

# COA Ophthalmic Tech Practice Exam (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

- 1. What type of infection is Trachoma?**
  - A. A bacterial infection**
  - B. A viral infection**
  - C. An allergic condition**
  - D. A fungal infection**
  
- 2. Anisocoria describes a condition involving what?**
  - A. Blind spots in vision**
  - B. Difference in pupil size**
  - C. Loss of peripheral vision**
  - D. Color vision deficiency**
  
- 3. Diabetes mellitus is classified as what type of disease process?**
  - A. Autoimmune**
  - B. Cardiovascular**
  - C. Metabolic**
  - D. Neurological**
  
- 4. What is the correct transposition of the plus-cylinder prescription  $+1.00+2.00 \times 90$  to its minus-cylinder?**
  - A.  $+1.00-2.00 \times 90$**
  - B.  $+3.00-2.00 \times 180$**
  - C.  $+1.00+2.00 \times 180$**
  - D.  $-1.00+2.00 \times 90$**
  
- 5. Which of the following is an example of an anti-VEGF agent?**
  - A. Bevacizumab**
  - B. Ranibizumab**
  - C. Avastin**
  - D. Famciclovir**

- 6. Which of the following are the three principal types of ophthalmic imaging?**
- A. CT Scan, MRI, External imaging**
  - B. Slit-lamp, External, Fundus**
  - C. Fundus, Visual Field, Pachymetry**
  - D. Ultrasonography, Color Vision Testing, Fundus**
- 7. What does a front surface mirror provide when measuring reflection?**
- A. Magnification**
  - B. True representation of distance**
  - C. Distorted image**
  - D. Double image**
- 8. Which optical instrument is primarily used for measuring the curvature of the cornea?**
- A. Ophthalmoscope**
  - B. Lensmeter**
  - C. Keratometer**
  - D. Pachymeter**
- 9. What color defects may be distinguished by the Ishihara test?**
- A. Blue and yellow**
  - B. Red and green**
  - C. Red and blue**
  - D. Green and yellow**
- 10. Conventionally, the first number in a written keratometry reading corresponds to?**
- A. The axis of the flatter meridian**
  - B. The total refracting power**
  - C. The flattest corneal meridian**
  - D. The steepest corneal meridian**



## **Answers**

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

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## **Explanations**

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## 1. What type of infection is Trachoma?

**A. A bacterial infection**

**B. A viral infection**

**C. An allergic condition**

**D. A fungal infection**

Trachoma is indeed classified as a bacterial infection, specifically caused by the bacterium *Chlamydia trachomatis*. It is one of the leading causes of preventable blindness worldwide. The infection is typically transmitted through direct contact with eye discharge from an infected person, which can also be spread through contaminated materials or flies that come into contact with the eyes. The inflammatory response that occurs due to the infection leads to scarring of the conjunctiva and cornea if left untreated, which can ultimately result in vision loss. Understanding the nature of Trachoma as a bacterial infection is crucial for healthcare providers as it highlights the importance of proper sanitation, access to clean water, and developing strategies for prevention and treatment, including antibiotic therapy. The confusion with other types of infections can be common, but recognizing Trachoma's specific bacterial causative agent is key in differentiating it from viral infections, allergic conditions, or fungal infections, which involve entirely different pathogens and mechanisms of disease.

## 2. Anisocoria describes a condition involving what?

**A. Blind spots in vision**

**B. Difference in pupil size**

**C. Loss of peripheral vision**

**D. Color vision deficiency**

Anisocoria refers specifically to a condition where there is a difference in the size of the pupils between the two eyes. This can occur for various reasons, including physiological variations, neurological conditions, or the effects of medications. In a healthy population, a small percentage of individuals may naturally have some degree of anisocoria without any underlying pathology. However, significant or newly developed anisocoria can indicate medical issues that necessitate further evaluation. The other choices pertain to different ocular conditions. For instance, blind spots in vision are typically related to retinal or optic nerve issues. Loss of peripheral vision often indicates glaucoma or other retinal problems. Color vision deficiency refers to issues with differentiating colors, often linked to the cones in the retina. Each of these conditions is distinct from anisocoria, which solely concerns the unequal size of the pupils.

### 3. Diabetes mellitus is classified as what type of disease process?

- A. Autoimmune
- B. Cardiovascular
- C. Metabolic**
- D. Neurological

Diabetes mellitus is classified as a metabolic disease primarily because it involves the body's ability to produce or utilize insulin effectively, which directly affects glucose metabolism. In healthy individuals, insulin regulates blood glucose levels by allowing glucose to enter cells for energy or storage. However, in diabetes mellitus, this process is disrupted, leading to elevated glucose levels in the bloodstream. The classification of diabetes as a metabolic disorder encompasses both types: Type 1 diabetes, which is an autoimmune process where the body's immune system attacks insulin-producing beta cells in the pancreas, and Type 2 diabetes, which is characterized by insulin resistance and relative insulin deficiency. Both conditions significantly impair the regulation of metabolic processes, particularly those related to carbohydrates, fats, and proteins. Understanding diabetes as a metabolic disorder also helps healthcare professionals focus on related complications, such as cardiovascular diseases, neuropathies, and other metabolic syndrome components that can arise from poor glucose control over time. This understanding is crucial for effective patient management and the development of treatment strategies aimed at improving metabolic health.

### 4. What is the correct transposition of the plus-cylinder prescription $+1.00+2.00 \times 90$ to its minus-cylinder?

- A.  $+1.00-2.00 \times 90$
- B.  $+3.00-2.00 \times 180$**
- C.  $+1.00+2.00 \times 180$
- D.  $-1.00+2.00 \times 90$

To transpose a plus-cylinder prescription to its equivalent minus-cylinder form, it's essential to understand the method of transposing cylindrical prescriptions. In a plus-cylinder prescription, such as  $+1.00 +2.00 \times 90$ , the first number ( $+1.00$ ) represents the sphere component, the second number ( $+2.00$ ) represents the cylinder component, and the axis ( $\times 90$ ) indicates the orientation of the cylinder. When transposing this prescription to minus-cylinder: 1. The sphere and cylinder components are adjusted. The sphere power is increased by the cylinder power, while the cylinder power becomes negative. 2. The axis also shifts 90 degrees from its original position. Since the original axis is at 90 degrees, adding 90 degrees to it results in 180 degrees. So, taking the original prescription  $+1.00 +2.00 \times 90$ , you add the cylinder value of  $+2.00$  to the sphere value of  $+1.00$ , yielding  $+3.00$ . The cylinder value then becomes  $-2.00$ , and the axis changes from 90 degrees to 180 degrees. Therefore, the transposed minus-cylinder prescription would be  $+3.00 -2.00 \times 180$ . This corresponds to

**5. Which of the following is an example of an anti-VEGF agent?**

- A. Bevacizumab**
- B. Ranibizumab**
- C. Avastin**
- D. Famciclovir**

Ranibizumab is an anti-vascular endothelial growth factor (anti-VEGF) agent, specifically designed to inhibit the activity of VEGF, which plays a crucial role in the growth of new blood vessels, particularly in conditions like age-related macular degeneration and other retinal disorders. This medication works by binding to VEGF and preventing it from interacting with its receptors on the surface of cells, thus reducing pathological blood vessel growth and associated leakage. Bevacizumab is another anti-VEGF agent, but it's a larger molecule used primarily in oncology rather than ophthalmology, even though it is sometimes repurposed for eye conditions. Avastin is actually the brand name for Bevacizumab, so while related, it is not the correct answer in this context when referring specifically to an anti-VEGF drug used primarily for ophthalmic issues. Famciclovir is an antiviral medication typically used to treat infections caused by certain viruses and does not have any role in VEGF inhibition.

**6. Which of the following are the three principal types of ophthalmic imaging?**

- A. CT Scan, MRI, External imaging**
- B. Slit-lamp, External, Fundus**
- C. Fundus, Visual Field, Pachymetry**
- D. Ultrasonography, Color Vision Testing, Fundus**

The correct answer identifies the three principal types of ophthalmic imaging as the slit-lamp, external imaging, and fundus imaging. The slit-lamp is a critical tool in ophthalmology, providing a magnified view of the anterior segment of the eye, including eyelid, conjunctiva, cornea, iris, and lens. It allows for detailed examination and diagnosis of various eye conditions. External imaging refers to methods used to capture images of the eye's exterior, which includes techniques to assess the overall ocular surface and alignment. This is essential for identifying abnormalities that could affect vision or indicate underlying health issues. Fundus imaging involves capturing images of the interior surface of the eye, particularly the retina, optic disc, and macula. This provides crucial information about the eye's health and can help in diagnosing conditions like diabetic retinopathy or age-related macular degeneration. Together, these three types of imaging provide a comprehensive understanding of ocular health and are essential tools in ophthalmic diagnostics and treatment planning. The other options mention modalities or tests that, while useful in their respective domains, do not encompass the core imaging techniques that are pivotal in the practice of ophthalmology.

**7. What does a front surface mirror provide when measuring reflection?**

**A. Magnification**

**B. True representation of distance**

**C. Distorted image**

**D. Double image**

A front surface mirror is designed to reflect light off its surface rather than through it, which minimizes distortion and provides a clearer image. When measuring reflection, this type of mirror ensures that the image is a true representation of the distance between the object and the mirror. This is particularly important in optical measurements, as it gives accurate spatial relationships that can be quantified. By keeping the reflected image free from the distortions that may occur in other types of mirrors, the front surface mirror allows for precise assessments that are crucial in various ophthalmic procedures and diagnostics.

**8. Which optical instrument is primarily used for measuring the curvature of the cornea?**

**A. Ophthalmoscope**

**B. Lensmeter**

**C. Keratometer**

**D. Pachymeter**

The keratometer is an optical instrument designed specifically for measuring the curvature of the cornea. This device plays an essential role in refractive surgery assessments, contact lens fitting, and understanding the overall shape of the cornea, which can affect vision. The keratometer utilizes reflected light to measure the radius of curvature of the corneal surface, thereby providing important data regarding the eye's refractive characteristics. Other instruments serve different purposes in ophthalmology. For instance, an ophthalmoscope is used for inspecting the retina and other internal structures of the eye but does not measure corneal curvature. A lensmeter, on the other hand, measures the power of lenses, which is important for determining prescriptions but does not relate to the measurements of the cornea. Lastly, a pachymeter measures corneal thickness, a different parameter crucial in assessing conditions like glaucoma but not related to curvature.

**9. What color defects may be distinguished by the Ishihara test?**

- A. Blue and yellow**
- B. Red and green**
- C. Red and blue**
- D. Green and yellow**

The Ishihara test is primarily designed to identify red and green color deficiencies. It consists of a series of plates, each showing a pattern of colored dots that form numbers or shapes that can be seen distinctly by individuals with normal color vision but are difficult or impossible for those with red or green color deficiencies to discern. Red-green color deficiency is one of the most common forms of color vision deficiency, affecting a significant portion of the population, particularly males. This type of deficiency can be classified into two main categories: protanopia (difficulty seeing red) and deuteranopia (difficulty seeing green). The Ishihara test specifically targets these defects by using colors that exploit the differences in how individuals with normal color perception and those with red-green deficiencies perceive colors. Identifying blue and yellow deficiencies is not the primary function of the Ishihara test, which is why options referring to those colors do not apply. While blue-yellow color deficiencies do exist, they are much rarer than red-green deficiencies and typically are not assessed in standard color vision tests like the Ishihara.

**10. Conventionally, the first number in a written keratometry reading corresponds to?**

- A. The axis of the flatter meridian**
- B. The total refracting power**
- C. The flattest corneal meridian**
- D. The steepest corneal meridian**

In a keratometry reading, the first number represents the flattest corneal meridian, which is a crucial component in assessing the curvature of the cornea. This measurement is important for various aspects of ocular health, particularly when evaluating astigmatism and planning for contact lens fittings or surgical procedures such as cataract surgery or refractive surgery. This first value gives practitioners an understanding of the corneal shape and how it may affect visual acuity. By knowing the flattest corneal meridian, eye care professionals can better interpret the overall corneal topography, as it corresponds to the area of the cornea that has the least curvature. This information is particularly useful in diagnosing conditions like keratoconus or other corneal irregularities. The other options do not accurately represent the first number in a keratometry reading. For instance, while the steepest corneal meridian provides additional information about the cornea's curvature, it is not what the first number indicates. Similarly, the total refracting power and the axis of the flatter meridian serve different purposes in a comprehensive examination but are not the focus of that initial measurement. Thus, understanding that the first number reflects the flattest corneal meridian is key for



## 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://coaophthalmictech.examzify.com>**

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