

# Properties of Light Practice Test (Sample)

## Study Guide



**Everything you need from our exam experts!**

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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 true about the arrangement of magnetic pole orientations?**
  - A. North poles attract other north poles.**
  - B. South poles repel south poles.**
  - C. North and south poles attract each other.**
  - D. Same poles attract while opposite poles repel.**
  
- 2. What is the purpose of coatings on lenses?**
  - A. To enhance color saturation**
  - B. To reduce glare and increase light transmission**
  - C. To improve durability against scratches**
  - D. To filter UV light**
  
- 3. Which example best illustrates light behaving like particles?**
  - A. Light bends as it strikes a window.**
  - B. Light travels in straight lines.**
  - C. Light bounces off a white cement sidewalk.**
  - D. Light travels faster in a vacuum.**
  
- 4. What type of light source emits light in all directions?**
  - A. Point source**
  - B. Directional source**
  - C. Line source**
  - D. Diffused source**
  
- 5. What is the difference between incident light and reflected light?**
  - A. Incident light is filtered**
  - B. Incident light is outgoing**
  - C. Incident light is incoming, while reflected light is the light that bounces off a surface**
  - D. Incident light is absorbed**

- 6. Which element is magnetic?**
- A. calcium**
  - B. chromium**
  - C. carbon**
  - D. cobalt**
- 7. Which type of electromagnetic waves are primarily used for cooking food in microwave ovens?**
- A. x-rays**
  - B. visible light**
  - C. microwaves**
  - D. gamma rays**
- 8. How does the magnetic field around a magnet behave?**
- A. It contracts when another magnet approaches.**
  - B. It expands when near another magnetic field.**
  - C. It remains unchanged regardless of other magnets.**
  - D. It changes orientation based on pole alignment.**
- 9. What is the primary function of a convex lens?**
- A. Diverge light rays**
  - B. Converge light rays**
  - C. Reflect light rays**
  - D. Absorb light rays**
- 10. What does a photometer measure?**
- A. The speed of light**
  - B. The frequency of light**
  - C. The intensity of light**
  - D. The wavelength of light**

## Answers

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

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## **Explanations**

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## 1. What is true about the arrangement of magnetic pole orientations?

- A. North poles attract other north poles.
- B. South poles repel south poles.
- C. North and south poles attract each other.**
- D. Same poles attract while opposite poles repel.

The statement that describes the correct arrangement of magnetic pole orientations is that north and south poles attract each other. This fundamental principle of magnetism indicates that magnetic forces operate based on the interaction between different types of poles. A magnetic field is generated around a magnet, and the north pole of one magnet will seek out the south pole of another magnet. This attraction between opposite poles is what allows magnets to connect or hold together. In contrast, like poles repel each other, meaning that north poles repel north poles and south poles repel south poles. This relationship is crucial for understanding various magnetic applications and phenomena, such as the behavior of magnets in everyday life, magnetic fields in electronics, and even the workings of compasses. The interaction between opposite magnetic poles is essential for the functioning of many devices, from small magnets used in household items to larger industrial applications.

## 2. What is the purpose of coatings on lenses?

- A. To enhance color saturation
- B. To reduce glare and increase light transmission**
- C. To improve durability against scratches
- D. To filter UV light

The purpose of coatings on lenses primarily focuses on reducing glare and increasing light transmission. Coatings such as anti-reflective (AR) layers work by minimizing the reflection of light off the surface of lenses, which can improve clarity and visual comfort. This reduction in glare is particularly beneficial in bright conditions or when looking at screens, as it allows more light to pass through the lens, enhancing the overall visibility. In addition, by increasing light transmission, these coatings ensure that more light reaches the eyes, resulting in a brighter and clearer image. This is especially advantageous in activities such as driving or sports, where clear vision is crucial. The effectiveness of these coatings can greatly enhance the user experience, making them an essential feature in many optical products. While other options like enhancing color saturation, improving durability, or filtering UV light are also important functions of lens technologies, the specific role of coatings in this context is best described by their ability to reduce glare and facilitate better light transmission.

**3. Which example best illustrates light behaving like particles?**

- A. Light bends as it strikes a window.**
- B. Light travels in straight lines.**
- C. Light bounces off a white cement sidewalk.**
- D. Light travels faster in a vacuum.**

The example of light bouncing off a white cement sidewalk best illustrates light behaving like particles due to the principle of reflection. When light encounters a surface, such as that of the sidewalk, it can be thought of as a collection of particles (or photons) that interact with the surface. This interaction demonstrates particle behavior because, like balls bouncing off a hard surface, photons can be reflected at an angle equal to the angle at which they strike the surface (known as the law of reflection). This concept aligns well with the particle model of light, where light is viewed as discrete packets of energy that can collide with surfaces, thereby changing direction. In contrast, the bending of light as it strikes a window and the travel of light in straight lines reflect wave properties of light, while the idea of light traveling faster in a vacuum is related to its wave-like characteristics as well. These phenomena do not capture the particle aspect of light in the same way that reflection does.

**4. What type of light source emits light in all directions?**

- A. Point source**
- B. Directional source**
- C. Line source**
- D. Diffused source**

A point source is defined as a light source that emits light uniformly in all directions, akin to how a light bulb radiates light in nearly all directions in three-dimensional space. This characteristic allows for an even distribution of light and a decrease in intensity as the distance from the source increases, following the inverse square law where brightness diminishes with increasing distance. In contrast, a directional source emits light in a specific direction, such as a flashlight or a spotlight, resulting in a concentrated beam rather than an omnidirectional spread. A line source emits light along a linear path, which can produce effects like shadows that differ in intensity and direction from a point source. Meanwhile, a diffused source distributes light in varying directions but is often used in the context of softening shadows or creating ambient light rather than emitting it uniformly like a point source. Thus, the attributes of a point source align perfectly with the question's requirement for a light source that emits in all directions.

**5. What is the difference between incident light and reflected light?**

**A. Incident light is filtered**

**B. Incident light is outgoing**

**C. Incident light is incoming, while reflected light is the light that bounces off a surface**

**D. Incident light is absorbed**

The distinction between incident light and reflected light is fundamental in understanding how light interacts with surfaces. Incident light refers to the light that strikes a surface, coming towards it from a source. This can include natural light, such as sunlight, or artificial light, such as from a lamp. Reflected light, on the other hand, is the light that bounces off the surface after hitting it. When the incident light makes contact with a surface, some of it may be absorbed, some transmitted, and some reflected, depending on the properties of the surface and the nature of the light itself. This understanding is crucial in various applications, including photography, optics, and even architecture, as it helps predict how surfaces will interact visually and physically with light. Recognizing the roles of incident and reflected light is key to comprehending concepts such as brightness, color perception, and shadow formation.

**6. Which element is magnetic?**

**A. calcium**

**B. chromium**

**C. carbon**

**D. cobalt**

Cobalt is classified as a magnetic element due to its specific atomic structure and electron configuration. It is a transition metal located in Group 9 of the periodic table and possesses unpaired electrons in its d-orbitals, which allows it to exhibit ferromagnetism at room temperature. This property means that cobalt can not only be magnetized but also maintain its magnetic properties even after the external magnetic field is removed. In contrast, while chromium has some magnetic properties, it is not typically classified as a magnetic element like cobalt due to its weaker ferromagnetic characteristics at standard conditions. Calcium and carbon do not exhibit magnetic properties in the same way, as calcium is an alkaline earth metal and carbon is a non-metal; both lack unpaired electrons necessary for ferromagnetism. Therefore, cobalt stands out as the clear answer.

**7. Which type of electromagnetic waves are primarily used for cooking food in microwave ovens?**

- A. x-rays**
- B. visible light**
- C. microwaves**
- D. gamma rays**

Microwaves are the type of electromagnetic waves primarily used for cooking food in microwave ovens due to their specific properties. These waves have a frequency that enables them to be absorbed by water, fats, and sugars present in food. When microwaves penetrate the food, they cause the water molecules to vibrate rapidly, producing heat through friction. This is why microwaves are effective at heating and cooking food quickly. Other types of electromagnetic waves, such as x-rays and gamma rays, have much higher energy levels, which would not be suitable for cooking. X-rays are typically used for medical imaging and safety inspections, while gamma rays are used in nuclear medicine and radiation therapy. Visible light, on the other hand, does not have the capacity to heat food, as it operates at a lower frequency than microwaves. Therefore, microwaves are uniquely suited for efficient cooking in microwave ovens.

**8. How does the magnetic field around a magnet behave?**

- A. It contracts when another magnet approaches.**
- B. It expands when near another magnetic field.**
- C. It remains unchanged regardless of other magnets.**
- D. It changes orientation based on pole alignment.**

The behavior of the magnetic field around a magnet is influenced by the orientation of its poles. When two magnets are brought closer together, the alignment of their north and south poles will determine how the magnetic field interacts. For instance, if the north pole of one magnet is aligned with the south pole of another, they will attract each other, causing the magnetic field to effectively interact and influence the overall field pattern. Conversely, if like poles are brought together, they repel each other, which also affects the alignment and strength of the surrounding magnetic fields. This interaction illustrates how the magnetic field not only exists around individual magnets but also adapts based on the presence and orientation of other magnetic fields. The dynamic nature of magnetic fields in response to pole alignment is fundamental to understanding magnetic behavior in various practical applications and experiments.

## 9. What is the primary function of a convex lens?

- A. Diverge light rays
- B. Converge light rays**
- C. Reflect light rays
- D. Absorb light rays

A convex lens primarily functions to converge light rays. When parallel light rays pass through a convex lens, they are refracted towards a focal point on the opposite side of the lens. This property is due to the shape of the lens, which is thicker in the center and thinner at the edges, causing the light rays to bend inward. This convergence of light is the reason convex lenses are utilized in various optical devices, including magnifying glasses, cameras, microscopes, and binoculars, where a focus point is essential for image formation. The ability to bring light rays together allows for clearer and more detailed images, making convex lenses vital in applications where clarity and focus are important. The other choices involve functions that do not align with the behavior of a convex lens, as it does not diverge, reflect, or absorb light in the same manner as the other lenses or materials described.

## 10. What does a photometer measure?

- A. The speed of light
- B. The frequency of light
- C. The intensity of light**
- D. The wavelength of light

A photometer is an instrument specifically designed to measure the intensity of light. It assesses how much light passes through a certain area and provides a quantitative measure of its brightness. In practical applications, photometers can be used to determine the light output of various sources or the illuminance at a specific point in a space. The other options refer to aspects of light that are not measured by a photometer. For instance, while the speed of light is a fundamental constant known in physics, it doesn't change based on environmental conditions in a way that would require a photometer to measure it. The frequency of light relates to its color and energy, and though frequency is an important characteristic, it is typically determined through other means, such as spectroscopy. Similarly, while wavelength is a crucial property of light, it is usually measured using devices designed for that purpose rather than a photometer. Thus, the focus of a photometer on light intensity makes it the appropriate choice for this question.

## 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](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://propertiesoflight.examzify.com>**

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

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