

Forensics - Crime Scene Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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Table of Contents

Copyright	1
Table of Contents	2
Introduction	3
How to Use This Guide	4
Questions	5
Answers	9
Explanations	11
Next Steps	17

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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 the primary purpose of QA/QC in forensic science?**
 - A. Increases case throughput**
 - B. Ensures accuracy and reliability**
 - C. Reduces the need for calibration**
 - D. Improves equipment documentation**

- 2. What is the difference between presumptive and confirmatory toxicology tests?**
 - A. Presumptive tests indicate possible presence; confirmatory tests provide definitive identification.**
 - B. Presumptive tests are slower than confirmatory.**
 - C. Presumptive tests are more accurate than confirmatory.**
 - D. There is no difference.**

- 3. What are the two main types of crime scene sketches and their purposes?**
 - A. Rough sketch for immediate layout; final scale sketch for court and legal use.**
 - B. Final scale sketch for court; rough sketch for interior design.**
 - C. Scale map; rough floor plan.**
 - D. Aerial sketch; micro sketch.**

- 4. What are STRs and why are they used in human identification?**
 - A. Miniature Tandem Repeats; used for paternity testing.**
 - B. Short Tandem Repeats; highly polymorphic regions used for high discrimination in human identification.**
 - C. Simple Transverse Repeats; used for age estimation.**
 - D. Single Tandem Repeats; used for gene expression.**

- 5. What term is used for a sample that serves as a baseline for comparing crime scene evidence?**
 - A. Reference sample**
 - B. Exemplar**
 - C. Control**
 - D. Standard**

- 6. How does the Frye standard differ from Daubert?**
- A. Frye requires general acceptance in the relevant field.**
 - B. Frye is more flexible and evidence-based than Daubert.**
 - C. Frye applies only to digital evidence.**
 - D. Daubert is the more flexible, evidence-based gatekeeping standard.**
- 7. How do rifling characteristics differ from striations on a bullet?**
- A. Rifling characteristics are the overall pattern from lands and grooves; striations are microscopic marks from the barrel surface**
 - B. Rifling characteristics are microscopic marks; striations are the overall pattern**
 - C. Both are identical marks**
 - D. Rifling characteristics relate to primer marks; striations relate to extractor marks**
- 8. Which statement about interpreting DNA evidence with a likelihood ratio is accurate?**
- A. A high LR means stronger support for the non-contributor hypothesis.**
 - B. LR is a simple count of matching alleles.**
 - C. LR is the probability that the data were observed given a random match.**
 - D. A high LR means the data are more supportive of the contributor hypothesis than the non-contributor hypothesis.**
- 9. Which item is listed as evidence collected from the victim that relates to gunshot residue?**
- A. Victim's clothing**
 - B. Fingernail scrapings**
 - C. Hand swabs (gunshot residue)**
 - D. Hair samples**

10. Mitochondrial DNA is inherited from which parent?

- A. Mother**
- B. Father**
- C. Both parents**
- D. None**

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Answers

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

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Explanations

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1. What is the primary purpose of QA/QC in forensic science?

- A. Increases case throughput**
- B. Ensures accuracy and reliability**
- C. Reduces the need for calibration**
- D. Improves equipment documentation**

The main idea behind QA/QC in forensic science is to ensure that every result is accurate and reliable. Quality assurance sets up the framework—validated methods, proper training, thorough documentation, proficiency testing, and audits—so the whole process is sound. Quality control applies ongoing checks—calibrations, control samples, instrument maintenance logs, and defined acceptance criteria—to keep measurements trustworthy day to day. Together, they make results defensible in court, reproducible by others, and less prone to errors. While good QA/QC supports clearer documentation and can help operate more smoothly or even streamline workflows, those are not the primary purpose. Reducing calibration or simply speeding up cases might happen as side effects, but the core aim remains the integrity and trustworthiness of the analytical results.

2. What is the difference between presumptive and confirmatory toxicology tests?

- A. Presumptive tests indicate possible presence; confirmatory tests provide definitive identification.**
- B. Presumptive tests are slower than confirmatory.**
- C. Presumptive tests are more accurate than confirmatory.**
- D. There is no difference.**

Presumptive tests are screening tools that indicate the possible presence of a substance, delivering rapid, preliminary results without proving the exact identity. Confirmatory tests use highly specific methods, such as GC-MS or LC-MS/MS, to provide definitive identification (and often quantification) by matching a substance's unique chemical signature. Because presumptive tests can react with similar compounds or be affected by interferences, they may yield false positives or negatives, which is why a follow-up confirmatory test is required to make a definitive determination. In practice, scientists screen first with a quick presumptive test and then apply a confirmatory test to establish with high certainty what, if anything, is actually present.

3. What are the two main types of crime scene sketches and their purposes?

A. Rough sketch for immediate layout; final scale sketch for court and legal use.

B. Final scale sketch for court; rough sketch for interior design.

C. Scale map; rough floor plan.

D. Aerial sketch; micro sketch.

Rough sketches capture the immediate layout and relationships at the scene, while final scaled sketches provide a precise, to-scale representation for court and legal use. The rough sketch is made at the scene to quickly show where items and evidence sit relative to each other, entryways, paths of movement, and important features. It's done fast, may not be to scale, and records essential placements to guide evidence collection and later analysis. The final sketch is developed later from the measurements taken on site and drawn to scale with accurate distances and orientations. This produces a clean, professional diagram that can be presented in court, supports precise reconstruction, and stands up to evidentiary scrutiny. Together, they cover both the need for rapid, practical documentation and the need for a formal, admissible representation. Other options don't fit because they either drift into unrelated domains or describe formats not standard for crime scene documentation.

4. What are STRs and why are they used in human identification?

A. Miniature Tandem Repeats; used for paternity testing.

B. Short Tandem Repeats; highly polymorphic regions used for high discrimination in human identification.

C. Simple Transverse Repeats; used for age estimation.

D. Single Tandem Repeats; used for gene expression.

Short Tandem Repeats are short DNA sequences of 2-6 base pairs that repeat in tandem, and the number of repeats varies greatly between individuals. That high variability across many loci gives each person a unique genetic profile, which is why STRs provide strong discrimination for identifying someone. In forensic work, these regions are amplified from even tiny or degraded samples and then sized to determine the number of repeats at multiple loci, with both alleles visible in a person due to co-dominant inheritance. This combination—short, highly variable repeats measured across many sites—makes STRs ideal for human identification and paternity testing. The other terms aren't standard for this purpose, so they don't describe why STRs are used in identification.

5. What term is used for a sample that serves as a baseline for comparing crime scene evidence?

- A. Reference sample**
- B. Exemplar**
- C. Control**
- D. Standard**

The main idea here is using a known, source-origin sample to establish a baseline for comparison with crime scene evidence. This known sample is called a reference sample. By collecting a reference sample from a person, object, or material that is believed to be the source, analysts can compare it directly with the evidence to see if they originate from the same source. For example, a suspect's DNA or fibers taken from a known item can be compared to what's found at the scene to assess a match or exclusion. A control is used to verify that the testing process itself worked correctly, not to identify whether evidence came from the suspect. A standard is typically an instrument calibration or a reference material used to ensure measurements are accurate, rather than a direct source comparison. An exemplar might be a typical sample used for general comparison, but the established term for the case-specific baseline source is reference sample.

6. How does the Frye standard differ from Daubert?

- A. Frye requires general acceptance in the relevant field.**
- B. Frye is more flexible and evidence-based than Daubert.**
- C. Frye applies only to digital evidence.**
- D. Daubert is the more flexible, evidence-based gatekeeping standard.**

When evaluating whether expert testimony is scientifically reliable, the focus is on how admissibility is judged. The Frye approach centers on general acceptance in the relevant scientific community; if a method isn't broadly accepted, it's excluded even if it has some support. This creates a rigid standard that doesn't examine the details of how the method works or its error rates, just whether enough experts in the field accept it. Daubert, by contrast, gives judges a gatekeeping role to assess reliability using a flexible, evidence-based framework. It looks at whether the method can be tested, whether it has been subjected to peer review and publication, the known or potential error rates, and whether there are standards controlling its use, among other factors. Importantly, general acceptance isn't the sole criterion; newer or evolving techniques can be admitted if their reliability is demonstrated. So the better description is that Daubert is the more flexible, evidence-based gatekeeping standard, whereas Frye's requirement of general acceptance is the criterion that makes Frye feel more rigid. This is why Daubert largely replaced Frye in many courts, though some jurisdictions still apply Frye to certain types of evidence.

7. How do rifling characteristics differ from striations on a bullet?

- A. Rifling characteristics are the overall pattern from lands and grooves; striations are microscopic marks from the barrel surface**
- B. Rifling characteristics are microscopic marks; striations are the overall pattern
- C. Both are identical marks
- D. Rifling characteristics relate to primer marks; striations relate to extractor marks

In firearm forensics, you'll look at two scales of marks on a bullet: rifling characteristics and striations. Rifling characteristics come from the barrel's lands and grooves and form the macro, overall pattern you can observe on the bullet—the arrangement, number of lands and grooves, their width, and the direction of twist. Striations are microscopic, fine scratches created by the roughness and imperfections of the bore's surface as the bullet travels through it, producing narrowly spaced marks that run along the bullet's length. The key idea is that the broad, distinctive pattern from the lands and grooves identifies the general rifling style of a firearm, while the tiny, microscopic striations add individual detail tied to the bore's exact surface condition. This makes the statement correct: rifling characteristics are the overall pattern from lands and grooves, and striations are microscopic marks from the barrel surface.

8. Which statement about interpreting DNA evidence with a likelihood ratio is accurate?

- A. A high LR means stronger support for the non-contributor hypothesis.
- B. LR is a simple count of matching alleles.
- C. LR is the probability that the data were observed given a random match.
- D. A high LR means the data are more supportive of the contributor hypothesis than the non-contributor hypothesis.**

In interpreting DNA evidence with a likelihood ratio, you're comparing how probable the observed DNA data are under two competing explanations: that the person of interest contributed the DNA versus that someone else did (the non-contributor hypothesis). The likelihood ratio is the probability of the data given the contributor hypothesis divided by the probability of the data given the non-contributor hypothesis. A high LR means the observed data are much more likely if the contributor hypothesis is true than if the non-contributor hypothesis is true, so the data support the contributor hypothesis over the non-contributor one. That's exactly what the statement expresses. LR is not simply a count of matching alleles; it's a ratio of probabilities conditioned on two hypotheses. Nor is it the probability of the data under a single "random match" scenario. The LR encapsulates how much more (or less) the data favor one hypothesis over the other.

9. Which item is listed as evidence collected from the victim that relates to gunshot residue?

- A. Victim's clothing**
- B. Fingernail scrapings**
- C. Hand swabs (gunshot residue)**
- D. Hair samples**

Gunshot residue testing focuses on particles that travel from a fired cartridge primer and can settle on the shooter's hands. Collecting material from the hands with swabs provides the most direct evidence of contact with a firearm, because it targets the surface where residue would be deposited during firing or handling a weapon. The presence of residues such as the characteristic elements detected in GSR testing supports that the victim had recent firearm contact. Clothing can also carry residues, but it doesn't pinpoint direct hand contact with the weapon. Fingernail scrapings and hair samples are less specific to immediate firearm contact and are not the standard method for establishing gunshot residue on the victim.

10. Mitochondrial DNA is inherited from which parent?

- A. Mother**
- B. Father**
- C. Both parents**
- D. None**

Mitochondrial DNA is inherited from the mother. Mitochondria come from the egg's cytoplasm, and after fertilization the sperm's mitochondria are typically degraded, so the offspring's mitochondrial genome is essentially a copy of the mother's. This maternal inheritance is why mtDNA is used to trace maternal lineages in forensic and evolutionary contexts. Rare paternal leakage can occur, but it's extremely uncommon and not relied upon in standard analyses. The other options don't fit because the father does not pass mtDNA to the child, nuclear DNA comes from both parents while mtDNA is matrilineal, and there is a parent who provides mtDNA—the mother.

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://forensicscrimescene.examzify.com>

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

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