

# CALIFORNIA FLUOROSCOPY STATE BOARD PRACTICE EXAM (SAMPLE)

## STUDY GUIDE



## SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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<https://cafluoroscopystateboard.examzify.com>



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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. In a dynamic flat panel detector fluoroscopy system, what component is replaced compared to a conventional system?**
  - A. TV camera
  - B. TV monitor
  - C. Image intensifier
  - D. Spot-film
- 2. What is the main function of the electron gun in a vidicon camera?**
  - A. To amplify the signal received
  - B. To produce the scanning electron beam
  - C. To focus the image on the monitor
  - D. To enhance color accuracy
- 3. According to California state regulations, the intensity of the x-ray beam at the tabletop of a fluoroscope should not exceed what?**
  - A. 3.0 rads/min for each mA
  - B. 3.0 rads/hr for each mA
  - C. 2.2 rads/min for each mA
  - D. 2.2 rads/hr for each mA
- 4. What is the minimum thickness of a gonadal shield according to CA state regulations?**
  - A. 0.35 lead equivalent
  - B. 0.25 mm Al equivalent
  - C. 0.50 mm Al equivalent
  - D. 0.50 mm lead equivalent
- 5. Which size of image intensifier unit is known to produce the best overall image quality?**
  - A. 9"
  - B. Quadruple mode unit
  - C. 6"/9"12'
  - D. 6"/9"

- 6. What key information should be included when obtaining a medical history for a radiographic examination?**
- A. Confidential information only
  - B. Reason for the examination
  - C. Only information from inpatients
  - D. Obtained only by the radiologist
- 7. If the input phosphor of an image intensifier measures 15 inches and the output phosphor measures 1.0 inch, what is the minification gain?**
- A. 30
  - B. 225
  - C. 175
  - D. 300
- 8. Which type of video signal is managed by a camera control unit to maintain image fidelity?**
- A. Analog signal
  - B. Digital signal
  - C. Combined signal
  - D. Filtered signal
- 9. To achieve maximum differential absorption by the tissues for high-quality fluoroscopic images, what should be selected correctly?**
- A. Milliamperage
  - B. Peak kilovolts
  - C. Distance
  - D. Time
- 10. Light produced by incident x-ray exposure on a flat panel image receptor plate (FPIR) is captured by which component?**
- A. Computer
  - B. Thin film transistor (TFT) array
  - C. Scintillator
  - D. Photodiode

## **Answers**

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

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## **Explanations**

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**1. In a dynamic flat panel detector fluoroscopy system, what component is replaced compared to a conventional system?**

- A. TV camera**
- B. TV monitor
- C. Image intensifier
- D. Spot-film

*In a dynamic flat panel detector fluoroscopy system, the key component that is replaced compared to a conventional system is the image intensifier. The image intensifier in traditional fluoroscopy systems is crucial for amplifying the incoming X-ray signals to produce a visible image on the monitor. However, in dynamic flat panel detector systems, the image intensifier is substituted with a flat panel detector that directly converts X-rays into electronic signals. The flat panel detector utilizes advanced technology, such as thin-film transistors (TFT) and amorphous silicon or cesium iodide layers, to capture images. This transition provides several benefits, including improved image quality, wider dynamic range, reduced patient dose, and better spatial resolution. Additionally, flat panel detectors are more compact and can be integrated into various fluoroscopy setups, enhancing the overall efficiency and performance of the imaging system. While components like the TV camera, TV monitor, and spot-film are still relevant in fluoroscopy, they do not undergo the same replacement as the image intensifier in the shift from conventional to dynamic flat panel systems.*

**2. What is the main function of the electron gun in a vidicon camera?**

- A. To amplify the signal received
- B. To produce the scanning electron beam**
- C. To focus the image on the monitor
- D. To enhance color accuracy

*The main function of the electron gun in a vidicon camera is to produce the scanning electron beam. This component is crucial for the operation of the camera, as it generates a focused stream of electrons that scan across the photoconductive surface of the vidicon tube. By creating this beam, the electron gun allows the camera to capture images by converting light into an electronic signal. As the scanning beam moves across the surface, it interacts with the light patterns being captured, which results in the formation of an electrical signal that can then be amplified and processed to create a visible image. This process is foundational to how vidicon cameras function, making the electron gun an essential component for image acquisition. The other options pertain to different aspects of the camera's operation or functionalities that are related but do not specifically highlight the primary role of the electron gun. Signal amplification, image focusing, and color accuracy enhancement are all important in video processing but are not the direct responsibilities of the electron gun itself.*

**3. According to California state regulations, the intensity of the x-ray beam at the tabletop of a fluoroscope should not exceed what?**

- A. 3.0 rads/min for each mA
- B. 3.0 rads/hr for each mA
- C. 2.2 rads/min for each mA**
- D. 2.2 rads/hr for each mA

*The correct answer pertains to the regulatory limit set for the intensity of the x-ray beam at the tabletop of a fluoroscope. In California, the current regulation places a maximum allowable exposure of 2.2 rads/min for each milliamperage (mA) setting. This limit is established to ensure patient safety by minimizing radiation exposure during fluoroscopic procedures while still allowing for adequate imaging quality. By specifying an intensity limit in rads per minute rather than per hour, the regulation takes into consideration the time of exposure inherent in fluoroscopy, which involves continuous or extended imaging sessions. The objective is to ensure that the exposure remains within tolerable limits to protect patients from potential harmful effects of radiation, emphasizing the need for appropriate control measures during procedures. Understanding this standard also highlights the importance of monitoring and adherence to safety protocols in medical environments where fluoroscopy is used, reinforcing the commitment to reducing unnecessary radiation exposure to patients.*

**4. What is the minimum thickness of a gonadal shield according to CA state regulations?**

- A. 0.35 lead equivalent
- B. 0.25 mm Al equivalent
- C. 0.50 mm Al equivalent
- D. 0.50 mm lead equivalent**

*The correct choice aligns with the California state regulations regarding the minimum thickness of gonadal shields. A gonadal shield must have a lead equivalent thickness of 0.50 mm to ensure adequate protection against radiation exposure, specifically in sensitive areas such as the reproductive organs. Lead is commonly used in radiation protection because of its high density and effective absorption properties, which help reduce the intensity of radiation. Using 0.50 mm of lead equivalent provides a sufficient barrier to minimize the risk of radiation-induced damage to the gonads during fluoroscopic procedures. This regulatory requirement underscores the importance of adhering to safety measures in medical settings to protect both patients and healthcare workers from unnecessary radiation exposure.*

**5. Which size of image intensifier unit is known to produce the best overall image quality?**

**A. 9"**

B. Quadruple mode unit

C. 6"/9"/12'

D. 6"/9"

*The 9-inch image intensifier unit is recognized for producing the best overall image quality due to its optimal balance between size and image clarity. When evaluating image intensifiers, larger sizes typically provide a greater diameter of the input screen, which enhances the overall resolution and brightness of the image. This leads to finer detail being captured and displayed, which is crucial for diagnostic processes in fluoroscopy. In contrast, options such as the quadruple mode unit may imply versatility in operation but do not guarantee superior image quality as the primary factor. The combined sizes indicated in the other choices (6"/9"/12' and 6"/9") suggest a range of image intensifier sizes, but they do not compete with the singular 9-inch unit when focused solely on the optimal image quality production. Therefore, the 9-inch unit stands out in providing enhanced detail and better visibility for medical imaging procedures.*

**6. What key information should be included when obtaining a medical history for a radiographic examination?**

A. Confidential information only

**B. Reason for the examination**

C. Only information from inpatients

D. Obtained only by the radiologist

*When obtaining a medical history for a radiographic examination, it is essential to include the reason for the examination. This information provides crucial context for the radiologic technologist or the radiologist, helping them understand the clinical indications for the imaging study. Knowing the reason for the examination aids in ensuring that the appropriate imaging techniques and protocols are utilized, and it allows for better interpretation of the results. The rationale behind focusing on the reason for the examination lies in the need to address specific clinical questions or concerns. This aspect of medical history informs the healthcare provider about the patient's symptoms, prior treatments, and related medical issues, which can significantly impact the imaging approach and the interpretation of findings. Other choices have limitations in their scope and relevance. Focusing solely on confidential information may lead to overlooking critical clinical data that are necessary for effective imaging. Gathering information only from inpatients neglects important details from outpatients who may have similar or different clinical needs. Furthermore, limiting the collection of medical history to information obtained solely by the radiologist reduces the collaborative nature of healthcare, where all practitioners contribute valuable insights for the best patient care.*

7. If the input phosphor of an image intensifier measures 15 inches and the output phosphor measures 1.0 inch, what is the minification gain?

- A. 30
- B. 225**
- C. 175
- D. 300

Minification gain in an image intensifier is calculated using the formula:  $\text{Minification Gain} = (\text{Input Phosphor Diameter} / \text{Output Phosphor Diameter})^2$ . In this case, the input phosphor measures 15 inches and the output phosphor measures 1.0 inch. First, we can plug the measurements into the formula:  $\text{Minification Gain} = (15 \text{ inches} / 1.0 \text{ inch})^2 = (15)^2 = 225$ . This reveals that the image intensifier is concentrating the larger input area onto a smaller output area, resulting in an enhancement of the image intensity due to minification. The calculation clearly demonstrates how significant the gain is, making the correct choice 225. This aspect of image intensifiers is crucial in medical imaging, as it directly affects the quality of the images produced for diagnosis and treatment. Understanding how to compute minification gain helps appreciate the role of image intensifiers in enhancing image resolution and contrast, which is essential for healthcare professionals in the field.

8. Which type of video signal is managed by a camera control unit to maintain image fidelity?

- A. Analog signal**
- B. Digital signal
- C. Combined signal
- D. Filtered signal

The correct choice refers to the analog signal, which is significant in the context of video signal management by a camera control unit. Analog signals are continuous waveforms that represent variations in light intensity, allowing for a high degree of detail in the image captured by the camera. The camera control unit processes these signals to maintain image fidelity, ensuring that the quality and clarity of the video output are preserved during transmission and processing. In contrast, digital signals, while common in modern imaging technology, are discrete and represent data in binary form. They rely on sampling and quantization of the analog signal, but the focus here is on the management of the original continuous signal. Combined signals and filtered signals may refer to different processes involved in signal manipulation or enhancement but do not specifically speak to the unit's core management of analog signals to bolster image quality. This highlights the importance of understanding analog signals in the context of imaging systems and the nuances of how video fidelity is maintained in practice.

**9. To achieve maximum differential absorption by the tissues for high-quality fluoroscopic images, what should be selected correctly?**

- A. Milliamperage
- B. Peak kilovolts**
- C. Distance
- D. Time

*To achieve maximum differential absorption by the tissues, selecting the peak kilovolts (kVp) is crucial because it directly impacts the penetration power of the X-rays during fluoroscopy. The kVp level influences the energy of the X-rays produced, which in turn affects how different tissues in the body absorb these X-rays. Higher kVp settings result in X-rays that can penetrate tissues more effectively, allowing for better differentiation between various structures based on their density and composition. This is important for producing high-quality images where soft tissues can be contrasted against denser structures like bones. The choice of kVp determines the range of energies that will be used to interact with the anatomical structures, optimizing the contrast needed for diagnostic purposes. In contrast, while factors like milliamperage, distance, and time also play roles in fluoroscopy, they do not influence the differential absorption in the same direct manner as kVp. Milliamperage affects the quantity of X-ray production, distance influences the intensity reaching the image receptor, and time is associated with exposure duration. However, it is the proper selection of kVp that primarily ensures the optimal imaging quality by maximizing the contrast through differential absorption of various tissues.*

**10. Light produced by incident x-ray exposure on a flat panel image receptor plate (FPIR) is captured by which component?**

- A. Computer
- B. Thin film transistor (TFT) array**
- C. Scintillator
- D. Photodiode

*The light produced by incident x-ray exposure on a flat panel image receptor plate (FPIR) is primarily captured by the thin film transistor (TFT) array. In a flat panel detector system, the TFT serves as a key component that converts the light generated from the scintillator into electrical signals. The TFT array consists of a matrix of transistors that collect these signals, enabling the conversion of the light into a digital image for processing by the computer. The role of the TFT array is crucial because it allows for efficient readout of the image data without interruption, ensuring that the image can be processed quickly and with high fidelity. This processing capability is essential for producing clear and accurate images for diagnostic purposes. While other components, like the scintillator, play a role in the initial conversion of x-rays to light, it is the TFT array that captures and processes that light, making it integral to the imaging workflow in flat panel radiography systems.*

## 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://cafluoroscopystateboard.examzify.com>

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

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