

## IMPORTANCE OF FORENSIC SCIENCE TO DETECT CRIME AND CRIMINALS IN CRIMINAL JUSTICE SYSTEM

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### **ABSTRACT:**

In the Modern time, Forensic science is an integrated part of criminal justice system. Criminals are exploiting scientific technology and adopting new methods and techniques for committing offences. In this changing scenario of crime, the role of forensic science and its tools and techniques is very important to investigate and detect the crime and criminals. Basic purpose of this research paper is role of forensic science regarding crime detecting process. Science has been used in crime investigation in one form or another for centuries.

Here need of the study are a method of measuring different parts of the body to identify criminals. The results of that method were encouraging. But that method was only useful for adults and there was room for individual errors in the measurements which directly reduced the reliability of the method. The field of forensic science is vast. Different types of physical samples can be obtained from different crimes depending on the crime and location. Any object that exists can become a specimen at any time. This laboratory includes different disciplines of science like physics, chemistry, biology, serology etc. The sample or samples are analysed in one or more sections as required. Modern analytical methods and procedures of all branches of science are adopted in the analysis.

The multi-departmental Forensic Science Laboratory functions in mutual interdepartmental cooperation and today exists as a separate faculty. The tests performed in this laboratory are subject to the jurisdiction of criminal, civil and regulatory laws and the analysis of samples is carried out in such a way as to satisfy the existing legal requirements. This paper is helpful to students and researcher in field of forensic science.

### **KEYWORDS:**

Forensic science, Forensic criminology, Applied criminology, Historical development of the Forensic science, Crime scene investigation, Legal Observation, criminal justice system.

## **INTRODUCTION:**

Forensic science is the science that helps in the investigation of crimes. Using science in the study of physical objects/things or theoretical problems, the results of which are accepted as scientific evidence in a court of law. In another sense, forensic science is the application of scientific methods and principles in the investigation of crime and judicial discipline.

The word forensic is derived from the Latin word 'francis', meaning 'forum' in English. In modern parlance it means 'court of justice' in English. Thus in a broad sense forensic science means the science related to the court.

Scientific rules, principles, knowledge, information and various methods are tested on the judicial matters like objects/substances etc. and test reports are prepared based on the results obtained Which is presented as 'scientific evidence' in court.

## **SCOPE AND KIND OF SAMPLE:**

The field of forensic science is vast. Different types of physical samples can be obtained from different crimes depending on the crime and location. Any object that exists can become a specimen at any time. Glass or paint particles, clay, paper, cloth, thread, chemicals, drugs, drugs, blood, bloody clothes or weapons, saliva, hair, vegetation, bones, weapon wear marks, weapon parts, gun, revolver, gun bullet, cartridge , Explosive substance, its remnants, documents, parts of machines, remnants of rebellion are brought to the Forensic Science Laboratory for scientific analysis. This laboratory includes different disciplines of science like physics, chemistry, biology, serology etc. The sample or samples are analyzed in one or more sections as required. Modern analytical methods and procedures of all branches of science are adopted in the analysis. The multi-departmental Forensic Science Laboratory functions in mutual interdepartmental cooperation and today exists as a separate faculty. The tests performed in this laboratory are subject to the jurisdiction of criminal, civil and regulatory laws and the analysis of samples is carried out in such a way as to satisfy the existing legal requirements.

## **IMPORTANT DOCTRINES OF FORENSIC SCIENCE:**

The rules and principles of different disciplines of science are the foundation of forensic science. Also, this science is based on some important principles. To understand the process of crime scene investigation, it is very essential to discuss the doctrines of forensic science applicable to the criminal investigation.

- (1) **Principle of mutual exchange:** According to the view presented by the French scientist Edmond Locard in 1928, when two objects come into contact with each other, there is a knowingly or unknowing exchange of something between them in a subtle or large form and thus both objects leave a mark of their identity on each other. In short, when a person commits a crime, that person or the instrument/weapon used by him leaves some mark of his identity on the scene of the crime or on the victim of the crime and carries with him some mark of identity on the scene of the crime or the victim. Thus, there is always an interactive exchange of some signs of identity between the perpetrator, the crime scene, the victim and the objects involved in the crime. Interchangeable physical signs are known as physical clues or exhibits and are used as scientific evidence to link the criminal to the crime. In cases like burglary and theft, fingerprints found at the crime scene and crime scene dust from the suspect's clothes, boots, etc., in case of a vehicle accident, paint wear marks between the vehicles involved in the accident, etc. are examples of this.
- (2) **Law of Uniqueness:** each thing or object of nature or man-made in the world has its own characteristic or feature, which cannot be duplicated in another thing or object. That is, it cannot be an exact copy of the object – in other words, no two objects in the world can ever be identical in every way. Even between things that look similar, there is some difference in a subtle or big form. If a difference (separation) is not found, it may be due to insufficient discriminability of the analysis method. Examples of these are weapon marks found at the crime scene, abrasion marks on gun bullets etc.
- (3) **Principle of Analysis:** According to the context of the analysis, "the analysis cannot be better than the sample it comes from". It emphasizes correct sampling and packing of measurements for analysis. This enables effective analysis of supplies through forensic techniques. Improper sampling can render the best investigation useless.
- (4) **Principle of Circumstantial Facts:** The doctrine of circumstantial facts states, "Facts do not lie, men can". A witness's oral testimony is likely to be altered due to various reasons such as auto-suggestion, external influence, opinions of others and rationality. Circumstantial evidence is free from these weaknesses. However, the crime scene investigator must be aware of the fact that circumstantial facts may be tampered with. For example, a criminal kills a victim by slitting his neck and places a knife in the deceased's right hand to create a scene of suicide.
- (5) **Principle of Comparison:** According to the principle of comparison, "only likes can be compared". This means, it is necessary to provide such samples for comparison with the

items in question. By comparison, the unique qualities of the collected samples are tested. This principle is quite applicable in criminal investigations. For example, in the case of a stabbing in which the weapon of the crime is a sharp object, it is futile to refer to blunt objects such as sticks for comparison.

**(6) Principle of Probability:** The theory of probability is a mathematical concept. It determines the chances of an event occurring in a certain way out of the number of times the event can happen or fail. All identification is done on a probabilistic basis. In a court of law, if an opinion is given that on the basis of 'probability', a certain event happened in a certain way, the defense counsel will make the most of the word 'probability' and argue that it is not a definite opinion. Thus, it is not customary to speak of 'probability' in a court of law.

**(7) Principle of Progressive Change:** According to the theory of progressive change, "everything changes with the passage of time". However, the rate of progressive change varies with different objects. This theory has a major impact on crime scene investigations. The perpetrator, the crime scene, and the evidence involved in the crime all change, and may diverge over time. Any delay in the investigation of evidence may render the investigation a futile effort. For example, if the scene is a busy road, all the evidence will be lost if the investigation is not carried out at once. Thus, this principle of progressive change calls for speed in crime scene investigation.

### **CRIMINAL JUSTICE SYSTEM:**

The aim of the criminal justice system is to punish the criminal and prevent further crimes in future so that people could live peacefully. Criminal law in India consists of the Indian Penal Code, 1860 which defines the various offences along with their punishment and the Criminal Procedure Code, 1973 which gives the procedure of the trial. The evidence is further governed by the Evidence Act, 1872.

The criminal justice system presumes the accused as innocent until proven guilty beyond a reasonable doubt. It gives the accused a fair chance to present his case to meet the ends of natural justice. The principles of Hinduism and other religions in India value human life and adhere to the principle of providing an equal opportunity to every person to present his side of the story. Thus, the Indian criminal justice system follows an adversarial system and depends on the maxim "let 100 culprits be acquitted and freed, but one innocent person should never be convicted".

Forensic evidence plays a crucial role in the criminal justice system in India. It provides an objective and scientific basis for establishing the guilt or innocence of a suspect, which is essential for ensuring justice and fairness in criminal trials. Forensic evidence is also important in identifying perpetrators of crime and establishing the facts of a case. Forensic evidence includes any physical or digital evidence that can be used to solve a crime. This evidence can be gathered from crime scenes, victims, suspects, or witnesses. Forensic science covers a range of disciplines, including DNA analysis, ballistics, toxicology, digital forensics, and fingerprint analysis. The collection, analysis, and interpretation of forensic evidence require specialized training and expertise, which is provided by forensic experts and forensic laboratories. The use of forensic evidence in the criminal justice system in India has increased significantly in recent years. The Central Forensic Science Laboratory (CFSL) is the premier forensic laboratory in India, and it has regional branches in different parts of the country.

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