

# Evidence Technician Exam (Sample)

## Study Guide



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**SAMPLE**

## **Questions**

- 1. What defines impression evidence in forensic analysis?**
  - A. An object's weight**
  - B. Materials that retain characteristics of other objects**
  - C. Digital prints from devices**
  - D. Visual observation evidence**
- 2. What is a concentric fracture in broken glass?**
  - A. A pattern forming a rough circle around the point of impact**
  - B. A pattern that extends outward from the point of impact**
  - C. A random scattering of cracks**
  - D. A crack that forms a straight line**
- 3. What is the main effect of using a shallow depth of field?**
  - A. All elements in the image are in focus**
  - B. Only specific subjects are in focus while the background is blurred**
  - C. The image appears overly dark**
  - D. The image captures more light than necessary**
- 4. Direct Evidence is characterized by:**
  - A. Information needing further explanation**
  - B. Going directly to the question at hand**
  - C. Indirect inferences**
  - D. Being reliant on circumstantial events**
- 5. Which characteristic might help identify a volatile liquid during an investigation?**
  - A. High viscosity**
  - B. Low evaporation rate**
  - C. Strong odor**
  - D. Solid state**

- 6. What type of evidence is typically the most straightforward to present in court?**
- A. Circumstantial Evidence**
  - B. Direct Evidence**
  - C. Forensic Evidence**
  - D. Documentary Evidence**
- 7. What are the raised areas between grooves in a gun barrel called?**
- A. Grooves**
  - B. Lands**
  - C. Ridges**
  - D. Fins**
- 8. What information can a 'crook' provide to investigators at an accident scene?**
- A. The speed of the vehicle during the accident**
  - B. The position of the tire at the onset of a collision**
  - C. The direction the vehicle was traveling**
  - D. The type of vehicle involved in the accident**
- 9. What does pyrolysis refer to in a fire context?**
- A. Combustion of materials**
  - B. Decomposition from heat**
  - C. Spontaneous ignition**
  - D. Chemical reaction with fire**
- 10. What does the nature of the weapon refer to in blood spatters?**
- A. The specific brand of the weapon used**
  - B. The characteristics of the instrument that inflicted harm**
  - C. The length of the weapon**
  - D. The weight of the weapon used**

## **Answers**

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

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## **Explanations**

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## 1. What defines impression evidence in forensic analysis?

- A. An object's weight
- B. Materials that retain characteristics of other objects**
- C. Digital prints from devices
- D. Visual observation evidence

Impression evidence in forensic analysis is defined as materials that retain characteristics of other objects, which includes impressions made by shoes, tires, or tools on soft surfaces like soil or carpet. When these items make contact with a surface, they leave behind unique markings that can be analyzed for comparison to known samples. This form of evidence is critical in forensics because it can link a suspect to a crime scene or corroborate witness accounts. These impressions can capture details such as the tread pattern of a shoe, a tire tread, or tool marks that can uniquely identify the object that made the impression. The distinctive characteristics are often used to establish connections between the object and the crime scene. Other options, like weight, digital prints, or visual observation, do not encapsulate the defining feature of impression evidence, which is its ability to preserve and convey the unique characteristics left by physical objects.

## 2. What is a concentric fracture in broken glass?

- A. A pattern forming a rough circle around the point of impact**
- B. A pattern that extends outward from the point of impact
- C. A random scattering of cracks
- D. A crack that forms a straight line

A concentric fracture in broken glass is characterized by a pattern that forms a rough circle around the point of impact. This type of fracture occurs as the glass responds to the stresses produced by an impact, leading to circular cracks that expand from the periphery towards the center. It often accompanies radial fractures, which extend outward from the point of impact, but unlike radial fractures, concentric fractures clearly indicate the area of the initial contact in a circular fashion. This type of fracture can be important in forensic analysis as it can help investigators determine the direction and force of the impact, as well as the nature of the object that caused the breakage. Understanding these patterns is crucial for reconstructing incidents where glass breakage is involved.

### 3. What is the main effect of using a shallow depth of field?

- A. All elements in the image are in focus
- B. Only specific subjects are in focus while the background is blurred**
- C. The image appears overly dark
- D. The image captures more light than necessary

A shallow depth of field primarily allows photographers to isolate a specific subject within an image, rendering the subject in sharp focus while simultaneously blurring the background and sometimes foreground. This technique draws the viewer's attention directly to the subject, enhancing its prominence and creating a more immersive experience. This effect is particularly useful in portraits, where the goal is often to emphasize the individual by minimizing distractions from other elements in the scene. The blurred background not only reduces visual clutter but can also create an aesthetically pleasing bokeh effect, contributing to the artistic quality of the photograph. This intentional focus on the subject versus the blurred surroundings is a hallmark of shallow depth of field photography. In contrast, the other choices describe effects that are characteristic of different photographic techniques or conditions. For instance, having all elements in focus corresponds to a greater depth of field, typically achieved by using smaller apertures. Similarly, an overly dark image or capturing more light than necessary pertains to exposure settings and lighting conditions, which are unrelated to the concept of depth of field.

### 4. Direct Evidence is characterized by:

- A. Information needing further explanation
- B. Going directly to the question at hand**
- C. Indirect inferences
- D. Being reliant on circumstantial events

Direct evidence is characterized by its ability to directly answer a question or support a claim without the need for further inference or interpretation. This type of evidence provides straightforward and clear information that connects directly to the matter at hand. For example, eyewitness testimony about an event that they personally witnessed serves as direct evidence because it supports or contradicts a fact without requiring additional assumptions or interpretations. In contrast, the other options involve some form of interpretation, inference, or reliance on additional context. Information needing further explanation implies that the evidence is not immediately clear, while indirect inferences and circumstantial events suggest that the evidence relies on implications rather than direct observation. Overall, the defining characteristic of direct evidence is its immediacy and clarity in addressing the question or claim directly.

**5. Which characteristic might help identify a volatile liquid during an investigation?**

- A. High viscosity**
- B. Low evaporation rate**
- C. Strong odor**
- D. Solid state**

A strong odor is a characteristic that can help identify a volatile liquid during an investigation. Volatile liquids are substances that have a tendency to vaporize or evaporate quickly at room temperature, which often leads to the release of vapors that can have distinct odors. These odors may be detectable and can assist investigators in recognizing the presence of specific volatile compounds, which might be relevant to the context of the investigation, such as potential arson cases or the presence of hazardous materials. On the other hand, characteristics like high viscosity and low evaporation rate are typically associated with non-volatile or less volatile substances, which do not readily produce vapors. Additionally, a solid state is not relevant in identifying a liquid; volatile liquids must be in a liquid state to be classified as such, as their defining characteristic is their ability to vaporize. Thus, the strong odor associated with volatile liquids is a key indicator that can aid in their identification during forensic investigations.

**6. What type of evidence is typically the most straightforward to present in court?**

- A. Circumstantial Evidence**
- B. Direct Evidence**
- C. Forensic Evidence**
- D. Documentary Evidence**

Direct evidence is considered the most straightforward to present in court because it directly links a defendant to the crime without any need for inference or presumption. This type of evidence includes eyewitness testimony or a confession, where someone personally observed an event or has firsthand knowledge of the facts. Since it does not rely on circumstantial factors or require the jury to make connections between pieces of evidence, it tends to be more compelling and easier to understand. For instance, if a witness testifies that they saw the defendant commit a crime, this testimony provides direct proof of the defendant's involvement, allowing the jury to make a clear judgment based on that information alone. Such characteristics make direct evidence very powerful in legal proceedings, as it adds a straightforward narrative to the case without ambiguity.

**7. What are the raised areas between grooves in a gun barrel called?**

- A. Grooves**
- B. Lands**
- C. Ridges**
- D. Fins**

The raised areas between the grooves in a gun barrel are referred to as lands. These lands are an essential part of the rifling within the barrel, which is designed to impart spin to the bullet as it travels down the barrel, improving accuracy and stability in flight. The grooves and lands work together to create the necessary spin, with the grooves being the recessed areas where the bullet passes through, and the lands being the raised sections that grip the bullet. The presence of lands is crucial for the identification of firearms and for forensic ballistics, as the specific pattern of lands and grooves can be unique to the manufacturer's design, helping to link a bullet to its originating firearm. Understanding the concept of lands is fundamental for anyone working in evidence collection and analysis in relation to firearms.

**8. What information can a 'crook' provide to investigators at an accident scene?**

- A. The speed of the vehicle during the accident**
- B. The position of the tire at the onset of a collision**
- C. The direction the vehicle was traveling**
- D. The type of vehicle involved in the accident**

The position of the tire at the onset of a collision can offer significant insight into the dynamics of the accident. This information is crucial as it helps investigators determine factors such as the angle of impact, braking patterns, and any evasive maneuvers that may have been attempted. By analyzing the tire position, investigators can reconstruct the events leading up to the collision, assess the forces involved, and determine the contributions each vehicle made to the accident. Additionally, this detail assists in establishing a timeline and clarifying the sequence of events, which is essential for understanding how the accident occurred. On the other hand, while the other options may seem relevant, they typically rely more on the evidence at the scene or the statements of witnesses rather than a 'crook' themselves. For example, a 'crook' may not accurately recall or provide details about the speed of the vehicle or the direction it was traveling, as these require specific measurements or observations rather than subjective assertions. Similarly, while a 'crook' might have opinions about the type of vehicle, official identification and forensic analysis are often required to confirm this information. Thus, focusing on the position of the tire provides the most concrete and investigative value from the perspective of accident reconstruction.

**9. What does pyrolysis refer to in a fire context?**

- A. Combustion of materials**
- B. Decomposition from heat**
- C. Spontaneous ignition**
- D. Chemical reaction with fire**

In the context of fire science, pyrolysis refers specifically to the thermal decomposition of materials when exposed to heat in the absence of oxygen. During pyrolysis, organic materials break down into simpler substances, resulting in the production of gases, liquids, and solid residues known as char. This process is crucial in the understanding of fire behavior, as pyrolysis can generate flammable gases that may eventually ignite if they come into contact with an ignition source. Understanding pyrolysis is essential in forensic investigations and fire scene analysis, as it helps in determining how a fire may have developed and spread. The focus on the thermal decomposition aspect highlights the significance of heat as a catalyst for chemical changes, setting it apart from simple combustion, which involves the presence of oxygen and a flame.

**10. What does the nature of the weapon refer to in blood spatters?**

- A. The specific brand of the weapon used**
- B. The characteristics of the instrument that inflicted harm**
- C. The length of the weapon**
- D. The weight of the weapon used**

The correct answer centers on the characteristics of the instrument that inflicted harm. In blood spatter analysis, understanding the nature of the weapon involves examining its attributes, such as its shape, size, and the manner in which it produces wounds. These characteristics can provide significant insights into how the blood spatters were created, indicating the type of weapon that might have been used and the dynamics of the action that caused the bloodshed. For instance, a sharp object may produce a different blood pattern compared to a blunt object, not only in size and shape of the spatters but also in the distribution and presence of finer droplets. By assessing these characteristics, forensic analysts can deduce crucial information about the event and potentially reconstruct the circumstances surrounding it. Considering the other options, they may provide additional information about the weapon, such as its brand, length, or weight, but none encompass the broad spectrum of physical attributes that the term 'nature of the weapon' implies in the context of blood spatter analysis. Thus, the emphasis is rightly placed on the overall characteristics of the instrument itself, which is fundamental for accurate interpretation in forensic investigations.