

11.09.2024

QUESTIONED DOCUMENTS

PRACTICAL-1

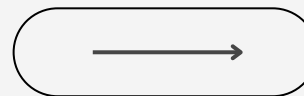
SHAIKH RAEESAH TASLEEM

Deputy Director
Truth Labs, Hyderabad





HANDLING OF DOCUMENTS

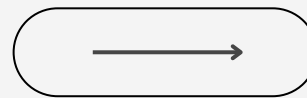


- Always use gloves.
- Document must always be kept unfolded.
- Store it in a separate folder.
- Avoid drinking beverage / eating food around the document.
- Scan the document and store its photocopy.
- Avoid touching the document frequently.
- Avoid pointing document with sharp objects.
- No test must be made to alter the conditions of the document.
- Store in shelf.



- Do not make additional markings.
- Avoid punching / stapling the document.
- Do not treat or dust the document for fingerprints.
- Do not place additional rubber stamps.
- Do not expose to direct sunlight.
- Only Experts must touch the documents.

HANDLING OF DOCUMENTS



TYPES OF TAMPERING

01

ALTERATIONS

02

OBLITERATION

03

SUPERIMPOSITION

04

ERASURES

05

OVERWRITINGS

06

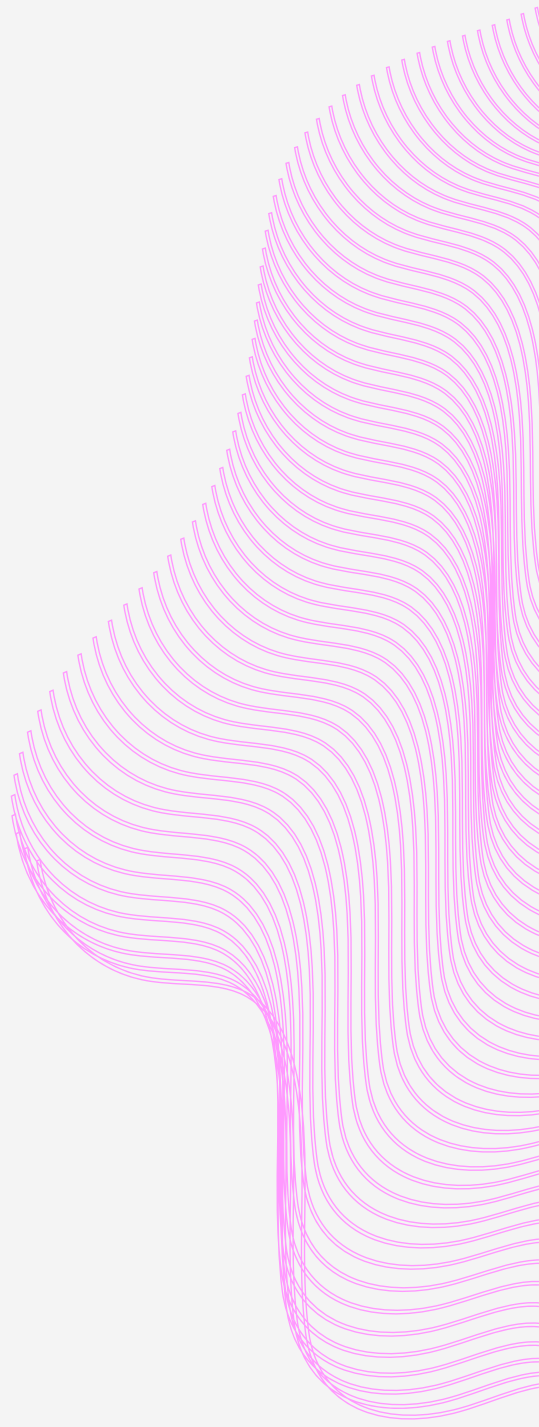
SECRET WRITINGS

07

INDENTED WRITINGS

08

DIFFERENCE IN TINT OF INK



TYPES OF TAMPERING

01

ALTERATIONS

Addition of contents in handwriting

02

OBLITERATION

covering the writings

03

SUPERIMPOSITION

Overlaying images

04

ERASURES

Deletion of writings
Chemical / Mechanical

05

OVERWRITINGS

Intentional / Un-intentional

06

SECRET WRITINGS

Writings invisible to naked eye

07

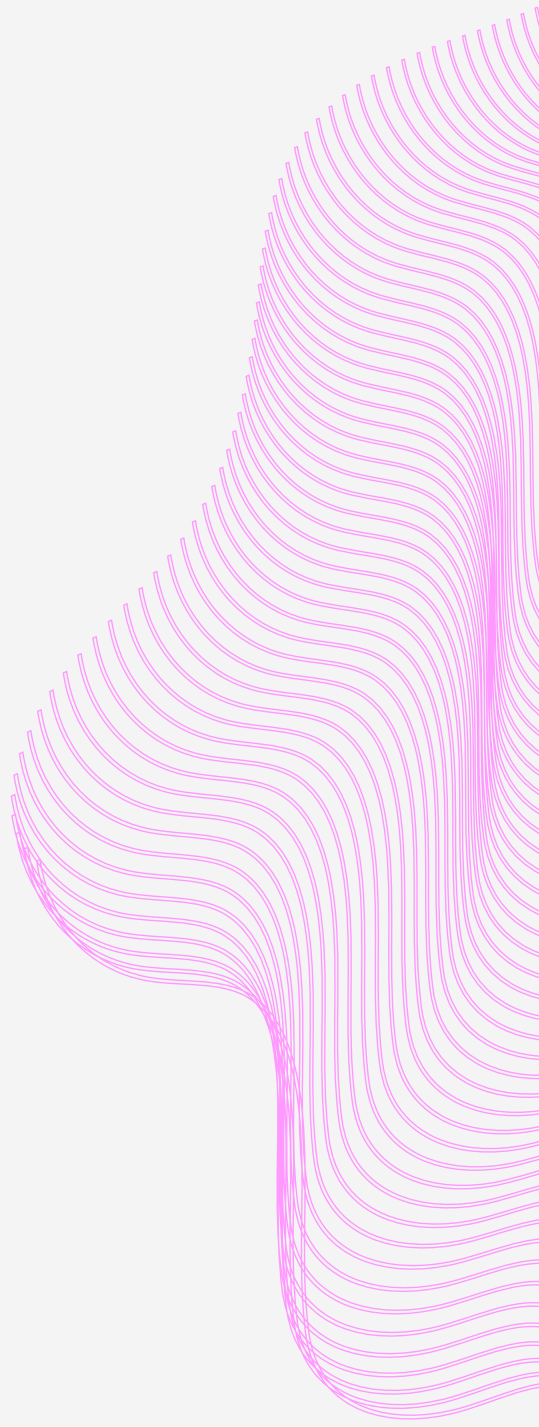
INDENTED WRITINGS

Second page writings

08

DIFFERENCE IN TINT OF INK

Difference in presence of pigments



ALTERATIONS

1. VISUAL INSPECTION

- Microscopy: Using a microscope to closely examine changes in ink, paper fibers, and handwriting. This helps identify differences in the texture and appearance of the altered and original text.
- Lighting Techniques: Observing the document under different lighting conditions, such as raking light (light angled across the surface), can reveal subtle differences in ink and paper.

2. IMAGING TECHNIQUES

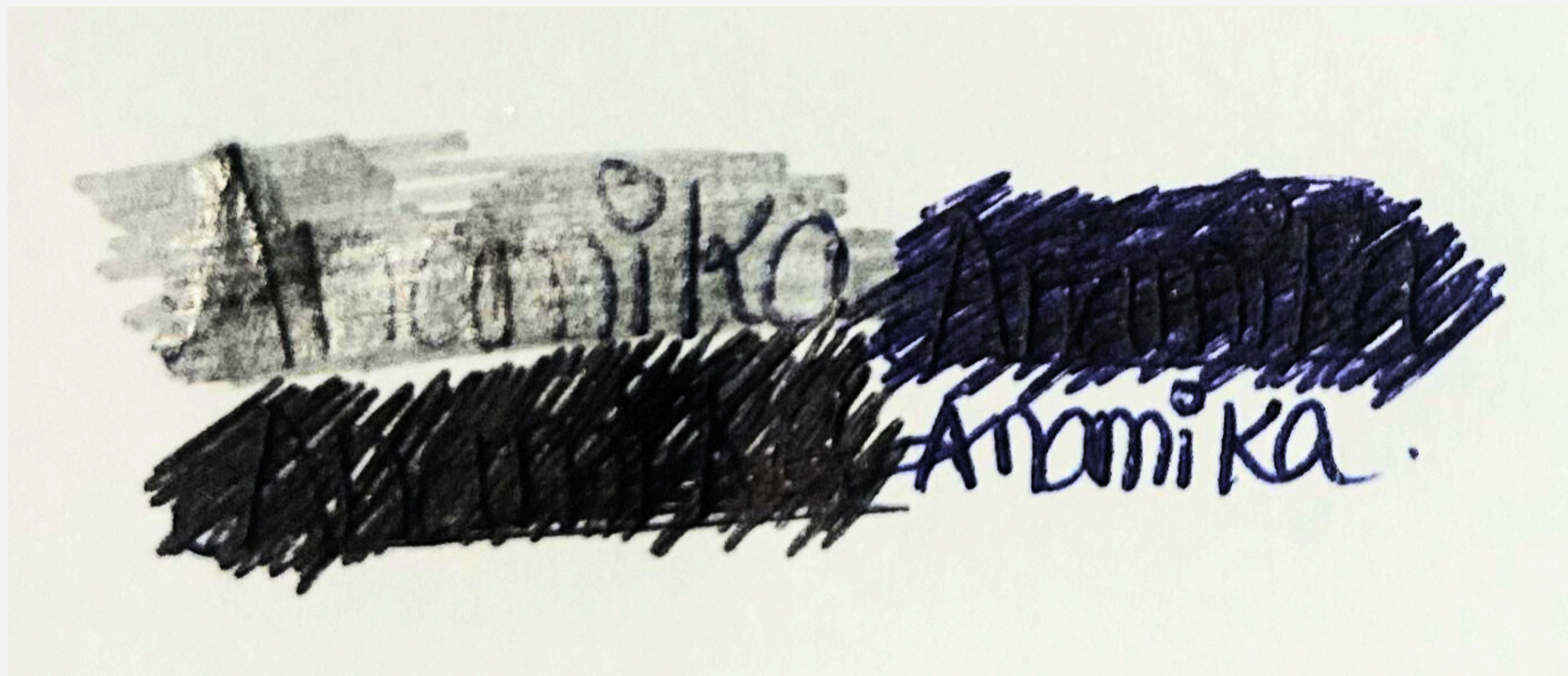
- Multi-Spectral Imaging: Capturing images at various wavelengths to reveal hidden details not visible to the naked eye. This can make alterations, different types of ink, or erased text more apparent.
- Infrared and Ultraviolet Light: Different inks and materials react differently to infrared and ultraviolet light, helping to reveal overwriting or erased content.

ALTERATIONS

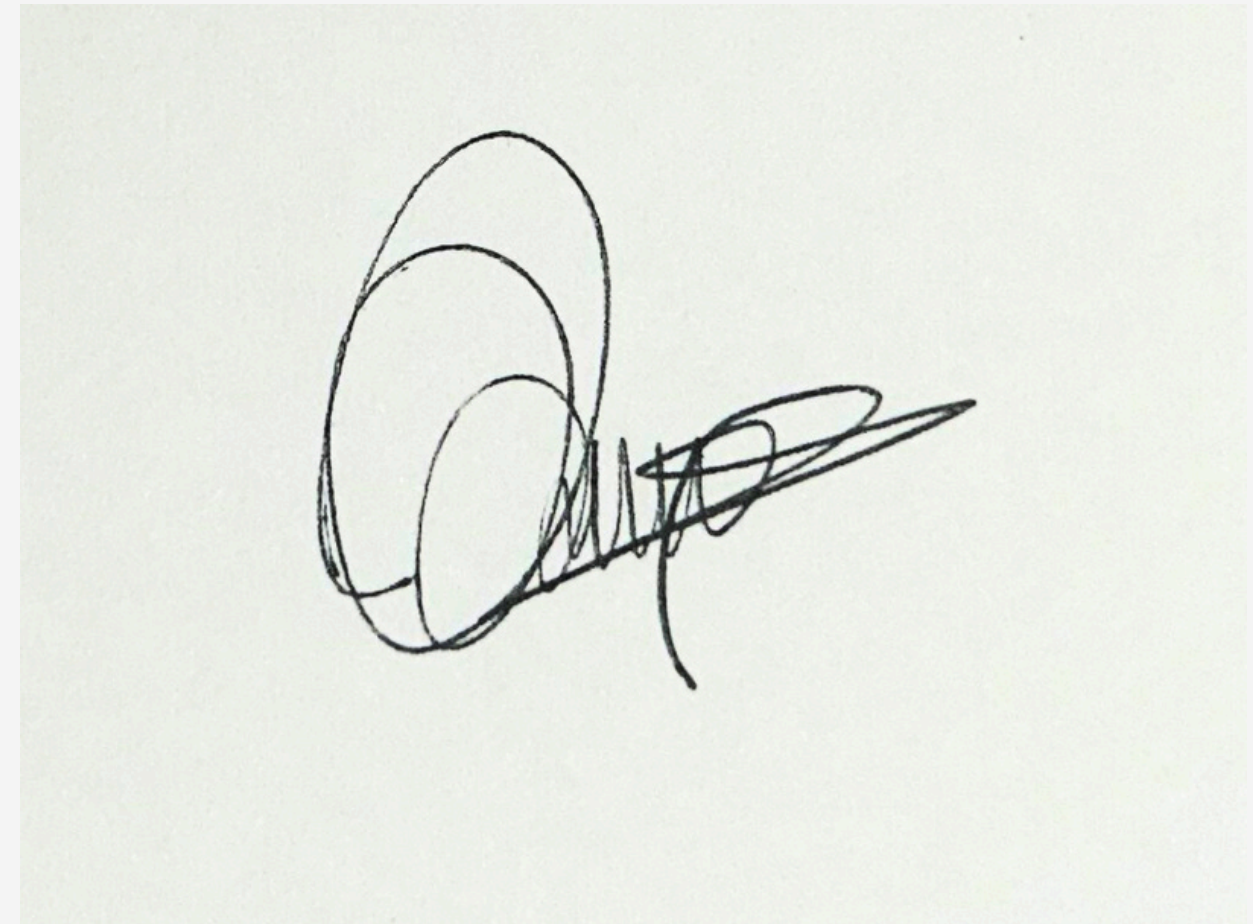
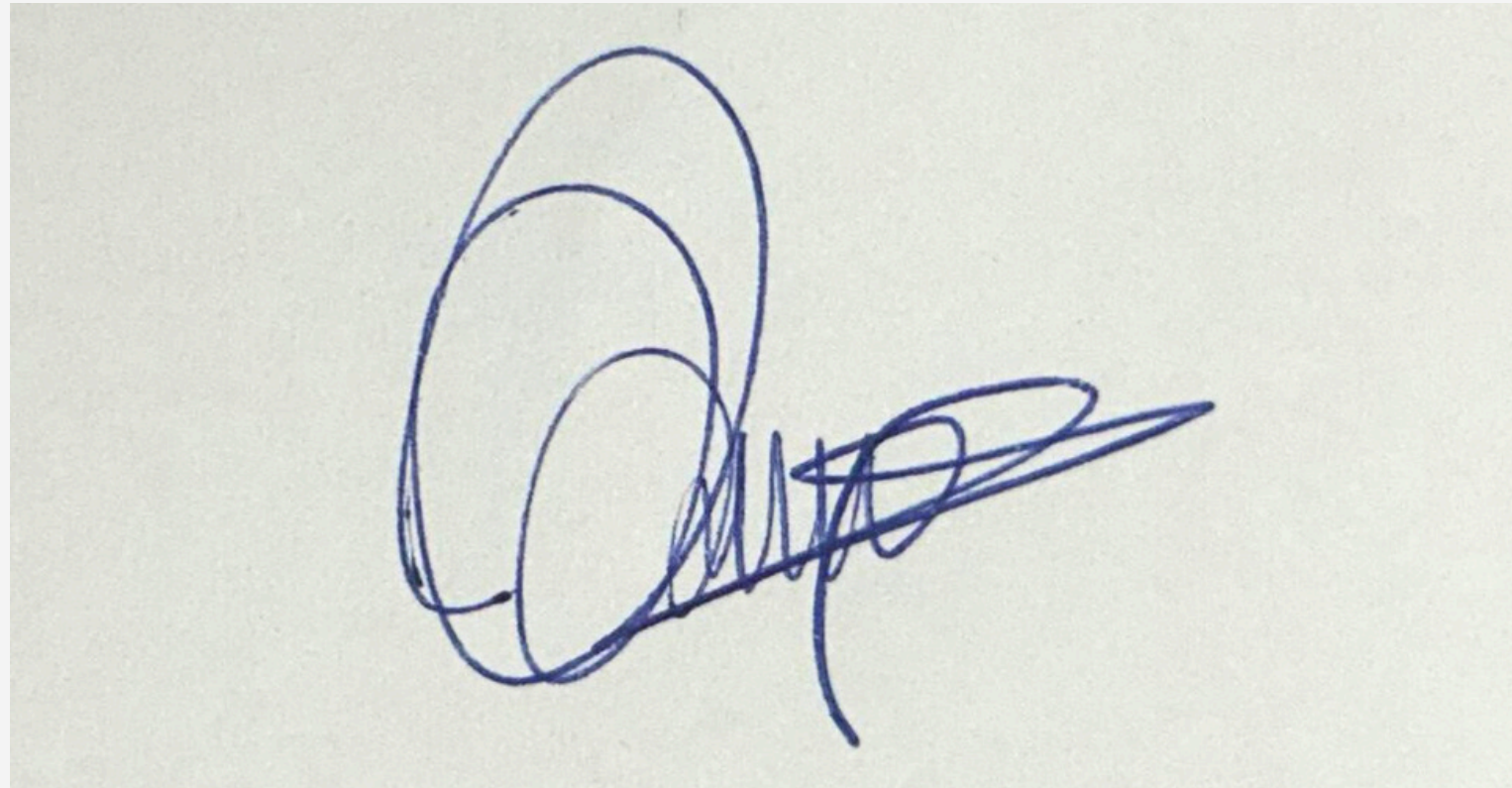
Hi! My name is Anamika.
I have always loved painting.
Since my childhood. I once
sold my painting for Rs. 90,000/-

02

OBLITERATIONS

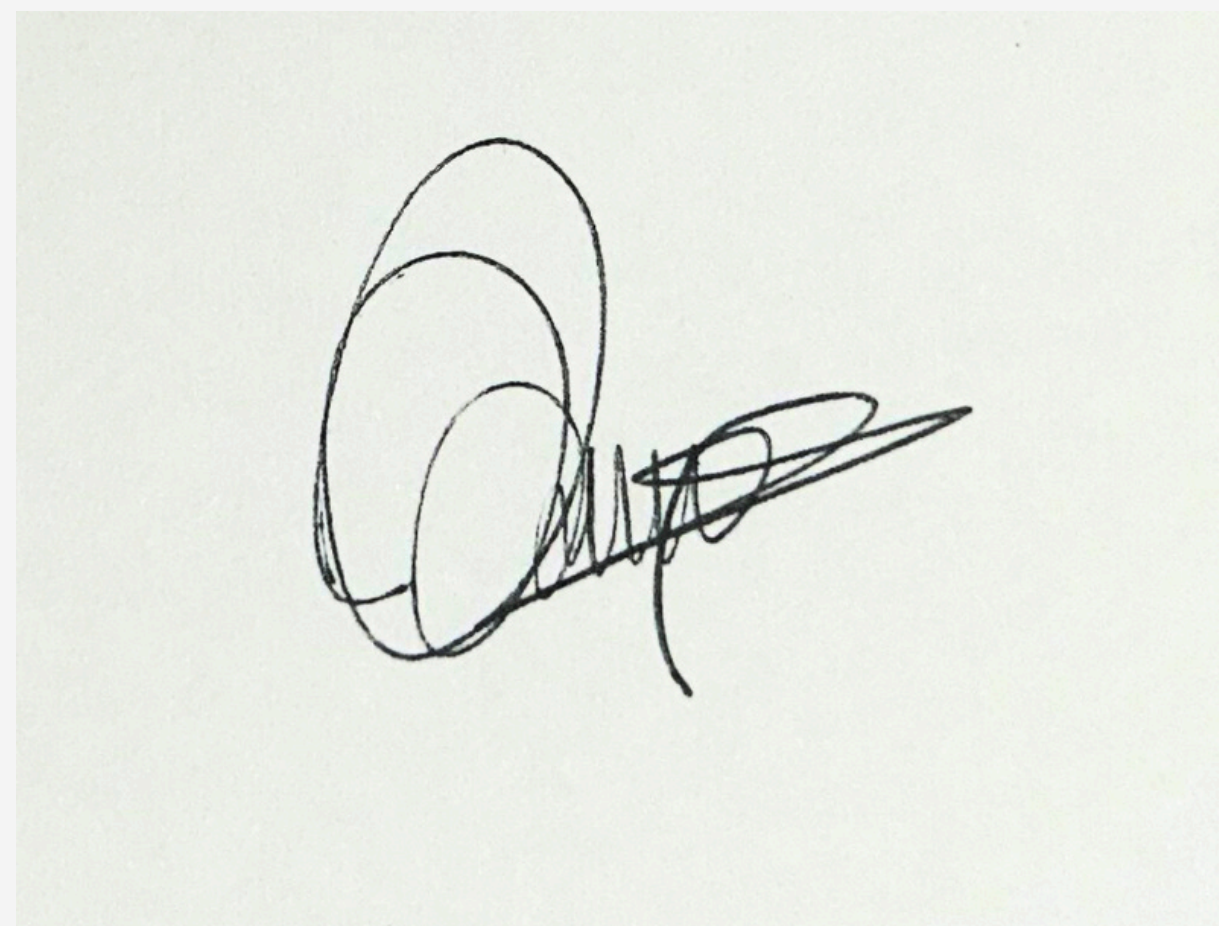
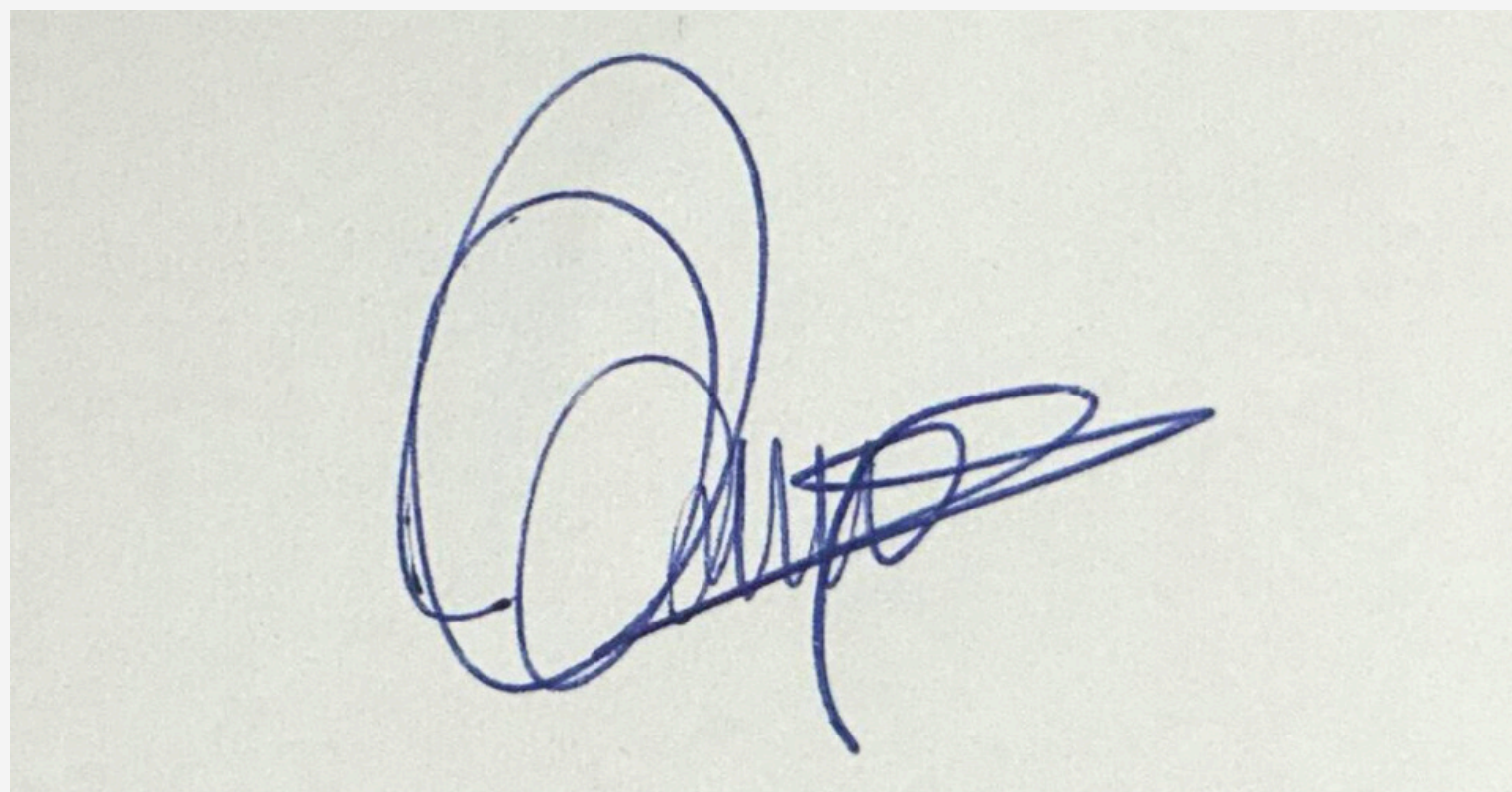


03



03

SUPERIMPOSITION



03

SUPERIMPOSITION



03

SUPERIMPOSITION



[Handwritten signature] 2020.10.06

President and CEO, Carrie Johnson

2020.10.05

ERASURES

1. MECHANICAL

Mechanical erasures involve physically removing or altering text from a document using mechanical means.

Methods:

- Erasers: Standard erasers, such as those used with pencils, can rub away ink or graphite from the surface of the paper.
- Scraping: Using sharp tools (e.g., knives or razor blades) to scrape off the text or ink.
- Burnishing: Rubbing a hard object on the document to flatten or distort the ink.

Characteristics:

- Physical Alterations: Mechanical erasures often leave visible signs of alteration, such as paper wear, fibers, or changes in the paper's texture.
- Ink Residue: In some cases, traces of the original ink may remain, making it possible to detect the erasure with proper techniques.
- Paper Damage: Mechanical erasures can damage the paper's surface, leading to changes in texture or visible scratches.

ERASURES

1. MECHANICAL

Forensic Detection:

- Microscopy: Examining the document under a microscope can reveal physical changes in the paper or residual ink.
- Lighting Techniques: Certain lighting conditions may highlight differences in paper texture or surface damage caused by mechanical erasure.
- Digital Imaging: High-resolution imaging can detect changes in the surface texture or residual marks.

ERASURES

2. CHEMICAL

Chemical erasures involve using chemical substances to dissolve or alter the ink or writing material on a document.

Methods:

- Solvents: Applying solvents or chemicals that dissolve ink, such as bleach or alcohol-based cleaners.
- Chemical Reactants: Using specific reagents that react with the ink to alter its appearance or make it invisible.
- Bleaching Agents: Chemicals that bleach out the ink or alter the color, making it less visible.

Characteristics:

- Chemical Interaction: Chemical erasures can change the color of the ink or paper, sometimes making it difficult to detect the original text.
- Minimal Physical Damage: These methods may not cause significant physical damage to the paper compared to mechanical erasures.
- Residual Traces: Depending on the chemical used, there may be residual traces or changes in the paper's composition.

ERASURES

2. CHEMICAL

Forensic Detection:

- Chemical Analysis: Using forensic techniques to analyze the chemical composition of the ink or paper, which can reveal residues or changes.
- Infrared and Ultraviolet Light: Certain chemicals may affect how ink reacts to different light wavelengths, revealing hidden alterations.
- Digital Imaging: Specialized imaging techniques may help in detecting changes in ink composition or color.

ERASURES

THINGS TO KEEP IN MIND!

- Examine the whole document.
- Comparison of line quality of writings.
- Examination of serial numbers to check for any irregularity.
- Comparison of width of pen-lines.
- Search for any discoloration.
- Examination of writing characteristics.
- Check for any stains.
- Spreading or running of ink.
- Paper fibre difference.
- Check for baseline of writings.

OVERWRITINGS

Intentional Overwriting:

- Corrections or Amendments: Adding new information or corrections over existing text, often done to update or revise the content.
- Forgery or Alteration: Intentionally changing or obscuring original content to deceive or alter the meaning of the document.

Unintentional Overwriting:

- Accidental Marks: New writing that overlaps with existing text due to careless handling or note-taking.

OVERWRITINGS

Challenges in Detecting Overwriting:

- Ink Similarity: If the same type of ink was used for both the original and overwritten text, it may be difficult to distinguish between the layers.
- Paper Damage: Overwriting can sometimes cause physical damage to the paper, complicating the analysis.
- Ink Absorption: The way ink absorbs into the paper can affect the ability to detect overwritten text.

Applications:

- Forgery Detection: Identifying unauthorized changes or additions to documents, such as contracts or legal agreements.
- Historical Document Analysis: Revealing changes or corrections in historical manuscripts or records.
- Fraud Investigations: Uncovering alterations in financial documents or identification papers.

Invisible writing refers to text or markings that are deliberately made to be hidden or not visible under normal viewing conditions. This technique can be used for various purposes, such as encoding secret messages, protecting sensitive information, or adding annotations that are intended to be revealed only under specific conditions. Here's an overview of invisible writing:

Types of Invisible Writing

1. Invisible Ink:

- **Chemical Inks:** Special inks that are not visible to the naked eye but can be revealed through chemical treatments, heat, or specific light sources. Common types include:
 - Sympathetic Inks: These inks are visible only when treated with a specific reagent or heat.
 - Thermochromic Inks: Change color with temperature variations, becoming visible when heated.
 - Fluorescent Inks: Visible only under ultraviolet (UV) light.

2. Steganography:

- **Hidden Messages:** Concealing a message within another message or medium. For example:
 - Textual Steganography: Embedding a secret message within the spacing, alignment, or formatting of regular text.
 - Digital Steganography: Hiding data within digital files, such as images or audio, where the hidden information is not easily detected.

SECRET WRITINGS

3. Redaction:

- Obscured Information: Using black bars or similar techniques to cover sensitive information in documents. Although not truly invisible, redacted text is hidden from view until the redaction is removed.

4. Watermarking:

- Embedded Marks: Including hidden information within the texture or pattern of paper that is only visible under certain conditions, such as light or water.

INDENDED WRITINGS

Indented writing consists of indentations or impressions that appear on a sheet of paper caused by pressure from writing or typing on the sheet above it. These indentations can reveal the content of the text that was written on the upper sheet.

How Indented Writing Occurs:

- Pressure Application: When a person writes or types on a sheet of paper, the pressure from the writing instrument or typewriter can create physical impressions on the paper below it. These impressions can sometimes be detected on multiple sheets stacked together.
- Paper Texture: The type of paper and writing instrument can affect the depth and visibility of the impressions.

TINT OF INK

What is Ink Tint?

- The tint of ink describes the specific color and shade of the ink. It is determined by the pigments or dyes used in the ink formulation and can vary widely in hue, saturation, and lightness.

Components of Ink Tint

1. Pigments or Dyes:

- Pigments: Solid particles that provide color by absorbing and reflecting light. They are suspended in a medium and generally offer more opacity.
- Dyes: Soluble substances that dissolve in the ink's solvent, providing color through absorption and reflection.

2. Ink Formulation:

- Base: The carrier liquid (such as water or oil) in which pigments or dyes are suspended or dissolved.
- Additives: Various chemicals that modify the ink's properties, such as drying time, viscosity, or stability.

1.	Green Ball Pen
2.	Blue Ball pen - 1
3.	Blue Ball pen - 2.
4.	Blue Gel Pen
5.	Black sketch Pen
6.	Black Ball pen.
7.	Pencil
8.	Red Ball pen
9.	Red colour pencil

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THANK YOU!

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Truth Labs, Hyderabad

