Board of
Forensic Document Examiners

Study Guide

General Knowledge Examination

and information on the performance exercises

Published for 2008 Examination

Board of Forensic Document Examiners

Study Guide: General Knowledge Examination

This guide has been prepared to help individuals direct their study for the written examination. The references selected are from publications, traditional reference books, and the works of selected authors that contain current research and/or information on a specific subject. We have generally not included papers distributed at conferences/seminars simply because they are not readily available to those who did not attend. However, if a presenter has given permission for distribution of copies to test applicants, then such papers may be used as references. It is not the Board's intention to establish any of the cited authors as authoritative; the general knowledge necessary to pass the written examination can be acquired from many other sources and from basic training in forensic document examination.

The scope of the examination is defined in the *Forensic Document Examiners Task Inventory*. This guide parallels the nine sections in the inventory so that individuals with limited time at their disposal can prioritize their study. The references are listed in alphabetical order, not in the order of importance. The same reference may be listed in more than one section, if the information is relevant to more than one topic.

All questions in the examination are multiple choice. Sample questions are provided at the end of each section. The questions encompass subjects and information used by forensic document examiners routinely or on occasion. We recommend that if an individual does not routinely deal with any one of the listed areas, then a review of the literature is in order.

Test development is a continual process. As questions are reviewed and updated to reflect current information, research and technology, additions (or deletions) will be made to the Study Guide. This edition reflects references for the test that will be administered in 2008.

Forensic Document Examiners Task Inventory

A. DEMONSTRATING DOCUMENT EXAMINER FOUNDATION SKILLS

1 Demonstrate Knowledge of Handwriting Methodology
2 Demonstrate Knowledge of Handwriting/Hand Printing Identification
3 Demonstrate Knowledge of Inks
4 Identify Various Writing Instruments
5 Demonstrate Knowledge of Fonts and Type Styles
6 Demonstrate Knowledge of Paper
7 Demonstrate Knowledge of Printing Devices
8 Demonstrate Knowledge of Forms and Letterhead (case relevant)
9 Demonstrate Knowledge of Comparative Analysis Techniques
10 Demonstrate Professionalism

B. GATHERING EVIDENCE

11 Maintain Chain of Custody (evidence handling)
12 Collect Standards of Comparison (handwriting/signature)
13 Collect Standards of Comparison (other media)
14 Verify Accuracy of Document Data
15 Analyze Document Formatting

C. ANALYZING HANDWRITING

16 Examine Cursive Writing (including signatures)
17 Examine Hand Printing (alpha and numeric)
18 Recognize Influences on Handwriting Skills
19 Identify Letter Design Influences
20 Recognize Disguised Handwritten Images
21 Examine Graffiti
22 Determine Line Sequence and Direction of the Writing Movement

D. ANALYZING FALSIFIED DOCUMENTS

23 Determine Document Altering Techniques
24 Identify Counterfeited/Fabricated Documents

E. ANALYZING FEATURES OF PAPER AND MEDIA

25 Identify Watermark Characteristics
26 Identify Types and Characteristics of Paper
27 Identify Physical Characteristics of Paper
28 Assess Production Characteristics of Paper
29 Assess Physical Condition of Paper (current)

F. ANALYZING IMPACT AND NON-IMPACT IMAGES

30 Analyze Copy Machine Images
31 Analyze Latent Images
32 Analyze Fax Images
33 Analyze Printer Images
34 Analyze Typewriter Images
35 Analyze Imaging Devices (i.e., rubber stamps, auto pens, embossing seals)
36 Analyze Non-Impact Pre-Print Images
37 Analyze Credit Card/Check Security Features

G. USING LAB INSTRUMENTS

38 Use Microscope and Magnifiers
39 Use Videospectrum Devices (such as infrared and ultraviolet - including filters)
40 Use Electrostatic Detection Device
41 Use Photography (Polaroid, digital, and 35mm)
42 Use Light Sources (including various filters)
43 Use Digital Image Equipment
44 Use Photocopier
45 Use Measuring Devices
46 Other Equipment (applicable to document problems)

H. EVALUATING EVIDENCE AND PRESENTING CASE FINDINGS

47 Evaluate Results of all Analyses Performed
48 Express Opinion/Assign Level of Certainty (e.g. know levels per ASTM standard)
49 Prepare Reports (verbal and written)
50 Prepare for Testimony (including exhibits)

I. DEMONSTRATING KNOWLEDGE OF LEGAL PROCEDURES

51 Define Legal Terminology
52 Demonstrate Knowledge of Types of Legal Proceedings
53 Recognize Legal Precedents (regarding document examination issues)

Section A — Document Examiner Foundation Skills

*"**A Sequential Multiple Approach to Determining the Relative Age of Writing Instruments**"*,
Richard L. Brunelle, International Journal of Forensic Document Examiners, Vol. 1, No. 2
April 1995

Classification and Identification of Modern Office Copiers, James H. Kelly (1983)
The American Board of Forensic Document Examiners

Chapter: Copying Processes
Chapter: Individual Characteristics

Code of Professional Responsibility
Board of Forensic Document Examiners

"Contemporary issues in forensic handwriting examination: a discussion of the key issues in the wake of te Starzecpyzel decision", Bryan Found and Doug Rogers
Journal of Forensic Document Examination, Vol. 8, 1995

Reporting Procedures

Detecting and Deciphering Erased Pencil Writing, Ordway Hilton (1991)
Charles C. Thomas, Publisher, Springfield, IL ISBN 0-398-05723-0

Chapter 2: Pencil Writing and How it is Erased
Chapter 5: Photographic Methods of Decipherment

"Documentation of forensic handwriting comparison and identification method: A modular approach", Bryan Found and Doug Rogers, Journal of Forensic Document Examination , Vol. 12

Module 3: The Determination of whether specimen and questioned entries are comparable
Module 6: The Assessing of Handwriting Complexity
Module 9: The Simulation Process
Module 10: Line Quality and Skill

"Dynamics of the Writing Movement: Physical Modelling and Practical Applications", H. J.J. Hardy
Journal of Forensic Document Examination, Vol. 5, 1992

Evidential Documents, James V. P. Conway (1959)
Charles C. Thomas, Publisher, Springfield, IL ISBN 0-398-00324-4

Chapter: Evidential Signatures
Chapter: The Identification of Handwriting
Chapter: Hand Printing and Numerals

Examination and Identification of Photocopies and Photocopiers, John S. Gorajczyk
23 AM JUR POF3d 621, Lawyers Cooperative Publishing, Rochester, NY

Section 5: Photocopy Process
Section 16: Photocopier Identification

Forensic Examination of Ink and Paper, Richard L. Brunelle and Robert W. Reed (1984)
Charles C. Thomas, Publisher, Springfield, IL ISBN 0-398-04935-1

Chapter 1: Introduction
Chapter 4: Writing Instruments: Definitions and Nomenclature
Chapter 8: The Forensic Examination of Inks
Chapter 9: The Dating of Ink
Chapter 12: Watermarks
Chapter 13: Methods for the Forensic Examination of Paper

Forensic Handwriting Identification: Fundamental concepts and principles, Ron N. Morris (2000)
Academic Press, San Diego, CA ISBN 0-12-507640-1

Chapter 1: The Physiology of Writing
Chapter 5: The Features of Writing
Chapter 6: Qualities of Writing
Chapter 8: Relative Speed of Writing
Chapter 12: Some General Observations About Handwriting Identification

Fundamentals of Document Examination, Edna W. Robertson (1991)
Nelson-Hall Co., Chicago, IL ISBN 0-8304-1238-7

Chapter 10: Primary Qualities and Characteristics of Handwriting
Chapter 14: Environmental Conditions that Affect Handwriting

Handwriting Identification: Facts and Fundamentals, Roy A. Huber and A. M. Headrick (1999)
CRS Press, Boca Raton, FL ISBN 0-8493-1285-X

Chapter 3: The Discrimination of Handwriting
Chapter 6: The Discrimination and Identification of Writing
Chapter 8: The Extrinsical Factors Influencing Handwriting
Chapter 9: The Intrinsical Variables of Handwriting

Identification of Handprinting and Numerals, Allan R. Keown (1994)
24 AM JUR POF3d 687, Lawyers Cooperative Publishing, Rochester, NY

C. Basic Printing and Number Construction

"Intra-individual changes in handwriting features dependingon handwriting velocity", Petra Halder-Sinn and Karin Funsch, Journal of Forensic Document Examination, Vol. 11, 1998

"Methodological Aspects of Handwriting Identification", H.J.J. Hardy
Journal of Forensic Document Examination, Vol. 8, 1995

Questioned Documents (Second Edition), Albert S. Osborn (1929)
Nelson-Hall Co., Publisher, Chicago, IL ISBN 0-88229-190-4

Chapter VIII: Movements, or Manner of Writing, Line Quality and Alignment in Writing
Chapter IX: Pen Position, Pen-Pressure, and Shading
Chapter XIII: Variation in Genuine Handwriting, pages 205-216

Questioned Documents: A Lawyer's Handbook, Jay Levinson, (2001)
Academic Press, Boca Raton, FL ISBN 0-12-445490-9

Chapter 3: Typewriters

Scientific Examination of Questioned Documents, Ordway Hilton (1982)
Elsevier North Holland , Inc., New York City, NY ISBN 0-444-00628-1
(same chapters in the 1993 edition)

Chapter 1: Preliminary Considerations
Chapter 2: Definition of Terms
Chapter 9: Identification of Signatures and Detection of Forgery

Stedman's Medical Dictionary (26th Edition), Williams & Wilkins, Baltimore, MD, 1995 (or equivalent)

Words relating to diagnostic conditions that affect handwriting
(e.g. agraphia, aphasia, dygraphia, dyslexia)

Suspect Documents, William R. Harrison (1958 - Second Edition 1966)
Sweet & Maxwell, London, England, Frederick A. Praeger,, New York, NY

Chapter: Chapter 9: Handwriting

"Temporal features of handwriting: challenges for forensic analysis", Arnold J.W.M.Thomassen and Gerard P. Van Galen, Journal of Forensic Document Examination, Vol. 10, 1997

Chapter 3: Writing Instruments used to prepare documents
Chapter 4: Alternations in Documents

"Touch-ups in authentic writing", Darlene Hennessy
Journal of Forensic Document Examination, Vol. 10, 1997

SAMPLE TEST QUESTIONS: Section A — Document Examiner Foundation Skills

(1) Complexity in handwriting is determined by

A. the number of times the pen changes directions.
B. the fullness of the curves.
C. the degree of angularity.
D. fluency.
E. the degree of variation in the slope/slant of writing.

(2) Which of the following steps is used in an ink comparison method to determine whether several in samples have the same formula?

A. Using a micro punch, samples of ink are extracted and dissolved in a solvent, then spotted on specially treated paper.
B. Using a razor, ink is carefully scraped from a sample and put into a sterile saline solution then spotted on specially treated paper.
C. Using a pipette, ink from a sample is drawn into the pipette and then put into a tray containing a silicone formula.
D. Micro samples of ink are lifted from the sample using a fuming method and then put into a tank containing a silicone formula.
E. Samples of ink are carefully smeared on a glass slide and examined under a microscope.

(3) Using a technique known as Thin Layer Chromatography to examine ink on several different documents requires collecting samples of the ink, and collecting samples of

A. the pens allegedly used in the writing.
B. similar inks.
C. the database identifiers for ink.
D. the paper.
E. no other samples are required, only ink samples.

(4) The Pica Pitch in millimeters is

A. less than 2.0mm
B. 2.35mm to 2.50mm
C. 2.50mm to 2.84mm
D. 2.85mm
E. Varies by machine but is more than 2.85.

(5) The ballpoint pen can be recognized by

A. the flat color of the ink and the way it absorbs into the high fibers of the paper.
B. the way the ink changes color as it dries.
C. the gloss of the ink and the way it catches the edges of the high fibers of the paper.
D. the lack of any indication of pressure.
E. the shading of the upstrokes

(6) Which of the following publications contains paper and watermark manufacturer's information?

A. Walden's ABC Guide
B. Thomas' Register of American Manufacturers
C. Philip's Paper Trade Directory of the World
D. Lockwood's Directory
E. Black's Directory

(Correct answers are at the end of the study guide)

Section B — Gathering Evidence

Evidential Documents, James V. P. Conway (1959)
Charles C. Thomas, Publisher, Springfield, IL ISBN 0-398-00324-4

Chapter: Evidential Signatures
Chapter: Handwriting Investigations
Chapter: Anonymous Letters

Examination and Identification of Photocopies and Photocopiers, John S. Gorajczyk
23 AM JUR POF3d 621, Lawyers Cooperative Publishing, Rochester, NY

Section 21: Taking of photocopy standards

Examination of Questioned Documents (Revised Edition), Ordway Hilton (1982)
Elsevier North Holland, New York, NY ISBM 0-444-00628-1
(same chapter in the 1993 edition)

Chapter 14: Preparation and Collection of Handwriting Standards

Forensic Handwriting Identification: Fundamental concepts and principles, Ron N. Morris (2000)
Academic Press, San Diego, CA ISBN 0-12-507640-1

Chapter 15: Obtaining Handwriting Samples

Forensic Signature Examination, Steven A. Slyter (1995)
Charles C. Thomas, Publisher, Springfield, IL ISBN 0-398-06541-1

Chapter 5: Materials for Comparison

Law of Disputed and Forged Documents, J. Newton Baker (1955 and 1971)
The Michie Company, Charlottesville, VA

Chapter VI: Standard of Comparison

Questioned Documents (Second Edition), Albert S. Osborn (1929)
Nelson-Hall Co., Publisher, Chicago, IL ISBN 0-88229-190-4

Chapter XVII: Simulated or Copied Forgeries

"The taking of handwriting samples in cases of claimed assistance in writing", Manfred Hecker
Journal of Forensic Document Examination, Vol. 1&2, 1988

The Scientific Examination of Documents: Methods and Techniques, David Ellen (1993 and 1997)
Taylor and Francis, Bristol, PA ISBN 0-7484-0580-1

Chapter 5: Handwriting—The Collection of Samples,

SAMPLE TEST QUESTIONS: Section B — Gathering Evidence

(1) The_____should always be considered a suspect when an anonymous note maligns an individual

A. the victim
B. the spouse of the victim
C. the ex-spouse(s) of the victim (if any)
D. the co-workers of the victim
E. the boss of the victim

(2) When handling evidence in a crime laboratory, the document examiner usually is required to

A. process the documents with ninhydred to develop any latent finger prints.
B. initial documents in an inconspicuous place.
C. staple the documents together to maintain their chronological sequence
D. staple a worksheet to the documents and describe the tests and procedurs applied to the documents.
E. minimize handling by using the automatic document feeder on the photocopier when making file copies.

(3) In examining a guided hand signature, it is important to have the writing of the guider for comparison because

A. if the writer is passive, the signature will contain characteristics of the guider.
B. if the writer is active, the signature will contain characteristics of the guider.
C. the guider's writing always controls the pen movement.
D. the writing will be more consistent with the natural speed of the guider.
E. there is no reason to obtain the writing of the guider.

(4) Collected standards

A. are least suitable for writer identification.
B. are written in the course of business or personal affairs.
C. are dictated by an investigator.
D. contain the exact words as the questioned material.
E. are obtained under duress.

(Correct answers are at the end of the study guide)

Section C — Analyze Handwriting

"Changes in a forgers handwriting pressure related to original writer's dynamics, Jodi C. Sita and Doug Rogers, Journal of Forensic Document Examination, Vol. 12, 1999

"Documentation of forensic handwriting comparison and identification method: A modular approach", Bryan Found and Doug Rogers, Journal of Forensic Document Examination, Vol. 12, 1999

Module 6: The Assessing of Handwriting Complexity
Module 9: The Simulation Process

"Dynamics of the Writing Movement: Physical Modelling and Practical Applications", H. J.J. Hardy Journal of Forensic Document Examination, Vol. 5, 1992

Evidential Documents, James V. P. Conway (1959)
Charles C. Thomas, Publisher, Springfield, IL ISBN 0-398-00324-4

Chapter: Evidential Signatures

Forensic Handwriting Identification: Fundamental concepts and principles, Ron N. Morris (2000)
Academic Press, San Diego, CA ISBN 0-12-507640-1

Chapter 1: The Physiology of Writing

Forensic Signature Examination, Steven A. Slyter (1995)
Charles C. Thomas, Publisher, Springfield, IL

Chapter 2: Signatures
Chapter 3: Elements of Comparison

Fundamentals of Document Examination, Edna W. Robertson (1991)
Nelson-Hall Co., Chicago, IL ISBN 0-8304-1238-7

Chapter 14: Environmental Conditions that Affect Handwriting
Chapter 15: Internal Conditions that Affect Handwriting
Chapter 10: Primary Qualities and Characteristics of Handwriting

"Handwriting and signatures of the visually impaired", Tull, Pat
Journal of Forensic Document Examination , Vol. 5, 1992

Handwriting Identification: Facts and Fundamentals, Roy A. Huber and A. M. Headrick (1999)
CRS Press, Boca Raton, FL ISBN 0-8493-1285-X

Chapter 2: A Handwriting Compendium for Document Examiners
Chapter 3: The Discrimination of Handwriting
Chapter 6: The Discrimination and Identification of Writing
Chapter 8: The Extrinsical Factors Influencing Handwriting
Chapter 9: The Intrinsical Variables of Handwriting

Identification of Handprinting and Numerals, Allan R. Keown (1994)
24 AM JUR POF3d 667, Lawyers Cooperative Publishing, Rochester, NY

"Intra-individual changes in handwriting features depending on handwriting velocity", Petra Halder-Sinn and Karin Funsch, Journal of Forensic Document Examination, Vol. 11, 1998

Law of Disputed and Forged Document, J. Newton Baker (1955, Second Printing 1971)
The Michie Company, Charlottesville, VA ISBN

Chapter XVI: Mental Condition Indicated by the Character of Handwriting

"Light and Electron Microscopy Approaches to Sequence of Writing Problems,
Joseph G. Barabe, et al, Journal of Forensic Document Examination, Vol. 9, 1996

"Methodological Aspects of Handwriting Identification", H.J.J. Hardy
Journal of Forensic Document Examination, Vol. 8, 1995

"Multiple Sclerois and its effect on handwriting", Patricia Girouard
Journal of Forensic Document Examination, Vol. 13, 2000

"Parkinson's disease and graphic disturbances", Vickie L. Willard
Journal of Forensic Document Examination, Vol. 10, 1997

Questioned Documents (Second Edition), Albert S. Osborn (1929)
Nelson-Hall Co., Publisher, Chicago, IL ISBN 0-88229-190-4

Chapter VIII: Movements, or Manner of Writing, Line Quality and Alignment
Chapter XIII: Variation in Genuine Writing

Scientific Examination of Questioned Documents, Ordway Hilton (1982)
Elsevier North Holland , Inc., New York City, NY ISBN 0-444-00628-1
(same chapter in the 1993 edition)

Chapter 9: Identification of Signatures and Detection of Forgery

Stedman's Medical Dictionary (26th Edition), Williams & Wilkins, Baltimore, MD, 1995 (or equivalent)

Words relating to diagnostic conditions that affect handwriting (e.g. agraphia, aphasia, dygraphia, dyslexia)

Suspect Documents, William R. Harrison (1958 - Second Edition 1966)
Sweet & Maxwell, London, England, Frederick A. Praeger,, New York, NY

Chapter 10: Disguise
Chapter 11:Forged Signatures (Deficiencies in signatures caused by ill-heath)

"Temporal features of handwriting: challenges for forensic analysis", Arnold J.W.M.Thomassen
Gerard P. Van Galen, Journal of Forensic Document Examination, Vol. 10, 1997

"The objective static analysis of spatial erros in simulation", Bryan Found, Doug Rogers and
Hermann Metz, Journal of Forensic Document Examination, Vol 12, 1999

The Scientific Examination of Documents: Methods and Techniques, David Ellen (1993 and 1997)
Taylor and Francis, Bristol, PA ISBN 0-7484-0580-1

Chapter 3: Handwriting: accidental and deliberate modification of handwriting,
Chapter 4: The purposes and principles of scientific examination,

"The taking of handwriting samples in cases of claimed assistance in writing", Manfred Hecker
Journal of Forensic Document Examination, Vol. 1&2, 1988

"The Effects of Alterations to Documents", Steven A. Slyter (1995)
29 AM JUR POF 3d 549, Lawyers Cooperative Publishing, Rochester, NY

"Touch-ups in authentic writing", Darlene Hennessy
Journal of Forensic Document Examination, Vol. 10, 1997

SAMPLE TEST QUESTIONS: Section C — Analyze Handwriting

(1) The widest range of natural variation can be found in writing

A. produced by elderly people.
B. that is simple and controlled.
C. known as bubble writing.
D. that is naturally complex and written quickly.
E. that is not generally considered complex.

(2) The term "static trace" references to which ONE of the following?

A. The indentations that are left after an electrostatic detection test.
B. A line left when a person attempts to trace a signature.
C. All the components of handwriting.
D. The writing that remains on the writing surface.
E. Writing that results from using a digitizer.

(3) Which is the MORE accurate statement about a traced signature?
A traced signature

A. contains evidence of the writing habits of the person who traced it.
B. contains no evidence that would suggest it has been traced.
C. is written the same speed as the genuine signature.
D. does not contain the writing habits of the person who traced it.
E. can be identified as a tracing without locating the model signature.

(4) The writing of a left-handed person will be

A. written more slowly than the writing of a right-handed person.
B. of poorer quality than the writing of a right-handed person.
C. smudged in appearance when compared to writing of a right-handed person.
D. more often slanting to the left than the writing of a right-handed person.
E. no different in quality from the writing of a right-handed person.

(5) Research has indicated that if a signatory is active in a guided or assisted hand situation, the writing generally will

A. reflect mainly the writing impulses of the signatory.
B. reflect mainly the writing impulses of the guider.
C. reflect equally the writing impulses of the subject writer and the guider
D. be undetermined as to whose impulses are reflected.
E. be illegible.

(6) Studies of the effect of writing speed by Halder-Sinn and Funsch found which of the following changes in handwriting?

A. Tremor increased significantly with acceleration.
B. Length of retraced lines increased significantly with acceleration.
C. Deformed (illegible) letter structures increased significantly with acceleration.
D. Pen lifts increased significantly with acceleration in the majority of writers.
E. Pen lifts decreased significantly with acceleration in the majority of writers.

(7) The best way to observe line sequence of ink and laser print is with

A. high intensity light at a 45-degree angle to the document
B. reflected bright field coaxial light
C. oblique (grazing) light at a very low angle
D. transmitted halogen light
E. polarized light

(8) Multiple freehand simulations of a signature made by one person will be

A. generally consistent with one another
B. exactly the same from one sample to the other
C. tremulous and shaky
D. distorted and clumsy
E. identifiable to the writer

(9) Micrographia

A. is related to the handedness of the writer.
B. does not affect the identifying characteristics of the writing.
C. only affects men.
D. can be found in 23% of the population over 65 yrs.
E. is usually outgrown by the late teen years.

(Correct answers are at the end of the study guide)

Section D — Analyze Falsified Documents

Detecting and Deciphering Erased Pencil Writing, Ordway (1991)
Charles C. Thomas, Publisher

Chapter 3: Has there been an erasure?

"***Distinguishing Between Relative Ink Age Determinationsand the Accelerated Aging Techniques"***,
Larry F. Stewart, et al., International Journal of Forensic Document Examiners, Vol. 2, No. 1, Jan/Mar 1996

Examination and Identification of Photocopies and Photocopiers, John S. Gorajczyk
23 AM JUR POF3d 621, Lawyers Cooperative Publishing, Rochester, NY

Forensic Examination of Ink and Paper, Richard L. Brunelle and Robert W. Reed (1984)
Charles C. Thomas, Publisher, Springfield, IL ISBN 0-398-04935-1

Chapter 1: Introduction
Chapter 8: The Forensic Examination of Inks
Chapter 9: The Dating of Ink

"Passport Forgeries - What to look for", Ernie Munden, et al.
International Journal of Forensic Document Examiners, Vol. 1, No. 3, July 1995,

Scientific Examination of Questioned Documents, Ordway Hilton (1982)
Elsevier North Holland , Inc., New York City, NY ISBN 0-444-00628-1
(same chapters in the 1993 edition)

Chapter 3: Instruments and Materials Used to Prepare Documents
Chapter 11: Typewriting

"Some observations on the morphology of a ball-point pen stroke", P.S. Hung, et al.
IJFDE, Vol. 1, No. 1, Jan 1995

Suspect Documents, William R. Harrison (1958 - Second Edition 1966)
Sweet & Maxwell, London, England, Frederick A. Praeger,, New York, NY

Chapter 10: Disguise

The Effects of Alternations to Documents, Steven A. Slyter
AM JUR POF3d 549, Lawyers Cooperative Publishing, Rochester, NY

The Scientific Examination of Documents: Methods and Techniques, David Ellen (1993 and 1997)
Taylor and Francis, Bristol, PA ISBN 0-7484-0580-1

Chapter 7: The materials of handwritten documents—substances and techniques,
Chapter 9: Incidental marks and other scientific examinations,

SAMPLE TEST QUESTIONS: Section D — Analyze Falsified Document

(1) One method used to determine if two printed copies were produced on the same offset plate would be to examine

A. the ink for trash marks.
B. for photographic dirt which was not removed from the negative.
C. the spacing patterns and alignment.
D. for dissimilarities between inks used in the printing process.
E. the paper weight and check for dissimilar watermarks.

(2) A rapid technique for separating the organic components of ink is known as

A. treated liquid chromatography.
B. thin layer chromatography.
C. thin liquid chromatography.
D. treated litho chromate.
E. trans liquid chromatography.

(3) The ballpoint pen was introduced to the American market in

A. 1935
B. 1940
C. 1945
D. 1950
E. 1955

(4) If entries were made on a document in January and the same pen was used to make entries in November, but backdated to January, which procedure would be used to determine if the back dating occured?

A. Infrared spectral scanning.
B. Thin layer chromatography.
C. Raman spectroscopy.
D. Gas chromatography.
E. The correct procedure is not listed.

(Correct answers are at the end of the study guide)

Section E — Analyzing Features of Paper and Media

"Determining the Sequence of Folds and Writing", Allan R. Keown
Journal of Forensic Document Examination , Vol. 6, 1993

Forensic Examination of Ink and Paper, Richard L. Brunelle and Robert W. Reed (1984)
Charles C. Thomas, Publisher, Springfield, IL ISBN 0-398-04935-1

Chapter 12: Watermarks
Chapter 13: Methods for Forensic Examination of Paper
Chapter 11: Partial Compendium of Paper Industry Terms
specifically, the kinds of paper/paper finishes encountered in business documents and terms relating to watermarks

Fundamentals of Document Examination, Edna W. Robertson (1991)
Nelson-Hall, Inc., Publisher, Chicago, IL ISBN 0-8304-1238-7

Chapter 20: Paper and Watermarks

SAMPLE TEST QUESTIONS: Section E — Analyzing Features of Paper and Media

(1) **Which of the following is a physical characteristics (property) of "safety paper"?**

A. Fireproof.
B. Extremely difficult to tear.
C. Sealed so it will not stain.
D. Embedded ink pattern.
E. Waterproof.

(2) **Which ONE of the following is not used to match a sheet of paper to its batch source?**

A. Rag content.
B. Wood pulp content.
C. Finish materials.
D. Trim marks.
E. Deckle edge.

(3) **Some paper has a "wire side" which can be observed as**

A. a pattern in the surface on one side of the paper.
B. a pattern of holes in the edge where the wire spiral was attached.
C. the presence of a thin line on one margin.
D. the presence of a metallic strip woven into the paper.
E. marks at the edge of the paper, left by the wire gripper.

(Correct answers are at the end of the study guide)

Section F— Analyze Impact and Non-Impact Images

Classification and Identification of Modern Office Copiers, James H. Kelly (1983)
American Society of Questioned Document Examiners , Publisher

Chapter: Brief History
Chapter: Copying Processes
Chapter: Preliminary Examinations
Chapter: Individual Characteristics

Examination and Identification of Photocopies and Photocopiers, John S. Gorajczyk
23 AM JUR POF3d 621, Lawyers Cooperative Publishing, Rochester, NY

Sections 1-4: pages 626-631
Section 16: Photocopier Identification

Manufacturing of Genuine Credit Cards, Ron Morris

Questioned Documents: A Lawyer's Handbook, Jay Levinson, (2001)
Academic Press, Boca Raton, FL ISBN 0-12-445490-9

Chapter 3: Typewriters
Chapter 4: Printers
Chapter 7: Printing

***Rubber Stamp Examination*: A Guide for Document Examiners**, Gary Herbertson (1997)
Wide Line Publishing, Colorado Springs, CO

Chapter 2: History and Manufacturing of Rubber Stamps
Chapter 3: Typical Unwanted Characteristics
Chapter 4: Manufacturer of Forgeries
Chapter 5: Forensic Methods of Examination
Chapter 7: Known Standards: Collecting Samples of a Stamp

The Scientific Examination of Questioned Documents, Ordway Hilton (1982)
Elsivier North Holland, Inc., New York City, NY
(same chapter in the 1993 edition)

Chapter 11: Typewriting Identification

The Scientific Examination of Documents: Methods and Techniques, David Ellen (1997)
Taylor and Francis, Bristol, PA ISBN 0-7484-0580-1

Chapter 9: Incidental marks and other scientific examinations,

US Identification Manual, published by Drivers License Guide Co.

"Where did this fax come from?" , Rob Shilhanek
Journal of Forensic Document Examination , Vol. 10, 1997

SAMPLE TEST QUESTIONS: Section F — Analyze Impact and Non-Impact Images

(1) When conducting a photocopy examination to determine the origin of a photocopy, the FIRST step in the process is to determine

A. the generation of the copy.
B. the copying process.
C. if there was more than one copy process used.
D. the fusing process
E. the rate of enlargement or reduction of the copy.

(2) A document examiner can read the facsimiles received on a particular kind of machine by "reading the ribbon" used to print the fax. Which BEST describes this kind of machine?

A. Plain paper.
B. Thermal.
C. Thermal transfer.
D. Laser jet.
E. Cloth ribbon.

(3) Intaglio is also known as

A. letterpress.
B. offset lithography.
C. Gravure.
D. Collotype.
E. screen printing.

(Correct answers are at the end of the study guide)

Section G — Using Laboratory Instruments

"An Electrostatic Imaging Technique for the Detection of Indented Impressions on Documents",
D. J. Morantz, et al., Forensic Science International, 13 (1979)

"Applications of Experimental Variables to the use of the Electrostatic Detection Apparatus",
Journal of Forensic Science, Vol. 28, 1983

Applied Infrared Photography (Publication M-28), Kodak. If unable to locate through a photographic store/dealer, contact Kodak at 1-800-242-2424 x 19 for further information.

Classification and Identification of Modern Office Copiers, James H. Kelly (1983)
American Society of Questioned Document Examiners , Publisher

Chapter: Copying Processes

Detecting and Deciphering Erased Pencil Writing, Ordway Hilton (1991)
Charles C. Thomas, Publisher, Springfield, IL ISBN 0-398-05723-0

Chapter 3: Has there been an erasure?
Chapter 5: Photographic Methods of Decipherment

"Electrostatic Detection Apparatus (ESDA): Is it Really Non-destructive to Documents?"
Diane K. Tolliver, Forensic Science International, 44, 1990

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Chapter 2: History of the Development of Writing Inks
Chapter 5: Printing Inks
Chapter 8: The Forensic Examination of Inks
Chapter 12: Watermarks
Chapter 13: Methods of Forensic Examination of Paper

Fundamentals of Document Examination, Edna W. Robertson (1991)
Nelson-Hall Co., Chicago, IL ISBN 0-8304-1238-7

Chapter 5: Methods of Examination

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M. L. Pearse and J.S. Brennan, Forensic Science International, 83 (1996)

"Light and Electron Microscopy Approaches to Sequence of Writing Problems,
Joseph G. Barabe, et al, Journal of Forensic Document Examination, Vol. 9, 1996

"Optimum Conditions for Examination of Documents using the Electostatic Detection Appartus (ESDA) Device to Vizualize Indented Writing", Michael G. Noblett, Elizabeth L. James,
Journal of Forensic Science, Vol. 28, No 3, 1983

Scientific Examination of Questioned Documents, (Revised Edition) Ordway Hilton (1982)
Elsevier North Holland, Inc. ISBN 0-444-00628-1
(same chapter in the 1993 edition)

Chapter 3: Instruments and Materials Used to Prepare Documents

"Some parameters Affecting the Quality of ESDA Results", I.J. Reibeling and H.J. Kobus,
Journal of Forensic Science (1994)

The Effects of Alternations to Documents, Steven A. Slyter
American Jurisprudence POF3d 549, Lawyers Cooperative Publishing, Rochester, NY

The Scientific Examination of Documents: Methods and Techniques, David Ellen (1997)
Taylor and Francis, Bristol, PA ISBN 0-7484-0580-1

Chapter 9: Incidental marks and other scientific examinations, pages 139-155
Chapter 7: The Materials of handwritten documents—substances and techniques

Thoughts for Digital Document Examination, Richard T. McEvoy, Jr. (2000)
Forensic Imaging, Inc., Victor, NY

Paper accompanying a workshop titled Computer Applications for Document Examiners, presented at AFDE, October 26, 2000. Available as a .pdf from the BFDE.

SAMPLE TEST QUESTIONS: Section G — Using Laboratory Instruments

(1) Which of the following would be a better choice for determining the sequence of writing?

A. A stereo microscope.
B. A light table.
C. Measuring grids.
D. Infrared absorption or reflection.
E. Paper and/or ink fluorescence

(2) Samples punched from the inked lines and plain paper areas of a document can be used for

A. testing for the presence of multiple writing instruments
B. testing for relative age of the entries on the page
C. testing for the source of the paper
D. testing for the age/or source of the inks(s)
E. all of the tests listed here

(3) Which ONE of the following examination procedures would be performed on graphite pencil traces?

A. Microscopic analysis.
B. Spot testing.
C. Thin Layer Chromatography.
D. Chemical analysis.
E. Water testing.

(4) Which ONE of the following would Raman Spectroscopy NOT be used for?

A. Comparing copier toner.
B. Comparing laser print toner.
C. Comparing inks.
D. Comparing carbon ribbons.
E. Comparing paper texture.

(Correct answers are at the end of the study guide)

Section H — Evaluating Evidence and Presenting Case Findings

ASTM Standard E 1658-96, American Society for Testing and Materials

Code of Professional Responsibility, Board of Forensic Document Examiners

"Contemporary issues in forensic handwriting examination: a discussion of the key issues in the wake of te Starzecpyzel decision", Bryan Found and Doug Rogers
Journal of Forensic Document Examination, Vol. 8, 1995

Reporting Procedures

Examination and Identification of Photocopies and Photocopiers, John S. Gorajczyk
23 AM JUR POF3d 621, Lawyers Cooperative Publishing, Rochester, NY

Forensic Signature Examination, Steven A. Slyter (1995)
Charles C. Thomas, Publisher, Springfield, IL

Chapter 10: Opinion—Levels of Certainty
Chapter 13: Testimony—Trials and Depositions

Fundamentals of Document Examination, Edna W. Robertson (1991)
Nelson-Hall Co., Chicago, IL ISBN 0-8304-1238-7

Chapter 20: Paper and Watermarks

Questioned Documents: A Lawyer's Handbook, Jay Levinson, (2001)
Academic Press, Boca Raton, FL ISBN 0-12-445490-9

Chapter 4: Printers

The Scientific Examination of Documents, David Ellen (1993 Edition)
Ellis Horwood Limited — Halsted Press (John Wiley & Sons) New York, Toronto
(same pages in the 1993 edition)

Chapter 4: Handwriting — the purpose and principles of scientific examination

The Scientific Examination of Questioned Documents, Ordway Hilton (1982)
Elsevier North Holland , Inc., New York City, NY ISBN 0-444-00628-1
(same pages in the 1993 edition)

Chapter 11: Typewriting Identification

SAMPLE TEST QUESTIONS: Section H — Evaluating Evidence and Presenting Case Findings

(1) Conclusions formed after the examination process are expressed as opinions. ASTM Standard E 1658-98 currently defines how many levels of handwriting opinions?

A. 3
B. 5
C. 7
D. 9
E. 11

(2) Which of the following is considered an individual characteristics of a photocopy?

A. Splash marks.
B. Trash marks.
C. Bleak marks.
D. Crimp marks.
E. Copy tears.

(3) Which ONE of the following is NOT typically included in the document examiner's report?

A. A description of the items examined.
B. The results of the examination.
C. A case reference
D. The date the report was typed.
E. A synopsis of the document's history.

(Correct answers are at the end of the study guide)

Section I —Demonstrating Knowledge of Legal Procedures

Black's Law Dictionary
West Publishing Co., St. Paul, MN (available at law libraries and local libraries)

Legal Terms commonly used by legal professionals when conversing with a document examiner

affidavit
codicil
collateral issue
cross examination
declaration
defendant
direct examination
directed verdict
examination-in-chief
exculpatory
grand jury
hypothetical question
impeach
in camera
indictment
interpleader action
judicial notice
learned treatise
motion in limine
nolle
nolo contendere
plaintiff
prima facie
precedent
privilege (various kinds of)
probate
probative value
proffered testimony
pro bono
recross
redirect
stipulate
subpoena
subpoena duces tecum
summary judgement
suppression hearing
ultimate issue

The Comprehensive Forensic Services Manual, Steven A. Babitsky, James J.Mangraviti, and Christopher J.Todd, (2000) SEAK, Inc., Falmouth, MA

Chapter 2: Fundamental Elements of a Law Suit
Chapter 3: The Discovery Process
Chapter 4: Anatomy of a Civil Trial
Chapter 5: Evidence
Chapter 6: Qualifications
Chapter 13: The Expert Deposition
Chapter 15: Cross-Examination

How to Excel During Cross-Examination, Steven Babitsky and James J. Mangraviti, Jr. (Equires) SEAK, Inc., Falouth, MA (1997)

Federal Rules of Evidence Opinions and Expert Testimony, Rules 701-706

Daubert v. Merrell Dow Pharmaceuticals 509 US 579 (1993), 43 F.3d 1311, 113 S. Ct. 2786
Frye v. USA 64 App.D.C. 46 (1923), 293 F. 1013
Kumho Tire Co., LTD., et al. v. Patrick Carmichael et al. 131 F.3d 1433, 119 S. Ct. 1167, 1169 (1999)
USA v. Starzecpysel 880 F. Supp.2d 1027 (1995)

Note: Discussion of legal issues can be found at http://www.forensic-evidence.com

SAMPLE TEST QUESTIONS: Section I — Demonstrating Knowledge of Legal Procedures

(1) "Subpoena Duces Tecum" is

A. a subpoena which only relates to expert witnesses.
B. a command to be available throughout the trial.
C. a command to bring all documents in your possession that relate to the case.
D. a command by the opposing party for you to prepare interrogatories.
E. "duces tecum" does not apply to subpoenas.

(2) Exculpatory evidence is defined as

A. evidence not admissible in trial
B. evidence to clear guilt
C. statements of evidence made without the jury present.
D. a ruling by the court to consider hearsay evidence.
E. declarations made in chambers.

(Correct answers are at the end of the study guide)

Correct Answers for sample questions

ANSWERS: Section A— Document Examination Foundation Skills

(1) **A.** **the number of times the pen changes directions.**
Reference: *"Documentation of forensic handwriting comparison and identification method: A modular approach",* Bryan Found and Doug Rogers, Journal of Forensic Document Examination, Vol. 12, 1999, page 31

(2) **A.** **Using a micro punch, samples of ink are extracted and dissolved in a solvent, then spotted on specially treated paper.**
Reference: *Forensic Examination of Ink and Paper*, Richard L. Brunelle and Robert W. Reed, pages 112-116.

(3) **D.** **the paper.**
Reference: *"A Sequential Multiple Approach to Determining the Relative Age of Writing Instruments"*, Richard L. Brunelle, International Journal of Forensic Document Examiners, Vol. 1, No. 2 April 1995, page 114.

(4) **C.** **2.50mm to 2.84mm**
Reference: *Questioned Documents: A Lawyer's Handbook*, Jay Levinson, page 63.

(5) **C.** **the gloss of the ink and the way it catches the edges of the high fibers of the paper.**
Reference: *Scientific Examination of Questioned Documents*, Ordway Hilton , page 35.

(6) **D.** **Lockwood's Directory**
Reference: *Forensic Examination of Ink and Paper*, Richard L. Brunelle and Robert W. Reed , pages 117-118.

ANSWERS: Section B—Evaluating Evidence

(1) **A.** **the victim**
Reference: *Evidential Documents*, James V.P. Conway, page 143.

(2) **B.** **initial the documents in an inconspicuous place.**
Reference: Crime laboratory procedures, common knowledge.

(3) **A.** **if the writer is passive, the signature will contain characteristics of the guider.**
Reference: "The taking of handwriting samples in cases of claimed assistance in writing", Manfred Hecker, Journal of Forensic Document Examination, Vol. 1&2, 1988, pages 49-50.

(4) **B.** **are written in the course of business or personal affairs.**
Reference: Evidential Documents, James V. P. Conway, page 77.

ANSWERS: Section C—Analyze Handwriting

(1) **D.** **that is naturally complex and written quickly.**
Reference: *Handwriting Identification: Facts and Fundamental*, Roy A. Huber and A. M. Headrick, page 132.

(2) **D.** **the writing that remains on the writing surface.**
Reference: *"Temporal features of handwriting: challenges for forensic analysis"*, Arnold J.W.M.Thomassen, Gerard P. Van Galen, Journal of Forensic Document Examination, Vol. 10, 1997, pages. 98-102.

(3) **D.** **does not contain the writing habits of the person who traced it.**
Reference: *The Scientific Examination of Documents: Methods and Techniques*, David Ellen, page 44 (1993 edition)

(4) **E.** **no different in quality from the writing of a right-handed person**
Reference: *Handwriting Identification: Facts and Fundamental*s, Roy A. Huber and A. M. Headrick, pages 305-307

(5) **A.** **reflect mainly the writing impulses of the signatory.**
Reference: *The Scientific Examination of Documents: Methods and Techniques*, David Ellen, page 36; *"It Ain't Necessarily So! A Study in Guided Hand Writings"*, Nancy H. Cole, Journal of Forensic Document Examination, pages 34-41

(6) **C.** **Deformed (illegible) letter structures increased significantly with acceleration.**
Reference:"*Intra-individual changes in handwriting features depending on handwriting velocity",* Petra Halder-Sinn and Karin Funsch, Journal of Forensic Document Examination, Vol. 11, 1998, page 7.

(7) **B.** **reflected bright field coaxial light.**
Reference: *"Light and Electron Microscopy Approaches to Sequence of Writing Problems",* Joseph G. Barabe, et al, Journal of Forensic Document Examination, Vol. 9, 1996, page 99.

(8) **A.** **generally consistent with one another.**
Reference: *The Scientific Examination of Documents: Methods and Techniques*, David Ellen, page 60 (1993 edition)

(9) **B.** **does not affect the identifying characteristics of the writing.**
Reference: *Handwriting Identification: Facts and Fundamental,* Roy A. Huber and A. M. Headrick, page 214

ANSWERS: Section D—Falsified Documents

(1) **B.** **for photographic dirt which was not removed from the negative.**
Reference: *Questioned Documents*: *A Lawyer's Handbook*, Jay Levinson, page 100.

(2) **B.** **thin layer chromatography.**
Reference: *Forensic Examination of Paper and Inks*, Richard Brunelle, et al., page 114.

(3) **C.** **1945**
Reference: *Scientific Examination of Questioned Documents*, Ordway Hilton, page 33.

(4) **E.** **The correct procedure is not listed.**
Reference: *"Distinguishing Between Relative Ink Age Determinationsand the Accelerated Aging Techniques",* Larry F. Stewart, et al., International Journal of Forensic Document Examiners, Vol. 2, No. 1, Jan/Mar 1996, page 12.

ANSWERS: Section E—Features of Paper and Media

(1) **D.** **Embedded ink pattern**
Reference: *Forensic Examination of Ink and Paper*, Richard L. Brunelle, et al., page 198
Fundamentals of Document Examination, Edna W. Robertson , page 297.

(2) **E.** **Deckle edge.**
Reference: *Forensic Examination of Ink and Paper*, Richard L. Brunelle, et al., chapter 13

(3) **A.** **a pattern in the surface on one side of the paper.**
Reference: *Forensic Examination of Ink and Paper*, Richard L. Brunelle, et al., page 214-215

ANSWERS: Section F—Analyze Impact and Non-Impact Images

(1) **B.** **the copying process**
Reference: *Classification and Identification of Modern Office Copiers*, James H. Kelly, page 43.

(2) **C.** **thermal transfer**
Reference: Common knowledge about the mechanical operation of fax machines

(3) **C.** **Gravure**
Reference: *Questioned Documents: A Lawyer's Handbook*, Jay Levinson, page 99.

ANSWERS: Section G—Using Laboratory Instruments

(1) **A.** **A stereo microscope.**
Reference: ***"****Light and Electron Microscopy Approaches to Sequence of Writing Problems*,
Joseph G. Barabe, et al, Journal of Forensic Document Examination, Vol. 9, 1996, pages 98-99.

(2) **E.** **All of the tests listed here**
Reference: *Forensic Examination of Ink and Paper*, Richard L. Brunelle and Robert W. Reed 108, 113, 223, 227

(3) **A.** **Microscopic analysis.**
Reference:*Detecting and Deciphering Erased Pencil Writing*, Ordway Hilton, page 14

(4) **E.** **Comparing paper texture**
Reference: McCrone Associates, Inc. / continuing education

ANSWERS: Section H—Evaluating Evidence and Presenting Case Findings

(1) **D.** **9**
Reference: ASTM Standard E 1658
Standard Terminology for Expressing Conclusions of Forensic Document Examiners

(2) **B.** **Trash marks**
Reference: *The Examination and Identification of Photocopies and Photocopiers*,
AM JUR 23 POF 3d 621, page 643.

(3) **E.** **A synopsis of the document's history**
Reference: ASTM Standard E 620-97,
Standard Practice for Reporting Opinions of Technical Experts.

ANSWERS: Section I—Knowledge of Legal Procedures

(1) **C.** **a command to bring all documents in your possession that relate to the case.**
Reference: *Black's Law Dictionary*

(2) **B.** **evidence to clear guilt**
Reference: *Black's Law Dictionary*

Document Examination Performance Exercise

(Study Guide)

During the practical performance exercises, you will be provided photographs of the signatures for examination. The signatures will be extracted from documents and arranged together as in an exhibit board. A form on which to write your answers will be provided. You will state your opinion in answer to the question(s) posed on the Instruction Sheet. You will provide your reasons — the list of features that form the basis of your opinion. ORA (the agency that grades our tests) has a model answer sheet which is used for reference in grading. Your list will be simple and direct, such as shown in the following pages.

Due to minor differences in vocabulary as a result of regional expressions or training, alternative choices for the descriptive words are written into the model answers. For example: one examiner may refer to the “apex of the letters” while another may say “the top of the letters”. Or, one person may say “exemplars”, whereas another refers to “knowns” or “standard of comparison”. Allowances are made for such differences. If the grader encounters a term not found in the model answer, an inquiry will be made to the Board (the test taker remaining anonymous) to determine if the test taker’s word is sufficiently similar to the model answer to be considered correct.

There will be certain key characteristics that must be included and others that are optional. Each answer requires that specific features be mentioned for the answer to be correct. The features list does not have to be in a specific order. In the example below, the features required to be stated are underlined. In addition, a specific number of other features are required to be identified. Depending on the writing style, it may be six, eight, ten, twelve (etc.), but all must be found in the model answer list. The test taker cannot, for example, simply list all of the letters in the name to reach ten features of identification. The test taker is not provided with the specific number of required features, so s/he should list all of the features that would be important to demonstrate the basis of his or her opinion to the jury.

Mock Sample Handwriting Instruction Sheet
Document Examination Performance Exercise

You will be provided an instruction sheet similar to the following. The "Title" displays the "Task Group " category. Section C is Analyzing Handwriting. There are seven sub-categories in Section C. The "Task(s) Addressed" is the subcategory.

Instead of providing you with multiple documents, as you would receive in an actual case, we have extracted the signatures (printing...) and created an exhibit board, similar to what document examiners bring to trial. You will be asked to examine the documents using the exhibit boards, form an opinion, and list the features of similarity or difference that support your conclusion/opinion. The proctor will not answer any questions concerning the materials provided.

TITLE: Analyze Handwriting C

TASK(S) ADDRESSED: Examine Cursive Writing

PERFORMANCE OBJECTIVE: By applying handwriting identification skills, the test taker will determine the authenticity of the signatures.

TOOLS/EQUIPMENT/SUPPLIES: 3 x Magnifier

NARRATIVE:

Samuel Jackson denies that he signed a release for the transfer of funds from an LLC account and a corporate authorization to withdraw the funds. He is presently involved in a law suit with one of the individuals holding an interest in the LLC. You have been retained by Mr. Jackson's attorney to determine the authenticity of the signatures.

DIRECTIONS

Using standard handwriting comparison techniques determine whether the questioned signatures on Exhibit A were written by Samuel W. Jackson. You may assume correctly that Mr. Jackson acknowledged his signature on all of the exemplars and that the questioned signatures and exemplars are contemporaneous.

QUESTIONS

1. Were you able to form an opinion on Questioned Signature (1)?_____

   If not, explain your reasons_____

   _____

2. Using ASTM Standard E-1658 *Standard Terminology for Expressing Conclusions of Forensic Document Examiners*, circle the level of confidence that you have in your conclusion regarding the questioned signature.

   a. Samuel Jackson wrote his signature on the document
   b. Samuel Jackson very probably wrote (strong probability, highly probable) his signature on the document
   c. Samuel Jackson probably wrote his signature on the document

   _____

   d. Samuel Jackson did not write his signature on the document
   e. Samuel Jackson very probably did not write his signature on the document
   f. Samuel Jackson probably did not write his signature on the document

The terms *indications* and *inconclusive* as defined in the ASTM standards are not available choices in this examination.

3. Identify the handwriting features (characteristics) that support your opinion.

The above would then be repeated if there was more than one questioned signature in the test.

MOCK MODEL ANSWER SHEET

1. Is the signature identified as Question Signature No. 1 a genuine signature of Samuel W. Jackson?

Answer. (The correct answer is written here for the grader)

Characteristics (the grader will have such a list of characteristics with alterative word choices)

Speed (written quickly)

Good line quality (fluent line quality) (line quality consistent with exemplars)

Placement (starting point) (position) of the initial stroke of the "J"

Baseline alignment of letters: step down alignment of "son"

Apex relationship (top of letter relationship) "S","W", "J", "k" one to another
Spacing pattern of "e" to "l"

Overlapping letters "S" and "a"

Pen lifts consistent with exemplars (knowns) (comparison signatures)

Letter relationships (proportions, ratios within letters) buckle of the "k"

Spacing patterns "l" to "W" and "e" to "l"

Lack of period after "W"

Horizontal compression of "W" (compression of, narrow spacing within letter)

Angularity of the lower loop of "J"

Letter designs/construction:

- fullness of the loop on "k"
- downward and leftward angle of the "l"
- angularity of the lower loop of "J"
- lack of definition in the "n" (illegible "n", thready pattern to "n")
- retraced (compressed, pinched) apex (top) of "s"