

लोक सेवा आयोग
नेपाल विविध सेवा, रा.प.तृतीय श्रेणी रेखा विशेषज्ञ पदको खुला तथा आन्तरिक
प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

पाठ्यक्रमको रुपरेखा :- यस पाठ्यक्रमको आधारमा निम्नानुसार दुई चरणमा परीक्षा लिइने छ :
प्रथम चरण :- लिखित परीक्षा पूर्णाङ्क :- २००
द्वितीय चरण :- सामूहिक परीक्षण र अन्तर्वार्ता पूर्णाङ्क :- ४०

प्रथम चरण – लिखित परीक्षा योजना (Examination Scheme)

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या X अङ्कभार	समय
प्रथम	Fingerprints	१००	४०	वस्तुगत बहुवैकल्पिक (MCQs)	१००X१ = १००	१ घण्टा १५ मिनेट
द्वितीय	Handwriting Identification	१००	४०	विषयगत (Subjective)	१०X१० = १००	३ घण्टा

द्वितीय चरण

विषय	पूर्णाङ्क	परीक्षा प्रणाली	समय
सामूहिक परीक्षण (Group Test)	१०	सामूहिक छलफल (Group Discussion)	३० मिनेट
व्यक्तिगत अन्तर्वार्ता	३०	मौखिक	-

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।
- पाठ्यक्रमको प्रथम र द्वितीय पत्रको विषयवस्तु फरक फरक हुनेछन ।
- प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- प्रथम तथा द्वितीयपत्रका पाठ्यक्रमका एकाईहरुबाट सोधिने प्रश्नहरुको संख्या निम्नानुसार हुनेछ :

प्रथम पत्रका एकाई	1	2	3	4	5
प्रश्न संख्या	20	20	20	20	20
द्वितीय पत्रका खण्ड	A	B	C	D	
द्वितीय पत्रका एकाई	1	2	3	4	
प्रश्न संख्या	3	3	2	2	

- वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरुको गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अङ्क कट्टा गरिनेछ । तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन ।
- बहुवैकल्पिक प्रश्नहरु हुने परीक्षामा कुनै प्रकारको क्याल्कुलेटर (Calculator) प्रयोग गर्न पाइने छैन ।
- विषयगत प्रश्नका लागि तोकिएका १० अङ्कका प्रश्नहरुको हकमा १० अङ्कको एउटा लामो प्रश्न वा एउटै प्रश्नका दुई वा दुई भन्दा बढी भाग (Two or more parts of a single question) वा एउटा प्रश्न अन्तर्गत दुई वा बढी टिप्पणीहरु (Short notes) सोध्न सकिने छ ।
- द्वितीय पत्रमा प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरु हुनेछन् । परिक्षार्थीले प्रत्येक खण्डका प्रश्नहरुको उत्तर सोही खण्डको उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
- यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, ऐन, नियम तथा नीतिहरु परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
- यस भन्दा अगाडि लागू भएको माथि उल्लिखित समूहको पाठ्यक्रम खारेज गरिएको छ ।
- पाठ्यक्रम लागू मिति :- २०६६ / ६ / १ (२०७२/०७/२४ को निर्णय अनुसार सामूहिक परीक्षण समावेश)

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प्रथम पत्र : Fingerprints

Unit 1

- 1.1 Forensic Science with Reference to:** Factors of Forensic sciences, Definitions, History, Development and Scope with reference to:
 - 1.1.1 Definitions
 - 1.1.2 Fingerprints
 - 1.1.3 Handwriting
- 1.2 History of Fingerprints Science with special reference to the contribution of following Scientists:**
 - 1.2.1 Dr. Nehemiah Grew, Mercilio Malphini
 - 1.2.2 Thomas Bewick, Professor Jan Evangelist Purkinje
 - 1.2.3 Professor Juan Vucetich, Sir William Herchel,
 - 1.2.4 Dr. Henry Fauldas, Sir Francis Galton
 - 1.2.5 Sir Edward Richard Henry, Master Durga Prasad Upreti and Recent Nepalese Experts
- 1.3. Biological Significance of skin Patterns:**
 - 1.3.1 Basal or Generating layer
 - 1.3.2 Sweat pores, Ducts and nerves
 - 1.3.3 EPIDERMIS or Surface Layers
 - 1.3.3.1 Corneous Layer
 - 1.3.3.2 Transparent Layer
 - 1.3.3.3 Granular Layer
 - 1.3.3.4 Malpighinian Layer
 - 1.3.3.5 Generating Layer
 - 1.3.4 DERMIS or CORIUM layer
- 1.4 Definitions and their identifying characteristics of:**
 - 1.4.1 Friction skin, papillary ridges
 - 1.4.2 Furrow, Delta, Core, marking
 - 1.4.3 Inner and Outer terminus
 - 1.4.4 Type line, Creases and Scars, Ridge counting
 - 1.4.5 Nascent ridge, Hiatus, Roller and slab

Unit 2

- 2.1 Galton Details and their definitions with identifying values of:**
 - 2.1.1 Dots, Short ridge,
 - 2.1.2 Bifurcation or Fork, Enclosure, Change-over
 - 2.1.3 Ending and Beginning of the ridge
 - 2.1.4 Fragmentary ridge, Termination
 - 2.1.5 Hook, Continuous ridge
- 2.2 Ridges and their values for personal identification with special reference of Sir Francis Galton:**
 - 2.2.1 Permanency of Persistency
 - 2.2.2 Peculiarities or Individuality or Uniqueness
- 2.3. Definitions of Impressions and their values of:**
 - 2.3.1 Plain Impression and its comparison technique.

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- 2.3.2 Rolled Impression and its comparison technique.
- 2.3.3 Partial Impression and its comparison technique.
- 2.3.4 Blurred Impression and its comparison technique.
- 2.3.5 Kinds of forged fingerprint and detection
- 2.4 Ink and its values:**
 - 2.4.1 Writing ink
 - 2.4.2 Rubber Stamps ink
 - 2.4.3 Printers ink
 - 2.4.3 Litho machine ink
 - 2.4.4 Carbon and oil mixed ink
 - 2.4.5 Elements of good ink
- 2.5 Definition of patterns and their importance in personal identification system**
 - 2.5.1 Creases, their origin and purpose they serve scars and Creases. Subsidiary or Counter sunk ridges.
 - 2.5.2 Plain and Rolled impressions and how it is taken, Reasons for taking rolled impressions
 - 2.5.3 Fixed points of impressions – Delta, Core, Type of Lines.
 - 2.5.4 Arch – Plain Arch, Tented Arch, Exceptional Arch.
 - 2.5.5 Loop-Ulner Loop, Radial Loop, Nutant Loop.
 - 2.5.6 Whorls – Concentric Circular, Spiral, Bouble, Spiral Almond Shape.
 - 2.5.7 Composite – Central Pocket Loop, Lateral Pocket Loop and Accidentals
- 2.6 Personal Identification Systems**
 - 2.6.1 Bertillon's Measurement Theory
 - 2.6.2 Galton's Fingerprint Theory
 - 2.6.3 Poroscopy.
- 2.7 Theories of Scientific Identification Methods (ACE_V Method)**
 - 2.7.1 Analysis
 - 2.7.2 Comparison
 - 2.7.3 Evaluation
 - 2.7.4 Verification

Unit 3

- 3.1 Comparison of fingerprints:**
 - 3.1.1 Patterns
 - 3.1.2 Core and delta or inner and outer terminus
 - 3.1.3 Minutiae and their relative position
 - 3.1.4 Marking points in enlarged photographs
 - 3.1.5 Counting ridges between two points.
 - 3.1.6 Determining necessary identical points and its reason for positive opinion.
 - 3.1.7 Number of Numerical points for Identification with reference of United Kingdom, United States and India.
- 3.2 Selection of Specimen Fingerprints:**
 - 3.2.1 Authenticity and legally obtained.
 - 3.2.2 Rolled or plain prints.
 - 3.2.3 Effect of poor or blurred specimen.

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- 3.2.4 Advice how to take specimens.
- 3.3 How to take a good significant impression:**
 - 3.3.1 Selection of ink.
 - 3.3.2 Use of clean roller and slab
 - 3.3.3 Position of fingers
 - 3.3.4 Height of table and position of paper
 - 3.3.5 Methods of taking impression of new born babies.
 - 3.3.6 Methods of taking fingerprints of fresh and decomposed dead bodies.
 - 3.3.7 Advice how to take specimens.
- 3.4 Foot prints or Track Marks Examination**
 - 3.4.1 Reliability
 - 3.4.2 Causes of difficulties to comparison
 - 3.4.3 Incomplete Prints or Tracks
 - 3.4.4 Lack of sufficient ridge details and clearness
 - 3.4.5 Advice how to take Specimen of Foot prints or Tracks
 - 3.4.6 Causes of divergent opinions of experts
- 3.5 Various methods of Fingerprint photography, Scanning and printing Techniques with:**
 - 3.5.1 Under natural light
 - 3.5.2 Under artificial light
 - 3.5.3 Under ultra-violet light
 - 3.5.4 Under oblige light
 - 3.5.5. Under transparent light
 - 3.5.6 Selection of suitable filters.

Unit 4

- 4.1 Qualification, Duties, Reasons and Crime Investigation:**
 - 4.1.1 Qualification of Expert determined by the courts.
 - 4.1.2 Crime investigation by latent, plastic and visible prints.
 - 4.1.3 Forged, blurred and partial prints and their identification.
 - 4.1.4 Duty of an expert to the courts, lawyers and the society.
 - 4.1.5 Causes of divergent opinions of experts.
 - 4.1.6 Reasons of "Fingerprint Science is an exact Science".
 - 4.1.7 Compulsory elements of report writing
- 4.2 Equipments used in Fingerprint Examination:**
 - 4.2.1 Different powers and kinds of lenses
 - 4.2.2 Fingerprints comparators
 - 4.2.3 Various kinds of Microscopes
 - 4.2.4 Video Spectral compactor
 - 4.2.5 Laser Beam equipments
 - 4.2.6 Computer and related Software
 - 4.2.7 Scanner and Scanning procedures
- 4.3 Detection of Latent Fingerprints:**
 - 4.3.1 Law of Individuality and principle of Contact exchange.
 - 4.3.2 Acquaintance with prints on:
 - 4.3.2.1 Dust surface

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- 4.3.2.2 Blood
- 4.3.2.3 Paints
- 4.3.2.4 Grease
- 4.3.2.5 Plastic
- 4.3.2.6 Wax
- 4.3.2.7 Soap
- 4.3.2.8 Glass
- 4.3.2.9 Tile
- 4.3.2.10 Painted woods
- 4.3.2.11 Plain papers

Unit 5

5.1 Various Methods of Developments of Latent Prints

- 5.1.1 Use of powder of different colors
- 5.1.2 Developments by Chemical Methods
- 5.1.3 Iodine fuming
- 5.1.4 Ninhydrin
- 5.1.5 Silver nitrate
- 5.1.6 Preservation of developed prints

5.2 Legal provisions:

- 5.2.1 लिफा र यसका परिचयामक चिन्हहरु
- 5.2.2 प्रमाण ऐन, २०३१ ।
- 5.2.3 मुलुकी ऐन, अदालती बन्दोवस्तको ७८ नम्बर ।
- 5.2.4 मुलुकी ऐन, काजग जाँचको महल ।
- 5.2.5 मुलुकी ऐनको कित्तेको कागजको महल ।
- 5.2.6 औलाछापसंग सम्बन्धित सर्वोच्च अदालतका फैसलाहरु (सर्वोच्च अदालतबाट नेपाल कानून पत्रिकामा प्रकाशित मात्र)

5.3 Report writing and Answer in cross examination with:

- 5.3.1 Techniques of report writing
- 5.3.2 Necessary elements of a good report
- 5.3.3 Facts and their explanations
- 5.3.4 Reasons
- 5.3.5 Opinion with Demonstrative way

-----The End-----

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Model Questions for Paper I – Fingerprints

1. Which of the following inks most suitable for taking fingerprints?
(A) Writing (B) Rubber Stamp ink
(C) Carbon ink (D) Printer's Ink

Answer (D)

2. A writing is given to you; identify which of one movement has applied
(A) Finger movement (B) Wrist movement
(C) Fore-arm movement (D) Whole arm movement

Answer (C)

3. Which of these characteristics are most useful to determine the pen pressure of the standard handwritings?
(A) The letter designs. (B) The with of the strokes
(C) The film of ink of the strokes (D) The edge of the strokes

Answer (B)

4. The blunt ending, thick beginning and uneven ink flow in strokes are an indication of:
(A) Fast speed (B) Medium speed
(C) Slow Speed (D) Rapid speed

Answer (C)