB blood is given type B blood.

- 3. Which test is typically performed in the Microbiology section?**
 - A. Gram stain
 - B. CBC
 - C. Lipid panel
 - D. Electrolytes

- 4. Which structure of the heart delivers oxygen-rich blood to the ascending aorta?**
 - A. Left Atrium
 - B. Left Ventricle
 - C. Right Atrium
 - D. Right Ventricle

- 5. All the following tubes may contain EDTA as an anticoagulant, EXCEPT:**
 - A. Pink-top tube
 - B. Royal blue-top tube
 - C. Gray-Orange Speckled Tube
 - D. White-top tube

- 6. Which ABO type lacks A and B antigens on red blood cells?**
- A. Type A
 - B. Type B
 - C. Type AB
 - D. Type O
- 7. The tourniquet should be placed approximately how far above the puncture site?**
- A. 1-2 inches
 - B. 3-4 inches
 - C. 5-6 inches
 - D. 0-1 inch
- 8. Which analyte shows a higher reference value in capillary specimens relative to venous specimens?**
- A. Calcium
 - B. Glucose
 - C. Phosphorus
 - D. Protein
- 9. What is the name of the valve between the left atrium and left ventricle?**
- A. Aortic Valve
 - B. Pulmonary Valve
 - C. Mitral Valve
 - D. Tricuspid Valve
- 10. Which statement most accurately describes capillary blood?**
- A. A mix of venous, arterial, and capillary blood
 - B. Mostly tissue fluid mixed with arterial blood
 - C. Mostly venous blood mixed with tissue fluid
 - D. Nearly identical to a venous blood specimen

Answers

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

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Explanations

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1. Thayer-Martin medium is used to isolate which organism?

- A. Staphylococcus aureus
- B. Streptococcus pneumoniae
- C. Neisseria gonorrhoeae**
- D. Escherichia coli

Thayer-Martin medium is a selective culture medium designed to isolate *Neisseria* species, especially *Neisseria gonorrhoeae*. It uses a chocolate agar base enriched for *Neisseria* growth and includes antibiotics such as vancomycin to suppress Gram-positive bacteria, colistin to inhibit many Gram-negative rods, and nystatin to prevent fungal growth. This combination reduces competing flora found in clinical specimens, allowing *Neisseria gonorrhoeae* to grow when present. *Neisseria gonorrhoeae* is a fastidious Gram-negative diplococcus that causes gonorrhea, so this selective medium is particularly useful for recovering it from samples like urethral or cervical swabs. The other organisms listed are typically inhibited by these antibiotics, so they would not be favored growth on this medium.

2. The greatest antigen-antibody reaction occurs under which transfusion circumstance?

- A. A person with type A blood is given type O blood.
- B. A person with type AB blood is given type O blood.
- C. A person with type O blood is given type A blood.**
- D. A person with type AB blood is given type B blood.

The main idea is that transfusion reactions happen when antibodies in the recipient attack antigens on the donor's red blood cells. In the ABO system, type O individuals have antibodies against both A and B antigens in their plasma. If a type O recipient receives type A blood, the anti-A antibodies in the recipient will bind to the A antigens on the donor red cells. This triggers strong agglutination and hemolysis, producing the largest immune response. In the other scenarios, the donor cells either lack the target antigens or the recipient lacks antibodies against those antigens, so the reaction is much less pronounced.

3. Which test is typically performed in the Microbiology section?

- A. Gram stain**
- B. CBC
- C. Lipid panel
- D. Electrolytes

In Microbiology, a Gram stain is a foundational, rapid test used to categorize bacteria by their cell wall properties. It distinguishes Gram-positive organisms, which retain the crystal violet-iodine stain and appear purple, from Gram-negative organisms, which do not retain it and appear pink or red after a counterstain. This quick result guides early identification and helps inform initial treatment decisions while more specific tests and cultures are being processed. The other options—CBC, lipid panel, and electrolytes—belong to hematology and chemistry sections and measure blood cells or metabolic parameters, not microbial characteristics.

4. Which structure of the heart delivers oxygen-rich blood to the ascending aorta?

- A. Left Atrium
- B. Left Ventricle**
- C. Right Atrium
- D. Right Ventricle

The left ventricle is the chamber that delivers oxygen-rich blood into the ascending aorta. After blood is oxygenated in the lungs, it returns to the heart and enters the left atrium, moves through the mitral valve into the left ventricle, and then the ventricle contracts to push blood through the aortic valve into the ascending aorta. The left ventricle has a thick muscular wall to generate the high pressure needed to supply the entire systemic circulation. The other chambers handle blood in the right side of the heart or receive blood from the body and lungs, but they do not eject oxygen-rich blood into the ascending aorta.

5. All the following tubes may contain EDTA as an anticoagulant, EXCEPT:

- A. Pink-top tube
- B. Royal blue-top tube
- C. Gray-Orange Speckled Tube**
- D. White-top tube

EDTA prevents coagulation by binding calcium, which is why it's used in tubes for hematology tests like the CBC. Pink-top tubes are specifically EDTA-containing for hematology/immunohematology. Royal blue tops are often used with EDTA for trace-element and molecular tests, and white-top tubes are commonly EDTA-containing for DNA/RNA work. The gray-orange speckled tube, however, is designed for chemistry testing and uses a different additive combination (typically fluoride/oxalate) rather than EDTA to preserve glucose and prevent clotting. Because it does not rely on EDTA, it's the exception among tubes that may contain EDTA.

6. Which ABO type lacks A and B antigens on red blood cells?

- A. Type A
- B. Type B
- C. Type AB
- D. Type O**

ABO antigens on red blood cells are carbohydrates that determine blood type. If neither A nor B antigen is present on the cell surface, the red blood cells display only the H antigen. That absence of A and B antigens defines the Type O blood type. People with this type have antibodies against both A and B in their plasma, which is why this type can only receive blood from Type O donors but can donate to any ABO type in terms of the red cells. In contrast, Type A has A antigens, Type B has B antigens, and Type AB has both.

7. The tourniquet should be placed approximately how far above the puncture site?

- A. 1-2 inches
- B. 3-4 inches**
- C. 5-6 inches
- D. 0-1 inch

To make veins easier to see and feel, the tourniquet should be placed a short distance above the puncture site so venous blood pools in the area you'll access. About three to four inches (roughly 7–10 cm) above the puncture site is ideal because it provides enough distention of the superficial veins without crowding the needle area. If it's placed too close (near zero to one inch), the tissue around the puncture site doesn't distend well and the vein can become difficult to palpate. If it's too far away (five to six inches), the veins may not engorge adequately near the puncture site, making vein selection harder. This three-to-four-inch rule helps locate a suitable vein efficiently and comfortably.

8. Which analyte shows a higher reference value in capillary specimens relative to venous specimens?

- A. Calcium
- B. Glucose**
- C. Phosphorus
- D. Protein

Glucose is the analyte that tends to have higher reference values in capillary blood than in venous blood. Capillary samples are more arterialized because they contain a mix of arterial blood, venous blood, and a small amount of interstitial fluid. Arterial blood carries glucose from recent meals to tissues, so capillary glucose can be elevated, especially after eating or during rapid glucose changes. Venous blood, after circulating through tissues, reflects glucose usage and can appear lower. The other analytes listed are not consistently higher in capillary specimens and their capillary–venous differences are less reliable, so glucose is the one that shows the relative increase in capillary samples.

9. What is the name of the valve between the left atrium and left ventricle?

- A. Aortic Valve
- B. Pulmonary Valve
- C. Mitral Valve**
- D. Tricuspid Valve

Valves in the heart keep blood moving in one direction between chambers. The valve between the left atrium and left ventricle is the mitral valve, also known as the bicuspid valve because it has two leaflets. Its job is to allow oxygen-rich blood to move from the left atrium into the left ventricle during relaxation (diastole) and to prevent that blood from flowing backward into the atrium when the left ventricle contracts (systole). The other valves are located elsewhere: the aortic valve sits between the left ventricle and the aorta; the pulmonary valve sits between the right ventricle and the pulmonary artery; and the tricuspid valve sits between the right atrium and right ventricle.

10. Which statement most accurately describes capillary blood?

A. A mix of venous, arterial, and capillary blood

B. Mostly tissue fluid mixed with arterial blood

C. Mostly venous blood mixed with tissue fluid

D. Nearly identical to a venous blood specimen

Capillary blood is a product of microcirculation where blood moves from arteries through capillaries into veins, and exchange with surrounding tissue occurs. As this happens, plasma can leak into the surrounding tissue and tissue fluid can mix back into the capillary blood, creating a blend. So capillary blood contains arterial blood components, venous blood components, and tissue fluid. It is therefore not purely arterial or purely venous, and it is not just mostly tissue fluid, nor identical to venous blood. This mixed composition is what makes capillary samples distinct from strictly arterial or venous samples.

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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://pmls2comp.examzify.com>

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

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