

Laboratory Central Forensic Science Laboratory, Directorate of Forensic Science Services, MHA, GOI, Ramanthapur, Hyderabad, Telangana

Accreditation Standard ISO/IEC 17025: 2005

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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.	BALLISTICS			
1.	Firearms	Examination of Firearms or Parts Thereof/Manufacturing Tool by Checking of Components and Test Firing	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
		Examination of Serviceability / Working Condition of Firearm by Test Firing.	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
		Examination of Fire Arm Prone to Accidental Discharge by Trigger Pull Test, Drop Test, Checking of Components	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
		Examination of Firearm To Ensure Whether Their Parts are Tampered With or Not by Checking of Components	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
		Identification of Firearm for Type, Make and Model by Checking of Trade Marks, Proof Marks, Serial Nos., Measurement of Physical Dimensions	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
		Restoration of Erased Marks on Firearms by Checking of Components	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative

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		Barrel Wash Examination by Chemical Tests	Working procedure Manual Ballistics Doc. 11, Issue No:3	Nitrite-0.01 ug Lead-0.1 ug
2.	Ammunition/ part thereof	Examination of Firearms or Parts Thereof/Manufacturing Tool by Checking of Components and Test Firing	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
		Identification of Ammunition/ Parts Thereof For Type, Make and Caliber by Class Characteristic Tests	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
		Identification of Bullets/Slug/ Parts Thereof by Class Characteristic Tests	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
		Identification of Shots and Pellets by Physical Tests	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
		Identification of Wads and Wad Pieces by Physical Tests	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
		Identification of Propellant Charge by Physical and Chemical Tests	Working procedure Manual Ballistics Doc. 11, Issue No:3	Nitrite-0.01 ug Lead-0.1 ug
3.	Fired bullet cartridge cases for identification and linkage	Linkage of Fired /Misfired Cartridges by Test Firing Microscopic Examination, Measurement of Physical Dimension and Comparison.	Working procedure Manual Ballistics Doc. 11, Issue No:3	Magnification range- 4 x to 80 x

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		Linkage of Fired Bullet/Bullet Fragments With Rifled Firearm by Test Firing, Microscopic Examination, Measurement of Physical Dimensions and Comparison	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
		Linkage of Fired Bullet Fragments With Smooth Bore/ Unrifled Firearm by Test Firing, Microscopic Examination, and Measurement of Physical Dimensions and Comparison	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
4.	Target/tissue material	Examination of Target Involved in Shooting by-Physical/ Microscopic Examination For Presence of GSR Pattern and Chemical Tests	Working procedure Manual Ballistics Doc. 11, Issue No:3	Nitrite-0.01 ug Lead-0.1 ug
		Measurement of Wound Ballistics Parameter By, Test Firing, on Simulated Targets and Wound Ballistics Studies	Working procedure Manual Ballistics Doc. 11, Issue No:3	Qualitative
5.	Gunshot residues	GSR Analysis by SEM-EDXRA	Working procedure Manual Ballistics Doc. 11, Issue No:3	Magnification range 15 x to 300 kx Resolution of EDX- 133 ev.

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II.	BIOLOGY			
1.	Blood	Benzidine Test Gel Diffusion Test Blood Grouping Test	Working procedure Manual Biology Doc. 12, Issue No 4	Qualitative
2.	Semen	Acid Phosphatase Test. Microscopical Identification. P.30 Semen Specific Protein Test	Working procedure Manual Biology Doc. 12, Issue No 4	Qualitative
3.	Saliva	Starch Amylase Test	Working procedure Manual Biology Doc. 12, Issue No 4	Qualitative
III.	DNA FINGERPRINTING			
1.	Blood, Semen, Nail, Clippings, Teeth, Bone, Vaginal Swabs, Bucal Swabs, Hair Root	Extraction of DNA from liquid/dried biological specimen for Nuclear DNA	Working procedure Manual DNA Typing ,Doc. 19 Issue No 3 (A Phenol- Chloroform extraction, FTA Paper Technique Silica Based Techniques	Qualitative
		DNA Quantification	Working procedure Manual DNA Typing ,Doc. 19 Issue No 3 (Gel Electrophoresis Quantitative PCR technique)	0.5 to 5.0 ng/band
		Nuclear DNA Typing (Autosomal and Y-STR)	Capillary Electrophoresis	50 rfu

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IV.	CHEMISTRY			
1.	Alcohol (Liquor, Ethanol)	Examination of alcohol	Working Procedure Manual Chemistry Doc. 13, Issue No 4 Issue Date: 8.8.2013 (Gas Chromatography, specific gravity) IS 3752	10 to 50 µg /ml 1 to 10% of alcohol v/v and proof spirit 1 to 10 µg/ml
2.	Acid and Alkalies	Examination of Acid Alkali Throwing Cases	Working Procedure Manual Chemistry Doc. 13, Issue No 4	1 to 14
3.	Hydrocarbon and Fire Debris (Arson Case)	Detection of Petroleum Products Like Petrol, Kerosene, Diesel. & Their Residues in Fire Debris	Working Procedure Manual Chemistry Doc. 13, Issue No 4 (Gas Chromatography, Thin Layer Chromatography)	Qualitative
4.	Petroleum Products	Examination of Petroleum Products For Their Identification & Their Genuinity Distillation Flash Point	Working Procedure Manual Chemistry Doc. 13, Issue No 4	1 ul/ml to 10ul/ml
5.	Dyes and Pigments (Trap Cases)	Detection of Phenolphthalein, Sodium Ions, Carbonate Ions pH Colour	Working Procedure Manual Chemistry Doc. 13, Issue No 4 (TLC,HPLC, Spectrophotometry)	1 to 14
6.	Miscellaneous Exhibits	Chemical analysis pH Colour	Working Procedure Manual Chemistry Doc. 13, Issue No 4 Chromatography, Spectrophotometry,GC-MS,SEM-EDX	Qualitative

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V.	NARCOTICS			
1.	Opium, Morphine & Poppy straw , Heroin Cocaine, Amphetamine/ Methamphetamine , Methaqualone/ Mecloqualone, Barbiturates, Benzodiazepines, Mescaline, Lysergide (LSD), Psilocybin/ Psilocin	Analysis of cocaine in crime exhibits Colour	WPM NDPS Doc No-13, Issue No : 4 (TLC, HPLC, GC, GC-MS UV-VIS Spectrophotometry IR/FT-IR)	1 µg/ml to 50 µg/ml 100 ng/ml to 1000 ng/ml 200 µg/ml to 300 µg/ml
2.	Cannabis Products charas, ganja, Bhang	Analysis of cannabis products in crime exhibits		1 µg/ml to 50 µg/ml 100 ng/ml to 1000 ng/ml 200 µg/ml to 300 µg/ml
VI.	EXPLOSIVES			
1.	Explosives/ Explosive debris	Detection of Explosives and Ingredients	WPM Explosive Doc No -16 Issue No:3 TLC,GC-MS FTIR	10 µg to 100 µg
2.	Inorganic explosives/ Ingredients Chloride, Sulphate Nitrate, Nitrite Chlorate, Thio Cyanate, Thio Sulphate, Perchlorate Phosphate,	Detection of inorganic Explosives/ ingredients	WPM Explosive Doc No -16 Issue No :3 (TLC,GC-MS FTIR)	50 µg to 100 µg

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	Ammonium, Arsenic, Antimony Aluminium, Sulphur, Phosphorus, Carbon, Sodium, Potassium, Barium, Calcium Strontium, Magnesium			
3.	Diffused and post blast low & high explosives	Detection of Explosives and Ingredients	WPM Explosive Doc No -16 Issue No :3 Issue Date:13.06.2013 (TLC,GC-MS FTIR)	10 µg to 100 µg
4.	Pyrotechnics (as mentioned in Sr.No.1a and & 1b)	Detection and identification of ingredients	WPM Explosive Doc No -16 Issue No :3 (FTIR)	20 µg to 50 µg
VII.	PHYSICS			
1.	Tool marks & impressions	Identification & comparison of known and questioned marks and impressions	WPM Physics, Doc No -17 Issue No:3	Qualitative
2.	Foot prints & shoe prints	Identification & comparison of known and questioned foot impression/ footwear/ foot casting /prints		Qualitative
3.	Tyre prints	Identification & comparison of known and questioned Tyre impression/Tyre casting /Tyreprints		Qualitative

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4.	Cement, Concrete & Mortar	Identification for quality and adulteration		Qualitative
5.	Glass	Identification and comparison of known and questioned broken glass pieces.		Qualitative
6.	Soil	Comparison of known and questioned samples		Qualitative
7.	Electrical failures	Cause of fire due to electrical failures – short circuit cables/wires.		Qualitative
8.	Restoration of numbers/impressions on metals and non-metals.	Comparison of known & questioned samples		Qualitative
9.	Paints and pigments	Comparison of known & questioned samples		Qualitative
10.	Fibres and fabric.	Comparison of known and questioned samples.		Qualitative
11.	Physical examination of Miscellaneous items.	To find out the working condition as per the technical requirement of items.		Qualitative
12.	Broken and severed parts.	Comparison of broken pieces from known and questioned parts.		Qualitative
13.	Counterfeit currency notes.	Examination of Counterfeit currency notes/ bank notes.		Qualitative

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VIII.	TOXICOLOGY			
1.	Visceral material (stomach and intestine with contents, liver, spleen, kidney, lungs, brain, heart)	Detection of poison/drugs qualitative analysis of poisons/drugs	WPM Toxicology Doc No -18, Issue No:4 (TLC, GC, GC-MS)	1ug/ml to 50 µg/ml
2.	Blood, urine and stomach aspirate	Detection of poison/drugs	WPM Toxicology Doc No -18, Issue No 4 (TLC, GC,GC-MS)	10 to 50 µg/ml 5 to 10 µg/ml 1 to 10 µg/ml 100 to 1000 ng/ml 200 to 300µg/ml
	Blood, urine drunkenness cases	Detection by iodoform tests and potassium dichromate test and quantitative estimation	WPM Toxicology Doc No -18, Issue No 4 (Kozelka and Hines method GC)	0.08 milligram/ml 1 to 10 µg/ml
3.	Nail, hair and bone.	Detection of metallic poison	WPM Toxicology Doc No -18, Issue No 4 (SEM EDX)	10 to 100 µg /ml
4.	Remnants/control of the poisons/drugs as such or associated with various matrices.	Qualitative and Quantitative analysis of poisonous and Drugs. Detection of poison/drugs	WPM Toxicology Doc No -18, Issue No 4 (TLC, HPLC, GC,GC-MS FT-IR)	1ug/ml to 50 µg/ml 100 to 1000 ng/ml
IX.	FORENSIC DOCUMENT - QUESTIONED DOCUMENTS			
1.	Handwritten items	Examination of Handwritten items	Working Procedure Manual Documents Doc no-14 Issue No: 4	Qualitative

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2.	Indentations	Examination of Indentations		Qualitative
3.	Paper	Examination of Paper(Non –destructive)		Qualitative
4.	Altered Documents	Examination of Altered documents		Qualitative
5.	Dry seal impressions	Examination of Dry seal impressions		Qualitative
6.	Paper cuts, tear perforations.	Examination of Paper cuts, tear perforations		Qualitative
7.	Rubber stamps	Examination of Rubber stamps		Qualitative
8.	Documents produced with toner technology	Examination of Documents produced with toner technology		Qualitative
X.	Forensic Electronic Investigation			
1.	Computer Forensic Examination	HDD Forensics Optical Media Forensics Flash Media Forensics	Working Procedure Manual Computer Forensic Examination Doc no-31 Issue No: 1 Issue Date 10.08.2016	Qualitative
2.	Mobile phone Forensic Examination.	Physical, File System and Logical Level Forensic of GSM, CDMA Mobiles SIM Card Analysis	Working Procedure Manual Mobile Phone Forensic Examination Doc no-32 Issue No: 1 Issue Date 10.08.2016	Qualitative