IAI Latent Print Examiner Certification
Practice Exam Questions*

By Henry Templeman
(Updated May 2005)

The following practice IAI CLPE exam questions were developed using the below five (5) IAI Latent Print Examiner Certification suggested reading materials. Answers to the questions are at the end of the exam.

Federal Bureau of Investigation, "The Science of Fingerprints"
Robert D. Olsen, Sr., "Scott's Fingerprint Mechanics"
Henry C. Lee, "Advances in Fingerprint Technology"
United Kingdom Home Office, "Fingerprint Detection by Fluorescent Examination"
David Ashbaugh "Quantitative-Qualitative Friction Ridge Analysis"

* These Study Questions for LP Examiners are not IAI Latent Print Certification Board approved or endorsed. They are a study tool prepared by Henry Templeman of the San Jose Police Department.

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To: Ed German, c/o Onin.com , Ron Smith, c/o Ron Smith & Associates and Kasey Wertheim, c/o CLPEX
Subject: IAI CLPE Practice Exam Questions

To assist San Jose Police Department latent print examiners prepare for the IAI certification exam I developed a practice exam containing 211 multiple choice questions taken from IAI's suggested reading materials list. I offer this information to you to post on your web site as free training material, to distribute freely to anyone interested, or to list me as a point of contact where this information can be obtained…

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Study Questions for LP Examiners
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August 2006

1. What sequence of latent print development techniques are used to develop prints from porous materials?

   - Ninhydrin, Iodine Fuming, DFO
   - DFO, Physical Developer, Ninhydrin
   - Ninhydrin, DFO, Physical Developer
   - DFO, Ninhydrin, Physical Developer

2. The final purple colored compound usually produced with the treatment of Ninhydrin is called:

   - Gentian Violet
   - Rutherford’s Purple
   - Ruhemann’s Purple
   - None of the above

3. What latent print development technique is used to process nonporous materials that are wet?

   - a) Small Particle Reagent
   - b) Physical Developer
   - c) Crystal Violet
   - d) Cyanoacrylate

4. A dye which stains protein present in blood to give a blue-black product.

   - a) SPR
   - b) Silver Nitrate
   - c) Amido Black
   - d) Vacume Metal Deposition

5. The following types of fingerprints will fluoresce under appropriate illumination:

   - a) Natural latent fingerprints
   - b) Some types of contamination arising from the environment and subsequently deposited in fingerprints.
   - c) Both of the above.
   - d) None of the above.
6. May be one of the first processes used in a sequence of a fingerprint examination.

   a) Iodine Fuming  
   b) Fluorescence Examination  
   c) Fingerprint Powders  
   d) Superglue

7. Gentian Violet is a dye which stains fatty constituents of sebaceous sweat producing an intense purple image. It is very effective for the development of latent fingerprints on:

   a) Wetted porous materials.  
   b) Skin  
   c) Plastic materials  
   d) Adhesive surface of adhesive tapes.

8. Alternative process name(s) for Gentian Violet:

   a) Crystal Violet  
   b) Methyl Violet  
   c) Sulfur Violet  
   d) Two of the above.

9. Alternative process name for Amido Black:

   a) Sudan Black  
   b) Naphthalene Black  
   c) Small Particle Reagent  
   d) None of the above.

10. Iodine vapour is physically absorbed by latent fingerprint deposits and often fades unless fixed. What color image is formed using iodine vapour?

   a) White  
   b) Grey  
   c) Brown  
   d) Black

11. Gentian Violet can interfere with the forensic examination for:

   a) Handwriting
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b) Body fluids
c) Ink
d) All of the above

12. Ninhydrin is a general purpose fingerprint reagent for paper and some other porous surfaces. What component of a fingerprint deposit does it react with?

a) fats
b) oils
c) amino acids
d) water

13. How long does it generally take for ninhydrin treated prints to naturally, fully develop?

a) Several seconds
b) Several hours
c) Several days
d) Several weeks

14. The development of Ninhydrin treated prints may be accelerated with the use of:

a) Heating and humidification
b) Water
c) Hydrochloric acid
d) None of the above

15. Ninhydrin which uses a freon solvent virtually eliminates the following problem when processing porous materials for latent prints:

a) Print development on materials that have been wetted
b) Ink running
c) Body fluid contamination
d) Delay in fingerprint development

16. Ninhydrin may be applied using the following methods:

a) Dipping
b) Brushing
c) Spraying
d) All of the above

17. Physical Developer (PD) is what kind of aqueous reagent?
a) nickel-based  
b) gold-based  
c) lead-based  
d) silver-based  

18. Physical Developer reacts with components of sebaceous sweat to form what colored deposit?  
a) Grey-silver  
b) Gold  
c) Brown  
d) White  

19. Physical Developer is a very effective reagent for developing latent fingerprints on paper which has been:  
a) Wetted  
b) Bloodstained  
c) Treated with fluorescent dye stains  
d) First processed with superglue  

20. This latent print development technique can be effective on non-porous surfaces:  
a) DFO  
b) Ninhydrin  
c) Physical Developer  
d) None of the above.  

21. These flake powders have been shown to be more sensitive than most other types of powders:  
a) Redwop  
b) Carbon  
c) Aluminum  
d) Chalk  

22. Which latent print development technique was replaced by the Ninhydrin/Physical Developer combination for treating porous materials for latent prints?  
a) Iodine Fuming  
b) Silver Nitrate  
c) Radioactive Sulfur Dioxide  
d) Rodamine 6G
23. Silver Nitrate reacts with what component present in fingerprint deposits?
   a) amino acids
   b) fats
   c) water
   d) chlorides

24. Small Particle Reagent (SPR) is a latent print development technique that may be used on all non-porous surfaces including those which are:
   a) bloodstained
   b) wet
   c) sticky or adhesive
   d) dusty

25. What does Small Particle Reagent adhere to in the fingerprint deposit?
   a) Chlorides
   b) Fats
   c) Water
   d) Amino Acids

26. Small Particle Reagent is comprised of what fine particles?
   a) Molybdenum Disulphide
   b) Sulphur Dioxide
   c) Silver Nitrate
   d) Carbon Black

27. Small Particle Reagent forms what color deposit?
   a) Grey
   b) White
   c) Black
   d) Silver

28. The best latent print development technique for use on non-porous surfaces which are contaminated with grease, foodstuffs or dried deposits of soft drinks:
   a) Sudan Black
   b) Magnetic Powder
   c) DFO
   d) None of the above
29. An alternative process name for superglue is:
   a) Cyanoacrylate
   b) Cyanocarbonate
   c) Cyanoacetate
   d) Cyanochlorate

30. Superglue polymerises on some latent fingerprints to produce what colored deposit?
   a) Clear
   b) White
   c) Grey
   d) Black

31. Superglue is thought to react primarily with what component in the latent print deposit?
   a) Amino Acids
   b) Water
   c) Salt
   d) Two of the above

32. Superglue is most suitable for what kinds of surfaces?
   a) Porous
   b) Non-porous
   c) Semi-porous
   d) Contaminated

33. Vacuum Metal Deposition utilises vacuum-coating technology for the evaporation of metals and the deposition of thin metal films. Thin layers of what metal is used for this process?
   a) Gold and Lead
   b) Gold and Aluminum
   c) Gold and Silver
   d) Gold and Zinc

34. Vacuum Metal Deposition is particularly suitable on what surfaces:
   a) Papers and cardboard
   b) Heavily contaminated
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c) Polythene plastic
d) Leather

35. This fingerprint development technique reacts more intensely with older fingerprints thereby making it possible to determine the relative age of a latent print:

a) Ardrox
b) Rodamine 6G
c) DFO
d) It is impossible to determine the age of a fingerprint by observation of it’s reaction with a fingerprint detection process.

36. Employed in the Central Police Department, La Plata, Argentina and installed the French Bertillon Anthropometric Identification System.

a) Bertillion
b) Vucetich
c) Galton
d) Faulds

37. In 1893 operated office that solved the Rojas murder by use of fingerprints.

a) Bertillion
b) Vucetich
c) Galton
d) Faulds

38. A fingerprint classification without whorls would be:

a) 0/0
b) 1/1
c) 32/32
d) 64/64

39. A fingerprint classification with all whorls would be:

a) 0/0
b) 1/1
c) 32/32
d) 64/64

40. The initial suggestion associating the identification of fingerprints found at crime scenes with finger impressions in a collection is credited to:
41. Credited for his practical interest in fingerprints in India as a means of identifying workers to ensure that payment of wages was not duplicated:

a) Dr. Henry Faulds
b) Sir Edward Henry
c) Sir William Herschel
d) Sir Francis Galton

42. The first person to confirm ridge permanency was:

a) Dr. Henry Faulds
b) Sir Edward Henry
c) Sir William Herschel
d) Sir Francis Galton

43. This person is known as the “Father of Canadian Fingerprinting”:

a) Juan Francisco Steegers y Perera
b) James Mock
c) Michael Carrick
d) Edward Foster

44. The first American fingerprint lecturer was:

a) Mary Holland
b) John Ferrier
c) John Billings
d) Duayne Dillon

45. The use of magnetic fingerprint was first reported by:

a) H. MacDonald
b) E. German
c) H. Faulds
d) F. Galton

46. Iodine is applied by which method:

a) Fuming Gun Method
b) Fuming Cabinet Method
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c) Solution Method
d) All of the above

47. In 1982 the U.S. Army Criminal Investigation Laboratory in Japan introduced which novel procedure for processing evidence for latent prints?

a) Ninhydrin
b) Superglue
c) Rodamine 6G
d) DFO

48. In order to accelerate the development of superglued prints what is commonly used:

a) Portable heater
b) Hair dryer
c) Alcohol lamp
d) All of the above

49. Reacts with the amino acids in the fingerprint deposit:

a) Superglue
b) Physical Developer
c) Ninhydrin
d) SPR

50. Freon 113 (trichlorotirfluoroethane) is a solvent that has been used to produce:

a) Ninhydrin
b) Superglue
c) Physical Developer
d) None of the above

51. An alternative name for “1,8-diazafluoren-9-one” is:

a) Silver Nitrate
b) DFO
c) Physical Developer
d) Ardrox

52. Who reported the use of DFO for the fluorescent detection of latent prints on paper?

a) Pounds
b) German

c) Menzel

d) Herod

53. Ninhydrin solutions may be applied by:

a) Spraying
b) Swabbing
c) Dipping
d) All of the above

54. A photographic process that is based on the formation of silver and a ferrous/ferric
redox couple and the deposition of metal salts onto a fingerprint image:

a) DFO
b) Physical Developer
c) Small Particle Reagent
d) Crystal Violet

55. These Reagents have been reported to work very successfully in the enhancement of
bloody fingerprints:

a) Coomassie Blue
b) Amido Black
c) Both of the above
d) None of the above

56. This method(s) has been suggested for the visualization and recovery of latent
fingerprints on human skin:

a) Magnetic Powder
b) Iodine-silver plate transfer
c) Ninhydrin
d) Two of the above

57. This light source(s) have been utilized in the development of latent prints and have
produced better latent print images than regular room light:

a) UV light sources
b) Lasers
c) Xenon arc lamps
d) All of the above

58. The “Luma-lite” and “Polilight” are:
   a) Lasers
   b) Alternate light sources
   c) Xenon arc lamps
   d) None of the above

59. The uses of this solvent in the preparation of Ninhydrin prevents ink runage on paper documents.
   a) Methonal
   b) Ethyl Acetate
   c) Freon 113
   d) Citric Acid

60. This is known as the latent print examiner’s “chemical workhorse” for the treatment of porous materials for latent prints:
   a) DFO
   b) Ninhydrin
   c) Physical developer
   d) Iodine Fuming

61. This process(s) can lead to a significant increase in the quality and contrast of ridge detail revealed when used in conjunction with Ninhydrin:
   Heat
   Humidity
   Heat and humidity
   None of the above

62. Fading is a common phenomenon for prints developed with:
   a) Superglue
   b) Ninhydrin
   c) Crystal Violet
   d) All of the above

63. Ninhydrin has been known to develop ______ old prints.
   a) 3-5 week
64. The human eye can generally detect no more than ________ various shades of gray.

a) 64-128  
b) 32-64  
c) 16-32  
d) 8-16

65. The FBI Identification Division was established in 1924 when the records of the National Bureau of Criminal Investigation and the Leavenworth Penitentiary Bureau were consolidated in Washington D.C. The original collection of _________ has expanded into many millions.

a) 810  
b) 8,100  
c) 81,000  
d) 810,000

66. Type lines may be defined as the two innermost ridges which start parallel, diverge, and surround or tend to surround ______________.

a) the core  
b) the delta(s)  
c) the pattern area  
d) none of the above

67. The delta is that point on a ridge at or in front of and nearest the center of the divergence of ____________.

a) the type lines  
b) the pattern area  
c) the core  
d) a recurving ridge

68. A delta may be ______________.

a) a dot
b) a bifurcation
c) an abrupt ending ridge
d) all of the above

69. The core of a loop is placed upon or within ________________.
   a) the innermost ridge
   b) the innermost recurve
   c) the innermost sufficient recurve
   d) none of the above

70. The essentials of a loop are:
   a) a sufficient recurve, a delta, and a ridge count across a looping ridge
   b) a sufficient recurve, a core, and a ridge count across a looping ridge
   c) a delta, a core, and a ridge count across a looping ridge
   d) a delta and a ridge count across a looping ridge

71. Loops that flow in the direction of the ulna bone (toward the little finger) are called:
   ulna loops
   ulnar loops
   ulnal loops
   ulnad loops

72. Loops that flow in the direction of the radius bone are called:
   a) radius loops
   b) radial loops
   c) radian loops
   d) radar loops

73. The double loop consists of two separate loop formations, with two separate and distinct shoulders and two ________.
   a) cores
   b) type lines
   c) deltas
   d) recurving ridges

74. A tenprint card with a primary classification of 32/32 means that all of the prints are:
   a) loops
   b) whorls
   c) arches
d) none of the above

75. The classification formula may be composed of the following divisions:

- a) primary, secondary, subsecondary, major, final, key
- b) primary, secondary, alternate, major, determinate, key
- c) primary, secondary, alternate, major, determinate, final
- d) primary, secondary, subsecondary, major, alternate, key

76. NCIC stands for:

- a) National Center for Information Control
- b) National Crime Information Center
- c) National Criminal Information Control
- d) None of the above

77. Based on NCIC classification an actual ridge count plus “50” represents what kind of fingerprint pattern?

- a) Ulnar loop
- b) Radial loop
- c) Central Pocket Whorl
- d) Double Loop Whorl

78. The NCIC code for tented arch is:

- a) TA
- b) AT
- c) TT
- d) AA

79. The NCIC code for missing/amputated fingers is:

- a) XX
- b) AA
- c) MA
- d) AM

80. When fingerprinting the dead and rigor mortis (stiffening of the muscles) has set in and the fingers are tightly clenched, the fingers may be:

- a) forcibly straightened by “breaking the rigor”.
- b) immersed in liquid detergent to gently “loosen the rigor”.

c) immersed in alcohol to gently “loosen the rigor”.
   d) None of the above

81. This person is credited with being the first European to recognize the value of friction ridge prints and to actually use them for identification purposes:
   a) Sir William Herschel
   b) Dr. Henry Faulds
   c) Alphonse Bertillion
   d) Sir Francis Galton

82. The first truly scientific method of criminal identification (of which we are aware) was devised by:
   a) Sir William Herschel
   b) Dr. Henry Faulds
   c) Alphonse Bertillion
   d) Sir Francis Galton

83. “Anthropometry” is an identification system also known as ___________.
   a) Ridgeology
   b) Henry Classification System
   c) Bertillonage
   d) None of the above

84. This person significantly helped advance the field of fingerprint identification in South America while employed at the Central Police Department at La Plata, Argentina:
   a) Juan Vucetich
   b) Francisca Rojas
   c) Carlos Velasquez
   d) Fernando Alvarez

85. In 1896 this country became the first country in the world to abolish the anthropometry system:
   a) France
   b) Spain
   c) Argentina
   d) United States
86. A professor at the University of Bologna, Italy, this person published the results of his examination of friction skin with the newly invented microscope:

a) Johannes Purkinje  
b) Marcello Malphighi  
c) Govard Bidloo  
d) Nehemiah Grew

87. This person was the first to describe the repetitiveness and similarities of friction ridge patterns in the same breath with the recognition that specific friction arrangements are never duplicated:

a) Johannes Purkinje  
b) Arthur Kollmann  
c) Inez Whipple  
d) J.C.A. Mayer

88. Pore ducts open along the top of friction ridges. They appear to be evenly spaced along the ridge. The appearance of even spacing is due to the fact that friction ridges are constructed of ___________.

a) ridge units  
b) epidermal cells  
c) dermal papillae  
d) None of the above

89. Immature ridge formations that develop in the same manner as normal ridges:

a) dots  
b) creases  
c) incipient ridges  
d) pores

90. Eccrine sweat contains approximately ____ water.

a) 90%  
b) 95%  
c) 97%  
d) 99%
91. The solids of eccrine sweat are half inorganic salts and half organic compounds. The salt is mostly sodium chloride while the organic compounds include:

   a) urea
   b) amino acids
   c) peptides
   d) all of the above

92. Incipient ridges are also called ________ ridges.

   a) rudimentary
   b) subsidiary
   c) nascent
   d) all of the above

93. “Imbrication” is a feature where friction ridges all tend to:

   a) lean in the same direction.
   b) break apart into separate fragmented ridge units.
   c) Disappear into non-friction ridge skin
   d) None of the above

94. The epidermis is the ________ layer of the friction skin.

   a) inner
   b) outer
   c) generating
   d) primary

95. In the volar areas the epidermis is made up of several layers of skin cells. These various layers are sometimes divided into two groups. The inner layer of cells is the stratum __________ (also called the stratum mucosum), and the outer layer is the stratum __________.

   a) Malpighii, corneum
   b) Malpighii, spinosum
   c) Corneum, spinosum
   d) Spinosum, corneum

96. The deepest layer of cells next to the dermis is called the:

   a) spinous layer
   b) hyalin layer
   c) basal layer
d) granular layer

97. The inner layer of friction skin is called the:
   a) epidermis
   b) dermis
   c) dermal papillae
   d) secondary epidermal ridge

98. The surface of the dermis is covered with blunt peg-like formations called:
   a) dermal ridges
   b) papillae ridges
   c) dermal papillae
   d) none of the above

99. Injury or disease that penetrates the skin to the dermal papillae level can damage the epidermal ______ layer infrastructure.
   a) hyalin
   b) granular
   c) spinous
   d) basal

100. The first noticeable development of friction skin on the volar surfaces takes place at about ____ weeks gestation.
   a) 6
   b) 8
   c) 10
   d) 12

101. A triradius is called a _______ in most classification systems.
   a) triple ridge system
   b) central point situated on or near the type lines
   c) central point situated on or near the recurving ridge
   d) delta

102. The study of the effects of disease and genetic aberrations on the friction ridges is referred to as:
   a) Dermatoglyphics
   b) Dermatophytosis
   c) Dermagenetics
   d) Dermagenitomy
103. The comparison of relative pore locations is called __________ .
   a) Ridgeology
   b) Porology
   c) Poroscopy
   d) none of the above

104. There are instances when ridge units are present but do not fuse together to form friction ridges. This aberration may affect all of the volar surfaces or just a small part. This condition, known to be inherited, is called __________ .
   a) dysphoria
   b) dysphasia
   c) dysphagia
   d) dysplasia

105. Intrinsic ridge shapes and relative pore locations are designated as __________ .
   a) 1st level ridge detail
   b) 2nd level ridge detail
   c) 3rd level ridge detail
   d) none of the above

106. Friction ridge identification is established through the agreement of friction ridge formations, in sequence, having sufficient uniqueness to individualize. “Sequence” means that all areas of the print must be joined directly, or if physically separated, undergo careful analysis where the opinion of the expert is that sequence is maintained over the separation. When sequence is maintained, the weight placed on each area of comparison is __________ .
   a) distinct
   b) equal
   c) accumulative
   d) measureable

107. The opinion of identification is __________ .
   a) objective
   b) subjective
   c) impersonal
   d) impartial

108. The methodology of friction ridge identification is known as:
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a) friction ridge analysis
b) ridgeology
c) ACE-V
d) none of the above

109. ACE-V stands for:

a) analysis, correlation, evaluation, verification
b) ability, comparison, expertise, verification
c) association, comparison, evaluation, verification
d) analysis, comparison, evaluation, verification

110. It is ___________ to describe every discrepancy that may be encountered during the analysis of friction ridge prints.

a) a necessary skill and ability for all “expert” examiners to be able
b) the task of all ten-print and latent print examiners
c) important
d) impossible

111. Various substrates can cause distortion or interfere with the deposition of a print. For example, holding a round bottle in the hand allows the thumb and thenar palm area to wrap around the substrate. When lifted and put onto a flat surface the resulting print can appear as:

a) an index finger and palm.
b) a little finger and palm
c) a writers palm
d) a hypothenar

112. The matrix of a friction ridge print is the actual substance deposited by the friction ridges. This substance may be:

a) sweat
b) foreign material such as grease, motor oil, paint, etc.
c) sweat/foreign material combination
d) all of the above
113. Dirty substrates may not accept all of the matrix available during deposition. The resulting print can:

   a) appear blotchy
   b) have areas missing
   c) lack detail
   d) all of the above

114. Soft substrates permit the friction ridges to sink into their surfaces and:

   a) make it impossible for development
   b) create molded impressions
   c) make double taps more common
   d) bring fingers into juxtaposition with the interdigital areas

115. Prints deposited when the friction ridges are wet, usually with water or a fluid other than sweat, are commonly referred to as wet prints. The friction ridges tend to appear as a series of _______________ before and after development.

   a) rounded units
   b) solid lines
   c) diffused, runny dots
   d) broken lines

116. This development media can pile up in the nooks and crannies such as pore openings and fine ridge crevices in the matrix:

   a) ninhydrin
   b) physical developer
   c) superglue
   d) fingerprint powders

117. Deposition pressure generally changes the shape of the friction ridge by:

   a) stretching or smearing each ridge
   b) flattening or broadening each ridge
   c) destroying ridges
   d) merging ridges making identification difficult

118. Pressure distortion is different from deposition distortion. While deposition pressure describes vertical weight being placed on the friction ridges, pressure distortion takes place:
a) in the matrix  
b) on the lateral or horizontal plane  
c) in the development medium  
d) on the finger/palm itself

119. “Red flags” are deposition or pressure distortion indicators that:
   a) are warnings and warrant careful analysis.  
   b) make comparison impossible.  
   c) must be precisely defined before an identification can be effected.  
   d) can always be explained.

120. A ridge break may be caused by:
   a) a dip in the ridge at a pore opening  
   b) a failure in deposition of matrix  
   c) dirt  
   d) all of the above

121. The intrinsic or innate ridge formations are all:
   a) 1st level ridge detail  
   b) 2nd level ridge detail  
   c) 3rd level ridge detail  
   d) none of the above

122. When encountering friction ridge clusters, the anatomical aspects of the digits in the cluster assist with:
   a) digit determination  
   b) matrix identification  
   c) ridge path formation  
   d) print classification

123. Friction ridge comparison is a process where visual comparative measurements, and sometimes physical comparative measurements, are made between the latent and exemplar prints. The measurements are sequential, spatial, and configurative in nature. The comparison must:
   a) be completely objective.  
   b) involve a fingerprint glass and fingerprint pointers or picks.  
   c) include all 1st, 2nd and 3rd levels of detail before an identification can be effected.  
   d) take into consideration case type and circumstance.
124. During the identification process the purpose of first level detail is:

   a) to classify the print.
   b) to identify ridge flow
   c) to narrow the number of possible donors
   d) determine automatability

125. Hale’s islands and branchings refer to major 2nd level ridge path deviations found on the friction ridges known as:

   a) ending ridges and bifurcations
   b) ending ridges and islands
   c) islands and bifurcations
   d) dots and bifurcations

126. When two bifurcations form on the same ridge facing each other and their branches join, the formation is called:

   a dot
   an enclosure
   an spur
   a crossover

127. A ____________ is when two bifurcations develop next to each other on the same ridge.

   a double bifurcation
   a crossover
   a trifurcation
   an enclosure

128. Friction ridges flow in concert. When a ridge ends the two adjacent ridges:

   a) flow together to fill the void.
   b) naturally diverge.
   c) join to form a single ridge.
   d) continue to form other ridge characteristics.
129. 3rd level ridge details:

   a) can always be observed together with 2nd level ridge detail.
   b) cannot be used without 2nd level ridge details for purposes of identification.
   c) have little individualizing power.
   d) have tremendous individualizing power.

130. Poor quality prints that are not easy to compare fall into what may be described as a gray area. The size of a gray area and the number of prints that will fall into this area is dependent on examiner ____________.

   a) training and experience
   b) ability and skill
   c) knowledge
   d) all of the above

131. Palmar flexion creases, when applied to the identification process, are alone:

   a) not a suitable method for personal identification.
   b) a suitable method for personal identification.
   c) sometimes a suitable method for personal identification.
   d) still in the research and development stage for identification suitability.

132. “Palmar flexion crease identification is established through the agreement of flexion creases in sequence having sufficient uniqueness to individualize.”

   a) This is a simple phrase to describe the philosophy of palmar flexion crease identification.
   b) This is an incomplete phrase to describe the philosophy of palmar flexion crease identification.
   c) This is a proposed phrase to describe the philosophy of palmar flexion crease identification.
   d) This is a false statement.

133. The method of palmar flexion crease identification:

   a) is unique and differs from ACE-V
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b) follows the ACE-V formula
c) is known as the PFC formula
d) there is no method for palmar flexion crease identification.

134. Comparison tests involving palmar flexion creases and their results have been performed and were reported in 1991 by:

a) SWIGFAST
b) The International Association for Identification
c) New Scotland yard
d) FBI

135. In testifying to fingerprint identification, the expert often prepares charts to visually aid the court and jury in understanding the nature of his/her testimony. The preparation of the chart:

a) is best carried out by a “chart specialist”.
b) is often performed by the district attorney handling the case.
c) is ultimately the sole responsibility of the expert using it.
d) is often a collaborative effort by the examiner and district attorney.

136. Any chart presented must be technically correct: that is the corresponding ridge characteristics in the two prints must be similarly numbered and indicated.

a) All of the matching ridge characteristics should be charted.
b) Twelve ridge characteristics are ample to illustrate an identification, but it is neither claimed nor implied that this number is required.
c) Twelve matching ridge characteristics is the accepted minimum number of ridge characteristics used for purposes of U.S. courtroom charts.
d) The precise amount of matching ridge detail information used when the identification was made should be used when preparing a chart.
137. A chart will present a clearer, neater, and more pleasing appearance if it is numbered:

   a) clockwise and the numbers are evenly spaced.
   b) counter-clockwise and the numbers are evenly spaced.
   c) clockwise and a line is not drawn from the number to the ridge characteristic.
   d) Counter-clockwise and a line is drawn from the number to the ridge characteristic.

138. Edgeoscopy:

   a) has always been a part of friction ridge comparison, but its use as an independent identification science is not feasible.
   b) was originally coined by Salil K. Chatterjee in a paper published in “Finger Print and Identification Magazine”, September 1962 issue.
   c) involves the use of edge shapes during comparison and does not require the shape to be classified. One shape is compared to another and found to be consistent or not.
   d) all of the above

139. Ridgeology can be defined as the study of the uniqueness of friction ridge structures and their use for personal identification. The scientific knowledge supporting ridgeology has been extracted from various related sciences such as:

   a) embryology, chemistry and genetics.
   b) anatomy, genetics and physics.
   c) genetics, anatomy and embryology.
   d) chemistry, anatomy and embryology.

140. Ridgeology was coined in 1983 by:

   a) Ed German
   b) David Ashbaugh
   c) Andre Moessens
   d) Edward Locard

141. Friction ridges begin to form on the human fetus during the __________ months of fetal life:
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a) 3rd and 4th
b) 5th and 6th
c) 7th and 8th
d) 9th and 10th

142. When the skin is damaged to the extent that both the epidermis and the dermis are disturbed, a permanent scar may result with attendant alteration of the ridges involved. Scars:

a) do little to provide additional information needed to effect an identification.
b) provide additional and valuable means of identification.
c) nevertheless are not considered reliable for purposes of identification.
d) Should not be currently used for purposes of identification since additional research is required.

143. About 60 percent of all fingerprint patterns are:

a) arches
b) whorls
c) loops
d) none of the above

144. About 35 percent of all fingerprint patterns are:

arches
whorls
loops
none of the above

145. About 5 percent of all fingerprint patterns are:

arches
whorls
loops
none of the above

146. John Dillinger, the notorious criminal of the Great Depression, tried to remove his fingerprints with:

a) skin grafting
b) intentional scarring
c) surgical planning
d) acid
147. There are ten spaces for individual rolled impressions on a fingerprint card, and if a whorl appears in either the right thumb or right index finger space, the space is given a value of:

1
2
8
16

148. The left ring and left little fingers have a space value of:

a) 1
b) 2
c) 8
d) 16

149. The large cushion area at the base of the thumb is known as the:

a) thenar
b) hypthenar
c) interdigital
d) carpal delta

150. The area or finger joint located adjacent to the palm:

a) medial phalangeal zone
b) proximal phalangeal zone
c) radial phalangeal zone
d) distal phalangeal zone

151. The size of fingerprint cards has been standardized at:

a) 8-by-8 inches
b) 8.25-by-8.25 inches
c) 8.5-by-8.5 inches
d) 8.75-by-8.75 inches

152. The most prominent error when taking fingerprints is:

a) points necessary to determine the type of pattern are absent.
b) fingers are not rolled; only the plain or flat impressions were obtained.
c) improper inking or pressure applied when rolling.
d) carelessness of the recorder taking the impressions.
153. A photographic film exposure consists of four basic variables:
   a) subject movement, camera lens aperture setting, camera shutter speed setting, and the speed of the selected film.
   b) subject movement, camera lens aperture setting, camera shutter speed setting, and the camera type.
   c) subject light, camera lens aperture setting, camera shutter speed setting, and the camera type.
   d) subject light, camera lens aperture setting, camera shutter speed setting, and the speed of the selected film.

154. By increasing the aperture size of the lens (diameter of the diaphragm) one f-stop, for example from f/11 to f/8, the amount of light transmitted through the lens is:
   a) decreased by one-half
   b) doubled
   c) decreased by 1/10th
   d) increased by 1/10th

155. Each time the setting of the shutter is advanced to the next smaller fraction, for example from 1/50 to 1/100 second, the amount of time the shutter remains open and the amount of light reaching the film is:
   a) reduced by one-half
   b) doubled
   c) reduced by 1/10th
   d) increased by 1/10th

156. A film which has an ASA film speed rating of 200 is ________ as fast as one with a rating of 50.
   a) ¼
   b) 4 times
   c) twice
   d) ½

157. When photographing latent fingerprints on a curved surface, _______________ must be considered when computing exposure settings.
   a) aperture
   b) shutter speed
   c) depth of field
d) camera type

158. A fuming cabinet is an environmental control chamber in which an object is exposed to high concentrations of fumes from a particular substance. The following latent print development technique(s) should always be used inside a fuming cabinet:

a) physical developer
b) ninhydrin
c) superglue
d) all of the above

159. Optimum development of ninhydrin-treated latent prints is obtained when the items processed are subjected to a post-processing environment of __________ percent relative humidity.

a) 35 – 50
b) 50 – 65
c) 65 – 80
d) 80 – 95

160. An investigator must know that when a latent is developed with powder, the evidence is going to wind up in a condition equally as good or better than when it was found. The way to predetermine the result of the attempt is to perform what is known as a _______ print on the same or similar surface at a point where it does not interfere with the latent evidence.

a) trial
b) test
c) presumptive
d) probe

161. More latent prints are lost because of _______________ and insufficient brushing than any other causes.

a) insufficient powder
b) excessive powder
c) wrong powder selection
d) wrong brush selection

162. Thermoplastic powders must be applied to a surface with:

a) an atomizer
163. What is the proper sequence for latent print development on porous materials using the following methods: Ninhydrin, Iodine, Silver Nitrate.

a) 1. Ninhydrin  2. Iodine  3. Silver Nitrate  
b) 1. Iodine  2. Silver Nitrate  3. Ninhydrin  
c) 1. Iodine  2. Ninhydrin  3. Silver Nitrate  
d) 1. Silver Nitrate  2. Ninhydrin  3. Iodine

164. Of all the solvents used for ninhydrin solutions, the following result in the greatest damage to inks:

a) acetone, methyl alcohol, freon 113  
b) acetone, methyl alcohol, ethyl alcohol  
c) freon 113, ethyl ether, petroleum ether  
d) methyl alcohol, ethyl alcohol, ethyl ether

165. Of all the solvents used for ninhydrin solutions, the following result in the least damage to inks:

a) acetone, methyl alcohol, freon 113  
b) acetone, methyl alcohol, ethyl alcohol  
c) freon 113, ethyl ether, petroleum ether  
d) methyl alcohol, ethyl alcohol, ethyl ether

166. If kept for any length of time, silver nitrate solutions should be kept:

a) in a sealed, clear container.  
b) in a well-stoppered dark-colored bottle or in a dark place.  
c) in a fume hood.  
d) in a flammable cabinet

167. A satisfactory clearing solution for both ninhydrin and silver nitrate stains is:

a) methyl alcohol  
b) ethyl ester  
c) ordinary household bleach, i.e. Clorox  
d) soap and water

168. One of the most dangerous chemical substances used in latent fingerprint work is:
a) small particle reagent
b) physical developer
c) DFO
d) hydrogen fluoride

169. Prior to applying any chemical techniques for developing latent prints to suspected blood stains, the evidence should:

a) be lifted prior to a serology exam
b) be first examined by a serologist
c) be placed in property for storage
d) be refrigerated

170. Leucomalachite green is a sensitive reagent which has been used for a considerable time by criminalists as a chemical test for:

a) blood
b) salt
c) physiological fluid
d) amino acids

171. Luminol is a highly sensitive chemical test for ________ which produces a chemiluminescence of fifteen minutes duration or more.

a) blood
b) salt
c) sweat
d) amino acids

172. This is a latent print development technique that employs finely powdered lead to visually record latent print images:

a) Scanning Electron Microscope
b) X-ray
c) copy camera
d) SPR

173. Photographing a latent print prior to lifting:

a) is almost always never done.
b) is generally always done.
c) preserves the latent image in the event of loss or destruction in the lifting process.
d) is done in order to enhance the latent image prior to lifting.
174. Three types of lifting devices are commonly used to lift powdered latents:
   a) rubber lifters, lifting tape, opaque lifts
   b) lifting tape, hinge lifters, opaque lifts
   c) rubber lifters, lifting tape, hinge lifters
   d) rubber lifters, transparent lifters, opaque lifts

175. Rubber lifters are not as commonly used as lifting tape and hinge lifters, but they are more versatile. Rubber lifters are particularly useful when lifting latent prints from:
   a) slanted surfaces
   b) pointed surfaces
   c) curved surfaces
   d) sharp surfaces

176. Fingerprint hinge lifters are sheets of .005 Mylar with special clear adhesive surfaces. The lifters are attached to their covers by a hinge on one side of the lifter. A thin plastic separator covers the adhesive side of the lifter and this separator is marked with removal instructions. When using the lifter, the separator is:
   a) partially removed and then replaced following latent lifting.
   b) completely removed and then replaced following latent lifting.
   c) removed and folded onto the latent lift.
   d) removed and thrown away.

177. Lifts made with transparent tapes and lifters can be compared directly with inked impressions, whereas opaque lifters must be:
   a) reversed
   b) transposed
   c) inverted
   d) none of the above

178. If two or more simultaneous fingerprints are developed in a group, the best procedure is to lift:
   a) the impressions individually
   b) the impressions in separate sections
   c) the impressions as a group
   d) it does not matter how the impressions are lifted.
179. A latent print itself is not removable from a surface by the lifting process. The oils and moisture simply hold powder grains, which are in turn picked up by the adhesive tape. A powder and not the latent image is lifted.

   a) The latent never loses any of its substance.
   b) The lifting process may be repeated without loss of latent quality.
   c) With re-powdering the amount of powder that adheres to the latent remains constant.
   d) If the process is repeated, each lift becomes progressively weaker.

180. Iodine developed latent prints can be accelerated by exposure to:

   a) laser light
   b) sunlight
   c) black light
   d) humidity

181. Silicone rubber casting provides the best technique for accurately recording and permanently preserving:

   a) plastic fingerprint impressions
   b) distorted fingerprint impressions
   c) imbedded fingerprint impressions
   d) patent fingerprint impressions

182. Latent fingerprints on _________ are about the most difficult for an investigator to detect and develop.

   a) wetted surfaces
   b) rough porous materials
   c) cloth
   d) dusty surfaces

183. The correct procedure to recover latent prints on dusty surfaces is:

   a) standard fingerprint powder
   b) magnetic fingerprint powder
   c) superglue followed by fingerprint powder
   d) proper use of lighting and photography

184. Latent prints etched in metal:

   a) are best developed using standard fingerprint powders.
   b) are best developed using superglue.
c) Are best developed using the flame method.
d) cannot normally be developed further and must be photographed as they appear.

185. The best technique for developing latent fingerprints on plastic is:

a) SPR  
b) DFO  
c) Redwop  
d) Magnetic powders

186. This technique has been known to develop print impressions on human skin:

a) ninhydrin  
b) iodine  
c) DFO  
d) None of the above

187. Charts are used to:

a) demonstrate the sufficiency of the examiner’s findings.
b) demonstrate how an examiner arrived at a conclusion regarding the fingerprints.
c) demonstrate the expertise of the examiner.
d) None of the above

188. Normally, ninhydrin-developed latent prints should be photographed using a ______ filter and Kodak Tri-X film.

a) blue  
b) yellow  
c) purple  
d) green

189. This is not a pattern area of the foot:

a) Ball pattern zone  
b) Plantar pattern zone  
c) Calcar pattern zone  
d) Tibolar pattern zone

190. The medial phalangeal zone is:

a) the area or finger joint located adjacent to the palm  
b) the second or middle joint of the finger
c) the area on the ball of the fingertips

d) the pattern vistige

191. These appear on all toes:

a) arch, loop and whorl patterns
b) horizontal or “arch” patterns
c) flexion creases
d) plantial zones

192. The Polaroid CU-5 is a:

a) wide angle lens camera
b) depth of field camera
c) close up camera
d) microscope camera

193. The Polilight is:

a) an alternate light source
b) a laser light source
c) an ultraviolet light source
d) an infrared light source

194. This can be used to recover prints from dust:

a) Electrostatic dust print lifter
b) Electronic dust print lifter
c) Electric dust print lifter
d) Electron dust print lifter

195. Bluhm and Lougheed (1968) found that ideal temperature-humidity conditions for preserving latent fingerprints on a nonporous surface is:

a) 10-25 degrees
b) 25-40 degrees
c) 40-55 degrees
d) 55-70 degrees

196. This is a commonly used as a light source when searching for latent prints:

a) Polilight
b) Laser
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197. Sweat glands, or _______ glands, are found on almost all surface skin areas of the body with their greatest density on the palmar surfaces of the hands and the plantar surfaces of the feet.
   a) eccrine
   b) endocrine
   c) epicrine
   d) eurocrine

198. Although this cannot be considered a practical latent fingerprint technique, a number of arson cases have been solved as a result of latent prints developed by:
   a) water
   b) heat
   c) air
   d) earth

199. The primary source of oils and fats found in perspiration is ______ , a secretion of the sebaceous glands.
   a) secrum
   b) sedum
   c) sebum
   d) selum

200. The inorganic ______ of perspiration present in latent print residue are the substances that react chemically with silver nitrate in solution, forming silver chloride, which darkens upon exposure to light.
   a) acids
   b) salts
   c) oils
   d) fats

201. The reaction between _______ and latent print residue is not considered a chemical reaction for it is absorbed by the residue.
   a) ninhydrin
202. When determining which latent print development technique to use in a particular instance, many factors may govern the selection, but the chemical composition of the latent print is _________ one of these factors.

a) always
b) never
c) not normally
d) generally

203. A group of synthetic and natural chemical compounds known as ________ may be used as fingerprint powders.

a) phosphors
b) dilutes
c) methalites
d) dermalics

204. Autoradiography is the highly specialized use of radioactive compounds or elements to develop and record latent fingerprints on surfaces such as ________.

a) metal and wood
b) wood and paper
c) metal and fabrics
d) paper and fabrics

205. Silicone rubber casting provides the best technique for accurately and permanently preserving ________ fingerprint impressions.

a) latent
b) visible
c) plastic
d) contaminated

206. Generally ______ silver nitrate solutions are used in fingerprint work.

a) 3% - 5%
b) 10% - 20%
c) 50%
d) 90% - 95%
207. There are 2 ways to develop silver nitrate images: _______ or with _______.
   a) chemically, heat
   b) chemically, light
   c) heat, light
   d) none of the above

208. Silver nitrate solution should be stored in a ______________.
   a) dark colored bottle or dark place.
   b) light colored bottle or light place
   c) heated bottle or heated place
   d) cooled bottle or cool place

209. ________ is a satisfactory clearing solution for both ninhydrin and silver nitrate.
   a) methonal
   b) water
   c) bleach
   d) alcohol

210. The only effective laser procedure developed to date for the examination of skin is vapor staining with ________.
   a) iodine
   b) DFO
   c) luminol
   d) rhodamine 6G

211. GOOD LUCK!
IAI Latent Print Examiner Certification Practice Exam

Answer Sheet

1. d
2. c
3. a
4. c
5. c
6. b
7. d
8. d
9. b
10. c
11. d
12. c
13. d
14. a
15. b
16. d
17. d
18. a
19. a
20. d
21. c
22. b
23. d
24. b
25. b
26. a
27. a
28. a
29. a
30. b
31. b
32. b
33. d
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34. c
35. d
36. b
37. b
38. b
39. c
40. a
41. b
42. c
43. d
44. a
45. a
46. d
47. b
48. d
49. c
50. a
51. b
52. a
53. d
54. b
55. c
56. d
57. d
58. b
59. c
60. b
61. c
62. b
63. d
64. c
65. d
66. c
67. a
68. d
69. c
70. a
71. b
72. b
73. c
74. b
75. a
76. b
77. b
78. c
79. a
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80. a
81. a
82. c
83. c
84. a
85. c
86. d
87. a
88. a
89. c
90. d
91. d
92. d
93. a
94. b
95. a
96. c
97. b
98. c
99. d
100. a
101. d
102. a
103. c
104. d
105. c
106. c
107. b
108. c
109. d
110. d
111. b
112. d
113. d
114. b
115. a
116. d
117. b
118. b
119. a
120. d
121. c
122. a
123. a
124. c
125. c
126. b
127. c
128. a
129. d
130. d
131. b
132. a
133. b
134. c
135. c
136. b
137. a
138. d
139. c
140. b
141. a
142. b
143. c
144. b
145. a
146. d
147. d
148. a
149. a
150. b
151. a
152. d
153. d
154. b
155. a
156. b
157. c
158. d
159. c
160. b
161. b
162. a
163. c
164. b
165. c
166. b
167. c
168. d
169. b
170. a
171. a
172. b
173. c
174. c
175. c
176. d
177. a
178. c
179. d
180. b
181. a
182. c
183. d
184. d
185. d
186. b
187. b
188. d
189. d
190. b
191. a
192. c
193. a
194. a
195. c
196. d
197. d
198. b
199. c
200. b
201. b
202. d
203. a
204. d
205. c
206. a
207. b
208. a
209. c
210. d
211. Good Luck!

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