

Laboratory Central Forensic Science Laboratory, 30, Gorachand Road, Kolkata, West Bengal

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6883

Page 1 of 12

Validity 07.02.2018 to 06.02.2020

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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FORENSIC TESTING

I.	BIOLOGY & DNA			
1.	Blood	Tetramethyl Benzidine Test	Working Procedure Manual in Biology; CFSL/KOL/BIOWPM Issue No. 01	Qualitative 10 ⁶ dilution
		Takayama Test	Working Procedure Manual in Biology; CFSL/KOL/BIOWPM Issue No. 01	Qualitative 1 µl of Blood or 0.1 mg of Haemoglobin
		Anti Human Haemoglobin Test	Working Procedure Manual in DNA Profiling: CFSL/KOL/DNA/WPM Issue No. 01	Qualitative 0.05 µg of Haemoglobin
2.	Semen	Acid Phosphatase	Working Procedure Manual in Biology; CFSL/KOL/BIOWPM Issue No. 01	Qualitative 1 µl of Semen
		P30	Working Procedure Manual in DNA Profiling: CFSL/KOL/DNA/WPM; Issue No. 01	Qualitative 1 µl of Semen
		Microscopic Examination	Working Procedure Manual in Biology; CFSL/KOL/BIOWPM Issue No. 01	Qualitative 0.5 µl of Semen
3.	Saliva	Amylase Test	Working Procedure Manual in Biology; CFSL/KOL/BIOWPM Issue No. 01	Qualitative 10 µl of Saliva

Laboratory Central Forensic Science Laboratory, 30, Gorachand Road, Kolkata, West Bengal

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6883

Page 2 of 12

Validity 07.02.2018 to 06.02.2020

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Saligae Test	Working Procedure Manual in DNA Profiling: CFSL/KOL/DNA/WPM Issue No. 01	Qualitative 5 µl of Saliva
4.	Hair	Morphologic and Microscopic Examination	Working Procedure Manual in Biology; CFSL/KOL/BIO/WPM Issue No. 01	1 strand for origin; >10 strands for comparison
5.	Blood for Species Identification	Double Diffusion Test	Working Procedure Manual in Biology; CFSL/KOL/BIO/WPM; Issue No. 01	Qualitative > 1µL of Blood in stain
	Blood Group Identification	Absorption Elution		
6.	Human Blood, Semen, Vaginal Secretions, Anal Swab, Saliva, Bone, Tooth Without Clinical Filling, Hair with Root, Muscle Tissue, Viscera & Other Tissues	DNA Extraction	Working Procedure Manual in DNA Profiling: CFSL/KOL/DNA/WPM Issue No. 01	>500 nucleated cells
		Yield Gel	Working Procedure Manual in DNA Profiling: CFSL/KOL/DNA/WPM Issue No. 01	20 ng to 100 ng
		Amplification of Short Tandem Repeats (Autosomal & Y Chromosomal)	Working Procedure Manual in DNA Profiling: CFSL/KOL/DNA/WPM Issue No. 01	0.5 ng to 1 ng
		Fragment Sizing and Genotyping with software	Working Procedure Manual in DNA Profiling: CFSL/KOL/DNA/WPM Issue No. 01	(±)0.4 to 0.5 bases
		Statistical Analyses	Working Procedure Manual in DNA Profiling: CFSL/KOL/DNA/WPM Issue No. 01	Qualitative

Laboratory

Central Forensic Science Laboratory, 30, Gorachand Road, Kolkata,
West Bengal

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number

TC-6883

Page 3 of 12

Validity

07.02.2018 to 06.02.2020

Last Amended on --

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II.	BALLISTICS			
1.	Firearms and parts thereof	Physical Examination Test Firing Chemical Analysis	Working Procedure Manual In Ballistics; CFSL/KOL/BALL/WPM Issue No. 01;	Qualitative
2.	Pellets, Bullets, Cartridge Cases, Cartridges and its Components	Physical Examination Microscopic Examination Test Firing Comparative Examination	Working Procedure Manual In Ballistics; CFSL/KOL/BALL/WPM Issue No. 01	Qualitative
3.	Targets of Firing	Physical Examination Microscopic Examination Test Firing Comparative Examination Instrumental Examination	Working Procedure Manual In Ballistics; CFSL/KOL/BALL/WPM Issue No. 01	Qualitative
4.	Gun Shot Residue	Physical Examination Chemical Analysis SEM-EDX Analysis	Working Procedure Manual In Ballistics; CFSL/KOL/BALL/WPM Issue No. 01	Qualitative
III.	FORENSIC ELECTRONIC INVESTIGATION (COMPUTER FORENSIC)			
1.	Hard disk	Disk forensic Bit stream imaging, cloning OS analysis, Data analysis Internet artifacts, Registry forensic, E-mail Social networking site artifacts and chat extraction. Retrieval of detected / hidden data / timeline examination and keyword search	Working Procedure Manual in Computer Forensic CFSL/KOL/CF/WPM Issue No. 01	Qualitative

Laboratory Central Forensic Science Laboratory, 30, Gorachand Road, Kolkata, West Bengal

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6883

Page 4 of 12

Validity 07.02.2018 to 06.02.2020

Last Amended on --

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2.	Mobile phones, SIM cards, Memory cards & Smart phones Blackberry, Android)	Data extraction of IMEI, Call logs, Contacts, Internet artifacts, E-mail GPRS settings, CDR	Working Procedure Manual in Computer Forensic CFSL/KOL/CF/WPM Issue No. 01	Qualitative
3.	Secondary storage devices (CD, DVD, Pen Drive, Memory Card)	Data extraction and tracing origin of data to devices / users retrieval of detected / hidden data.	Working Procedure Manual in Computer Forensic CFSL/KOL/CF/WPM Issue No. 01	Qualitative
4.	Devices with Internal Memory (Music Player, Digital Camera, Spycam, Medical Equipment)	Data extraction and tracing origin of data to devices / users retrieval of detected / hidden data	Working Procedure Manual in Computer Forensic CFSL/KOL/CF/WPM Issue No. 01	Qualitative
5.	Data acquired from live memory and servers	Data extraction and tracing origin of data to devices / users retrieval of detected / hidden data	Working Procedure Manual in Computer Forensic CFSL/KOL/CF/WPM Issue No. 01	Qualitative
6.	CCTV analysis	Data extraction / retrieval of detected / hidden data / timeline examination.	Working Procedure Manual in Computer Forensic CFSL/KOL/CF/WPM Issue No. 01	Qualitative
IV.	CHEMISTRY			
1.	Hand wash / Pocket wash / Swab from currency note in bribery cases	Detection of Phenolphthalein		
		pH	CFSL/KOL/CHEM/WPM/02 Page. 11, Issue No. 01	0 to 14
		Acid & Alkali	CFSL/KOL/CHEM/WPM/02 Page. 11; Issue No. 01	Qualitative
		Identification	CFSL/KOL/CHEM/WPM/02 Page. 11; Issue No. 01 (Thin Layer	Qualitative Up to 1 µg/ml

Laboratory Central Forensic Science Laboratory, 30, Gorachand Road, Kolkata, West Bengal

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6883

Page 5 of 12

Validity 07.02.2018 to 06.02.2020

Last Amended on --

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			Chromatography, UV-Visible Spectrophotometry)	
		Detection of Carbonate ion		
		Barium chloride	CFSL/KOL/CHEM/WPM/02 Page. 15; Issue No. 01;	1 mg/l
		Silver Nitrate test	CFSL/KOL/CHEM/WPM/02 Page. 15; Issue No. 01	1 mg/l
		Lime Water test	CFSL/KOL/CHEM/WPM/02 Page. 15; Issue No. 01	Qualitative
		Magnesium sulphate test	CFSL/KOL/CHEM/WPM/02 Page. 15; Issue No. 01;	1 mg/l
		Detection of Sodium ion Flame test	CFSL/KOL/CHEM/WPM/02 Page. 17; Issue No. 01;	1 mg/l
		Zinc Uranyl Acetate Test	CFSL/KOL/CHEM/WPM/02 Page. 16; Issue No. 01;	1 mg/l
V.	NARCOTICS			
1.	Plant Materials: Opium Morphine, Codeine Thebaine	Marquis Test	CFSL/KOL/CHEM/WPM/01 Issue No. 01;	0.1 g/l
		Mecke's Test	CFSL/KOL/CHEM/WPM/01 Issue No. 01	0.1 g/l
		Identification	CFSL/KOL/CHEM/WPM/01 Issue No. 01 (Thin Layer Chromatography, Gas Chromatography – Mass Spectrometry)	1.0 µg/l to 0.1 g/l LOD : 10 ⁻⁵ mg/ml in GCMS
2.	Cannabis Ganja Charas, Hasish	Visualization for Morphological analysis (Macroscopic & Microscopic)	CFSL/KOL/CHEM/WPM/01 Issue No. 01	Qualitative
		Color Test (Fast Blue B salt test)	CFSL/KOL/CHEM/WPM/01 Issue No. 01	0.1g/l

Laboratory **Central Forensic Science Laboratory, 30, Gorachand Road, Kolkata, West Bengal**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-6883**

Page 6 of 12

Validity **07.02.2018 to 06.02.2020**

Last Amended on --

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		Identification	CFSL/KOL/CHEM/WPM/01 Issue No. 01 (Thin Layer Chromatography/ Gas Chromatography –Mass Spectrometry)	1.0 µg/l to 0.1 g/l
3.	Drug of abuse: (Powder, tablets, capsules, street drugs samples Benzodiazepines (Nitrazepam, Alprazolam, Diazepam, Oxazepam, Clonazepam, Lorazepam	Color test (Formaldehyde Sulphuric acid)	Clark's Isolation and Identification of Drugs, 2nd Edition, Page 134 CFSL/KOL/CHEM/WPM/02 Issue No. 01	0.1g/l
		Identification	CFSL/KOL/CHEM/WPM/02 Issue No. 01 (Gas Chromatography – Mass Spectrometry/Infra-red Spectroscopy)	1.0 µg/l
4.	Barbiturates (Phenobarbital)	Color test (Dille-Koppanyi)	CFSL/KOL/CHEM/WPM/01 Issue No. 01	0.1g/l
		Identification	CFSL/KOL/CHEM/WPM/01; Issue No. 01 (Thin Layer Chromatography/ UV-Visible Spectrophotometry/ Infra-red Spectroscopy)	1.0 µg/l to 0.1 g/l
5.	Drugs as per NDPS act 1985	Identification	CFSL/KOL/CHEM/WPM/01 ; Issue No. 01 (Thin Layer Chromatography/ Gas Chromatography –Mass Spectrometry/ UV-Spectroscopy Infra Red Spectroscopy)	1.0 µg/l to 0.1 g/l

Laboratory

**Central Forensic Science Laboratory, 30, Gorachand Road, Kolkata,
West Bengal**

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number

TC-6883

Page 7 of 12

Validity

07.02.2018 to 06.02.2020

Last Amended on --

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VI.	QUESTIONED DOCUMENTS			
1.	Handwritings in originals & in reproduced copies	Physical Examination Microscopic Examination, Physical Matching, Use of different light sources in examination of alterations	Working Procedure Manual No. CFSL/KOL/DOCU/WPM Issue No. 02, Chapter 6 to 8 & ASTM Standards E-2290-07A	Qualitative
2.	Alteration in Documents		Working Procedure Manual No. CFSL/KOL/DOCU/WPM Issue No. 02, Chapter 9 & ASTM Standards E-2290-03	Qualitative
3.	Printed Materials		Working Procedure Manual No. CFSL/KOL/DOCU/WPM Issue No. 02, Chapter 10 & ASTM Standards E-2389-05	Qualitative
4.	Type written Materials		Working Procedure Manual No. CFSL/KOL/DOCU/WPM Issue No. 02, Chapter 12 & ASTM Standards E-2494-07	Qualitative
5.	Stamp Impressions		Working Procedure Manual No. CFSL/KOL/DOCU/WPM Issue No. 02, Chapter 16 to 17 & ASTM Standards E-2286-07, E2289-03	Qualitative
6.	Paper		Working Procedure Manual No. CFSL/KOL/DOCU/WPM Issue No. 02, Chapter 15 & ASTM Standards E-2325-05	Qualitative

Pankaj Johri
Convenor

Avijit Das
Program Director

Laboratory **Central Forensic Science Laboratory, 30, Gorachand Road, Kolkata, West Bengal**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-6883**

Page 8 of 12

Validity **07.02.2018 to 06.02.2020**

Last Amended on --

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7.	Ink		Working Procedure Manual No. CFSL/KOL/DOCU/WPM Issue No. 02 Chapter 18 ASTM Standards E-1789-04	Qualitative
8.	Toner in Documents produced by DTP Process		Working Procedure Manual No. CFSL/KOL/DOCU/WPM Issue No. 02, Chapter 13 to 14 & ASTM Standards E-2390-06, E2389-05	Qualitative
VII.	EXPLOSIVES			
1.	Solid / liquid substances, Solid Powder, debris materials and post explosion residues for detection of Explosives, cations, anions and elements tested for			
	Nitrate ion	(Griess Reagent + Zn dust) Test	CFSL/KOL/EXP/WPM Issue No. 01	3.33 mg/ml
	Sulphide ion	Sodium Nitroprusside Test		3.33 mg/ml
	Potassium ion	Sodium Cobalt nitrite Test		0.0333 mg/ml
	Ammonium ion	Nessler's Reagent Test		3.33 mg/ml
	Arsenic ion	Reinsch's Test		0.033 mg/ml
	Sulphur (Pyridine extract)	Pyridine + NaOH Test		0.333 mg/ml
	Aluminium (NaOH extract)	Alizarine-S Test		0.333 mg/ml

Laboratory

Central Forensic Science Laboratory, 30, Gorachand Road, Kolkata, West Bengal

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number

TC-6883

Page 9 of 12

Validity

07.02.2018 to 06.02.2020

Last Amended on --

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2.	Organic Explosives Components			
a.	TNT	Colour Test (Alcoholic KOH)	CFSL/KOL/EXP/WPM Issue No. 01	Qualitative
		Identification	CFSL/KOL/EXP/WPM Issue No. 01 (Thin Layer Chromatography/ HPLC/Gas Chromatography –Mass Spectrometry)	m/z ions:210,89,63, 30,134,193,180,149,76, 62.
b.	RDX	Color test (Thymol + H ₂ SO ₄ +Ethanol)	CFSL/KOL/EXP/WPM Issue No. 01	Qualitative
		Identification	CFSL/KOL/EXP/WPM Issue No. 01; (Thin Layer Chromatography/ HPLC/Gas Chromatography –Mass Spectrometry)	m/z ions: 46,30,120,42,75,44,128, 56,71,41.
c.	PETN	Color test (Di phenyl amine)	CFSL/KOL/EXP/WPM Issue No. 01	Qualitative
		Identification	CFSL/KOL/EXP/WPM Issue No. 01 (Thin Layer Chromatography/ HPLC/Gas Chromatography –Mass Spectrometry)	m/z ions fractions: 76, 46, 57, 55, 56, 60, 43, 47, 97, 71
VIII.	PHYSICS			
1.	Tool marks (metal, fabrics, wood)	Physical comparison Photography Microscopic examination Test impression comparison	Working Procedure Manual Physics WPM – Physics-1 Issue No. 01	Qualitative

Laboratory **Central Forensic Science Laboratory, 30, Gorachand Road, Kolkata, West Bengal**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-6883**

Page 10 of 12

Validity **07.02.2018 to 06.02.2020**

Last Amended on --

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2.	Soil (Identification of source correspondence comparison)	Physical comparison Photography Microscopic examination Particle size distribution Density Gradient Analysis	Working Procedure Manual Physics WPM – Physics-1 Issue No. 01	Qualitative
3.	Broken Objects (Broken Parts of Material Like Wood, Metal, Glass)	Physical comparison Photography Microscopic examination Physical Matching	Working Procedure Manual Physics WPM – Physics-1 Issue No. 01	Qualitative
4.	Impression (Lottery Ticket, Counterfeit Currency, Copy Right / Trademark goods, foot / Tyre impressions)	Physical comparison Photography Microscopic examination Fluorescence Optical character analysis	Working Procedure Manual Physics WPM – Physics-1 Issue No. 01	Qualitative
5.	Restoration of erased identification marks	Photography Microscopic examination (Chemical Etching)	Working Procedure Manual Physics WPM – Physics-1 Issue No. 01	Qualitative
IX.	TOXICOLOGY			
1.	Viscera sample, blood, gastric lavage & poisons containing Methyl alcohol	Chromotropic acid	Working Procedure Manual No. CFSL/KOL/TOX/WPM Issue No 01	Qualitative
2.	Ethyl alcohol	Iodoform test Sulphomolybdic acid test	Working Procedure Manual No. CFSL/KOL/TOX/WPM Issue No 01	Qualitative Qualitative

Laboratory **Central Forensic Science Laboratory, 30, Gorachand Road, Kolkata, West Bengal**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-6883**

Page 11 of 12

Validity **07.02.2018 to 06.02.2020**

Last Amended on --

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3.	Phosphide	Ammonium Molybdate Mercuric bromide	Working Procedure Manual No. CFSL/KOL/TOX/WPM Issue No 01	Qualitative
4.	Cyanide	Perssian blue Test (Ferric thiocyanate)	Working Procedure Manual No. CFSL/KOL/TOX/WPM Issue No 01	Qualitative
5.	Viscera sample, blood, gastric lavage containers	Reinsch Test, Ammonium hydroxide Test , Fiegel Test, Dithizone Test, Dilnitric acid Test, Aluminone test, Alizarin Test, Potassium ferrocyanide test , Copper Sulphate Test, Sulphanilic acid test, Silver Nitrate Test, Lead acetate test, Barium chloride	Working Procedure Manual No. CFSL/KOL/TOX/WPM Issue No 01	Qualitative
6.	Viscera Sample, Blood, Gastric Lavage, Containing Insecticides. Malathion, parathion, Endosulfan, Iso-propoxur Allethrin & Cypermethrin	Color test	Working Procedure Manual No. CFSL/KOL/TOX/WPM Issue No 01	Qualitative
		Identification	Working Procedure Manual No. CFSL/KOL/TOX/WPM Issue No 01 (Thin layer chromatography/ Gas chromatographic -mass spectrometry)	Qualitative
7.	Viscera sample, blood, gastric lavage containing alkiloids, Benzodiazepines, Barbiturates, Paracetamol	Color test (Dragon droffs & Forrest reagent.)	Working Procedure Manual No. CFSL/KOL/TOX/WPM Issue No 01	Qualitative

Laboratory Central Forensic Science Laboratory, 30, Gorachand Road, Kolkata, West Bengal

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6883

Page 12 of 12

Validity 07.02.2018 to 06.02.2020

Last Amended on --

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8.	Viscera Sample, Blood, Gastric Lavage & Poisons Containers	Identification of poison	Working Procedure Manual No. CFSL/KOL/TOX/WPM Issue No 01	Qualitative