

CERTIFIED RETINAL ANGIOGRAPHER (CRA) PRACTICE EXAM (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. Which statement best describes Primary Open Angle Glaucoma?**
 - A. It presents with acute eye pain and red eye.
 - B. It is painless with no vision changes initially.
 - C. It has no effect on peripheral vision.
 - D. It is the most common cause of blindness when untreated.
- 2. Which of the following is not a direct ocular blood supply pathway mentioned?**
 - A. Central retinal artery
 - B. Posterior ciliary arteries
 - C. Ophthalmic artery
 - D. Aorta
- 3. Which part of the eye is the opaque, white outer portion that provides protection and structure and is mostly avascular?**
 - A. Cornea
 - B. Retina
 - C. Sclera
 - D. Conjunctiva
- 4. Which structure in the eye produces aqueous humor?**
 - A. Iris
 - B. Retina
 - C. Cornea
 - D. Ciliary Body
- 5. Which of the following is NOT typically considered a vascular eye disease?**
 - A. AMD
 - B. CME
 - C. CRVO
 - D. DM

- 6. RGB color image concept: how many channels and bits per channel in standard 24-bit color?**
- A. 4 channels with 6 bits each
 - B. 3 channels with 8 bits each
 - C. 2 channels with 12 bits each
 - D. 5 channels with 4 bits each
- 7. Homatropine is used to treat which condition?**
- A. Glaucoma
 - B. Uveitis
 - C. Cataracts
 - D. Macular degeneration
- 8. What wavelength does the barrier filter pass during fluorescein angiography?**
- A. 525 nm
 - B. 490 nm
 - C. 600 nm
 - D. 550 nm
- 9. Auto fluorescence is defined as using blue light to reveal what?**
- A. Uses blue wavelength to show auto fluorescence from fluorophores without fluorescein.
 - B. Requires fluorescein dye.
 - C. Is the same as pseudo fluorescence.
 - D. Is not related to fluorophores.
- 10. Which area does indocyanine green (ICG) highlight on imaging, and why does it not leak into all retinal tissue?**
- A. Nerve fiber layer; diffuses into tissue
 - B. Retinal pigment epithelium; binds to plasma proteins
 - C. Choroidal layer; binds to plasma proteins of the blood preventing diffusion
 - D. Inner limiting membrane; does not bind plasma proteins

Answers

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

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Explanations

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1. Which statement best describes Primary Open Angle Glaucoma?

- A. It presents with acute eye pain and red eye.
- B. It is painless with no vision changes initially.**
- C. It has no effect on peripheral vision.
- D. It is the most common cause of blindness when untreated.

Open-angle glaucoma typically presents as a painless, insidious condition where early vision changes may be absent. In most cases, the problem quietly damages the optic nerve and gradually narrows the peripheral visual field while central vision remains intact for a long time. This why the statement describing it as painless with no vision changes initially best reflects how it behaves in many patients. Acute eye pain and a red eye are not characteristic of open-angle glaucoma; that presentation aligns with acute angle-closure glaucoma. It is also not true that there is no effect on peripheral vision—open-angle glaucoma mainly hits the peripheral field first, then progresses inward. While glaucoma can lead to blindness if untreated, the defining early feature is the painless, gradual peripheral vision loss, making that option the most accurate description.

2. Which of the following is not a direct ocular blood supply pathway mentioned?

- A. Central retinal artery
- B. Posterior ciliary arteries
- C. Ophthalmic artery
- D. Aorta**

The key idea is which vessels actually deliver blood directly to ocular tissues. The eye receives arterial blood through the central retinal artery, which feeds the inner retina; the posterior ciliary arteries, which supply the choroid and outer retina; and the ophthalmic artery, which is the main artery entering the orbit and giving rise to those branches. The aorta, while it is the major systemic artery that ultimately connects to the ocular supply chain via branches, is not itself a direct ocular blood supply pathway. It's the upstream source from which ocular arteries arise, not a direct route that perfuses ocular tissues. So the not-direct ocular pathway is the aorta.

3. Which part of the eye is the opaque, white outer portion that provides protection and structure and is mostly avascular?

- A. Cornea
- B. Retina
- C. Sclera**
- D. Conjunctiva

The sclera is the opaque, white outer coat that gives the eyeball its shape and protection. Its dense collagen fibers form a tough, protective shell around the globe and provide attachment points for the external eye muscles, helping to maintain structural integrity during movement. It is described as mostly avascular, meaning it has few blood vessels of its own; nutrition reaches deeper tissues by diffusion from surrounding vascular tissues and the underlying layers. The sclera is continuous with the cornea at the limbus, but unlike the cornea, which must stay transparent to allow light to enter, the sclera remains opaque so it can shield and structurally support the eye. The conjunctiva covers only the anterior surface, not the entire white coat, and the retina sits on the inner surface of the eye rather than on the outside.

4. Which structure in the eye produces aqueous humor?

- A. Iris
- B. Retina
- C. Cornea
- D. Ciliary Body**

The fluid that fills the front of the eye is produced by the ciliary body, specifically the ciliary processes. The nonpigmented ciliary epithelium of these processes secretes aqueous humor into the posterior chamber, then the fluid flows through the pupil into the anterior chamber and exits mainly via the trabecular meshwork into Schlemm's canal (with some outflow through the uveoscleral pathway). The other structures have different roles: the iris controls pupil size, the retina is the light-sensing neural layer, and the cornea is the clear front surface that is nourished by the aqueous humor rather than producing it.

5. Which of the following is NOT typically considered a vascular eye disease?

- A. AMD**
- B. CME
- C. CRVO
- D. DM

Vascular eye diseases are ones where the vessels themselves drive the problem—leakage, occlusion, or abnormal vessel growth is central. Cystoid macular edema comes from leakage from retinal vessels and breakdown of the blood-retina barrier, so it's a vascular issue. Central retinal vein occlusion is a direct blockage of a retinal vein, another clear vascular event. Diabetes causes retinal vessels to become damaged and leaky, making diabetic retinopathy a vascular condition. Age-related macular degeneration, by contrast, is primarily a degenerative process of the macula due to aging, with neovascularization occurring only as a secondary complication in the wet form. Thus AMD isn't typically categorized as a vascular eye disease, making it the best choice.

6. RGB color image concept: how many channels and bits per channel in standard 24-bit color?

- A. 4 channels with 6 bits each
- B. 3 channels with 8 bits each**
- C. 2 channels with 12 bits each
- D. 5 channels with 4 bits each

In this concept, color depth and how many channels define how many colors you can represent. Standard 24-bit RGB color uses three channels—red, green, and blue. Each channel is 8 bits, giving 256 intensity levels per channel. Multiply $256 \times 256 \times 256$ to get 16,777,216 possible colors, which totals 24 bits of color information. The other options don't match this arrangement: they either change the number of channels or the bits per channel or don't sum to the typical 24-bit RGB scheme.

7. Homatropine is used to treat which condition?

- A. Glaucoma
- B. Uveitis**
- C. Cataracts
- D. Macular degeneration

Understanding how this drug works helps explain why it's used for uveitis. Homatropine is a muscarinic (antimuscarinic) agent that causes cycloplegia (paralysis of the ciliary muscle) and mydriasis (pupil dilation). In anterior uveitis, relaxing the ciliary muscle reduces painful ciliary spasm and lowers the risk of iris sticking to the lens (posterior synechiae). The dilation also assists in exam and reduces patient discomfort from light sensitivity. It isn't used to treat glaucoma, cataracts, or macular degeneration. Dilating drops can be unhelpful or potentially harmful in glaucoma and do not address the underlying inflammation. Cataracts are managed surgically, and macular degeneration has other targeted treatments.

8. What wavelength does the barrier filter pass during fluorescein angiography?

- A. 525 nm**
- B. 490 nm
- C. 600 nm
- D. 550 nm

In fluorescein angiography the barrier filter is chosen to transmit the light emitted by fluorescein after it's excited, which falls in the green-yellow region around 520–530 nm. This filter blocks the blue excitation light while letting the emitted fluorescence reach the camera or observer. The passband is typically centered near 525 nm, matching fluorescein's emission peak. Among the options, 525 nm best represents the emission wavelength the barrier filter passes; 490 nm is the excitation light that's blocked, 600 nm is outside the emission range, and 550 nm is close but not the standard center for the typical barrier filter. So the barrier filter passes light around 525 nm.

9. Auto fluorescence is defined as using blue light to reveal what?

- A. Uses blue wavelength to show auto fluorescence from fluorophores without fluorescein.**
- B. Requires fluorescein dye.
- C. Is the same as pseudo fluorescence.
- D. Is not related to fluorophores.

Autofluorescence imaging relies on the retina's own fluorophores that emit light when excited by blue light. The main endogenous contributor is lipofuscin in the retinal pigment epithelium; when stimulated around 488 nm, these molecules fluoresce and the emitted light is captured to create the autofluorescence image. Because the signal comes from tissue components alone, no fluorescein dye is required. This distinguishes autofluorescence from dye-based angiography and from concepts like pseudo fluorescence.

10. Which area does indocyanine green (ICG) highlight on imaging, and why does it not leak into all retinal tissue?

- A. Nerve fiber layer; diffuses into tissue
- B. Retinal pigment epithelium; binds to plasma proteins
- C. Choroidal layer; binds to plasma proteins of the blood preventing diffusion**
- D. Inner limiting membrane; does not bind plasma proteins

Indocyanine green imaging highlights the choroidal vasculature because ICG binds strongly to plasma proteins, forming large complexes that stay inside the blood vessels and do not diffuse into surrounding retinal tissue. This intravascular confinement means the dye outlines the choroidal vessels and choriocapillaris, while the retinal layers remain mostly unlabelled. The retinal blood barrier and the outer retinal barrier (RPE) further prevent leakage into the retina, so you don't see dye spreading through all retinal tissue. The result is a clear image of the choroidal circulation rather than the retina itself.

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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://craretinalangiographer.examzify.com>

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

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