

3. Historical Perspective

In the middle of the 19th century natural sciences began to develop rapidly. Justice, which for centuries was in search of objective and impartial evidence, as against the conventional oral testimony of unwilling, hostile and unobservant witnesses, turned to science for assistance. At the same time Sir Arthur Conan Doyle popularised scientific crime detection methods through his fictional character Sherlock Holmes. This certainly helped to publicise amongst the scientists as well as criminal investigators the idea that science could aid in the detection and investigation of crime. Most of the pioneering work in the field of Forensic Science originated from the continent of Europe. There are many who can be cited for their specific contribution in building the foundation of Forensic Science using methods of natural and related sciences.

Mathieu Orfila — is generally recognised as the father of modern toxicology. In the early part of the 19th century he established, in Paris, methods for scientific chemical analysis of poisons, which are in use even today.

Alphonse Bertillon — of France was the first to evolve a scientific system of personal identification. In 1879 he developed the science of Anthropometry, a systematic procedure of taking a series of body measurements to facilitate distinguishing one individual from another. This method, though largely replaced by fingerprint system, is still in use in certain parts of the world. No other individual can claim to have contributed more substantially to the field of personal identification than Alphonse Bertillon. With the invention of photography, he was the first to find its use in criminal investigation. In 1881, he began to take standard pictures of all French criminals and file them in the Bureau of Identification in Paris. He further systematised the technique of 'Portrait Parle', a method of identifying culprits from descriptions provided by victims and witnesses. Bertillon's efforts have earned him the distinction of being known as the father of criminal identification systems.

Francis Galton — a scientist from U.K., undertook the first systematic study of fingerprints. He developed a methodology of classifying the fingerprints for filing purposes. In 1892, he published a book on 'Fingerprints', giving a sound statistical proof of uniqueness of personal identification through fingerprints.

Hans Gross — of Austria, a lawyer by profession, spent many years studying and developing the principles of criminal investigation. This resulted

in the publication of his classic book in 1893, 'Handbuch für Untersuchungsrichter', which was later published in English as 'Criminal Investigation'. This book emphasised the assistance which science could render to the criminal investigator.

Edmond Locard — a Frenchman, later demonstrated how the principles put forward by Gross, in his monumental book, could be incorporated within a workable crime laboratory. In 1910, he established a police laboratory in Lyons and later founded the Institute of Criminalistics at the University of Lyons. He propounded the 'principle of exchange', which forms the basis of forensic examination of physical evidence.

Karl Landsteiner — In 1901, discovered that blood could be grouped into different categories. Following this, in 1915, Dr. Leone Lattes of Italy devised a relatively simple procedure for determining the blood group of dried bloodstains and immediately adopted this technique for criminal investigation.

Calvin Goddard — a U.S. Army Colonel, perfected the science of ballistics. He developed a comparison microscope for comparison of crime and test fired bullets to determine whether or not a particular weapon was used in the offense.

Albert Osborn — developed fundamental principles of document examination, which gave acceptance to documents as scientific evidence by the courts. In 1910, he wrote a classic book titled 'Questioned Documents' which is a primary reference book for document experts.

During the post World War I period, Locard's successes in the application of scientific methods in criminal investigation served as an impetus for the formation of police laboratories in Berlin, Vienna, Sweden, Finland and Holland. This was followed with the establishment of a Forensic Laboratory in Los Angeles Police Department in U.S.A. in 1923. In 1932, F.B.I. organised a national laboratory, which offered forensic services to all law enforcement agencies in U.S.A. Today, it is the world's largest Forensic Science Laboratory. U.K. followed U.S.A. by establishing Metropolitan Forensic Science Laboratory at Scotland Yard, in 1935.

After World War II there was sudden spurt in crime rate due to large-scale availability of firearms. Further, due to ease of mobility and communication organised crime and white-collar crime proliferated. Western countries had to mobilise scientific aids to combat the growing menace of both violent and organised crime. U.S.A., U.K., Commonwealth countries and some of the European countries established a chain of large and medium

forensic laboratories. Today, United States alone has about 250 forensic laboratories located at various levels of State, county and city. A small county like U.K. established 11 more regional laboratories situated in different parts of U.K. Another important development in U.K. was the creation of the Central Research Establishment in Aldermaston in 1966, wholly devoted to basic research in forensic science. Japan has a huge 'National Research Institute of Forensic Science' in Tokyo and a number of regional laboratories. West Germany set up over 21 forensic science laboratories. Italy has 13, France 4, Canada 7 and Switzerland 4. This trend of continuous development has been going on unabated in all the developed countries. Today, there are as many as 1100 forensic science laboratories, big and small, spread in 89 countries.

In India, the development of scientific institutions aiding crime detection came close on the heels of it in the western countries. In the beginning there existed Chemical Examiner's Laboratories, which were set up by the British rulers at Madras, Calcutta, Agra and Bombay in the second half of the 19th Century. These laboratories undertook general chemical analysis and toxicological work. The first Fingerprint Bureau of the world was established in 1897 at Calcutta. Consequent to the 1902 Police Commission Report, recommending creation of CID units at the State level, by 1910 most of the States established Fingerprint Bureaux. Following this development the Government of India established Government Examiner of Questioned Document at Simla in 1906, and Serologist and Chemical Examiner to the Government of India at Calcutta in 1910. Besides this, scientific sections were created under the State CIDs to carry out limited and rudimentary scientific examinations of firearms, footprints, photography, etc. These facilities were far from satisfactory and created very little impact on criminal justice administration.

After independence, there was great awareness of the need to modernise crime investigation methods and criminal justice in our country. Establishing the first State Forensic Science Laboratory at Calcutta, in 1952, by merging it with the already existing Government Chemical Examiner's Laboratory, made the beginning. Setting up of a Central Finger Print Bureau in 1955 and Central Forensic Science Laboratory in 1957, both at Calcutta, followed this. These units functioned under 'Central Forensic Institutes' set up by the Intelligence Bureau. It also had under its control Central Fingerprint Bureau and Central Detective Training School. Since 1974 administrative control of Central Forensic Institutes was transferred to the newly established Bureau of Police Research & Development. This was the starting point for other States to establish organised laboratories in the State capitals.

A Central Advisory Committee on Forensic Science was formed under the M.H.A. in the year 1959. In pursuance of the recommendations of this Committee, organised State Forensic Science Laboratories were established in Bombay, Madras, Punjab, Bihar, Rajasthan, Madhya Pradesh, etc. The 'Central Advisory Committee on Forensic Science' was revitalised in 1972 to serve as an apex body to advise the Government on the development of Forensic Science in the country. Today, it is the Bureau of Police Research and development, which is acting as a nodal agency of the Government of India and coordinating the development of forensic science in the country. A new Directorate under B.P.R.& D. has been created, which is headed by a Scientist designated as Chief Forensic Scientist. He is responsible for the development and control of forensic institutions under B.P.R.& D., in particular, and development of forensic science in the Center and States, in general.

At present there are eighteen State Forensic Science Laboratories. These laboratories have been found inadequate to render prompt and efficient service. This prompted many States like Tamil Nadu, Maharashtra, Andhra Pradesh, Uttar Pradesh, Gujarat, etc. to extend the facilities to regions by setting up Regional Forensic Science Laboratories. Some States have extended these facilities to the district level and in metropolitan towns by setting up mobile laboratories. Thus it can be seen that there has been a constant endeavour, since the last few decades, to expand the existing forensic institutions to serve and strengthen the administration of criminal justice.

Besides, there are other institutions, which provide expert opinion on specific aspects of forensic problems. The Department of Explosives of the Government of India, General Manager of Mint, General Manager, India Security Press and Bank Note Press are a few institutions whose services are sought in this regard.

Questions

1. Fill in the blanks with one name from the following given in bracket:
(Francis Galton, Albert Osborn, Edmond Locard, Karl Landsteiner, Calvin Goddard)
1. discovered that blood could be grouped into different categories.
2. developed the fundamental principles of document examination.

3. suggested practical method of fingerprinting and their classification.
4. perfected the science of ballistics, besides developing comparison microscope for matching bullets.
5. propounded the 'Principle of Exchange'.

II. State whether the following propositions are true or false.

1. The fingerprint identification system was the first scientific system was the first scientific system used for criminal identification by police all over the world. (True/False)
2. Alphonso Bertillon is known as the father of modern identification system. (True/False)
3. The first book on fingerprint titled "Fingerprints" was authored by Henry Faulds. (True/False)
4. Literally speaking Forensic Science is science pertaining to courts of justice. (True/False)
5. The New Scotland Yard Fingerprint Bureau was the first Bureau established in the world. (True/False).

CHAPTER—2
FORENSIC SCIENCE LABORATORIES AND
OTHER EXPERT INSTITUTIONS
AND
THEIR UTILISATION IN POLICE WORK

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1. Growth of Forensic Science Laboratories

The institution of forensic science came into existence in our country in the middle of the twentieth century. Prior to this, in India, there were a few rudimentary scientific facilities available to the police in the form of fingerprint bureaux and scientific sections which provided examinations of fire-arms, foot-prints, questioned documents and photography. All these facilities were available under the State CID set up. There also existed chemical examiner laboratories established under British rule, which mainly took up viscera examination and basic blood tests. Often in important criminal cases, the services of private experts were requisitioned by the Government.

In the second quarter of the last century forensic science laboratories were established in different parts of the world. In India, too, the growing

awareness among the police and the judiciary, of the role science played in scientific evaluation of material clues, led to setting up of forensic science laboratories in the States as well as at the Center. However, the progress was rather slow and the facility offered was not comprehensive to cover all aspects of forensic science. There was also no systematic and planned development. Each State established its forensic science laboratory either by merging the chemical examiners laboratory with the scientific sections of the State CID or by redesignating the scientific sections as forensic science laboratory. This resulted in lot of diversity in the organisation of these laboratories.

Since the last two decades, considerable thought has been given in forensic science forums to build comprehensive forensic science facilities under one roof. This resulted in most of the new laboratories coming up with comprehensive facilities by amalgamating scientific sections and chemical examiner's laboratory into forensic science laboratory.

Part of the resources for establishing laboratories in the States has been provided by the Central Government under the Modernisation of Police Scheme. Under this scheme, crores of rupees have already been spent for purchase of latest scientific equipment as well as for the construction of new laboratory buildings. Today, most of the laboratories are well equipped and adequately staffed to meet the growing requirement of law enforcement agencies. The investigating officers and the officers charged with the supervision are now required to give practical shape to this new awareness and to take advantage of the help which forensic science can offer.

2. Existing Facilities

The position of forensic science laboratories and other allied forensic science institutions in the country, offering scientific service in the administration of criminal justice, is summarised below:—

(a) Institutions under the centre

- (i) The Central Forensic Science Laboratories, under the administrative control B.P.R.&D, — Calcutta (1957), Hyderabad (1968), and Chandigarh (originally Punjab F.S.L. in 1961, later designated as CFSL Union Territory Laboratory and now re-designated (1978) as CFSL under B.P.R. & D.)
- (ii) The Central Forensic Science Laboratory, under C.B.I., New Delhi (1968).

- (iii) The Government Examiners of Questioned Documents, under administrative control of B.P.R.& D, — Simla (1906), Calcutta (1964) & Hyderabad (1968).
- (iv) The Central Fingerprint Bureau, under N.C.R.B., New Delhi.
- (v) The Serologist and Chemical Examiner to the Government of India, Ministry of Health, Calcutta (1910).
- (vi) The General Manager, Mints, at Calcutta, Bombay and Hyderabad,
- (vii) The General Manager, India Security Printing Press, Nasik and Bank Note Press, Dewas.
- (viii) The Controller of Stamps and Stationery.
- (ix) National Institute of Criminology and Forensic Science under M.H.A., New Delhi (1971), an institute imparting training to Police, Judicial and Correctional Service Officers including Scientific personnel from the States and Central Forensic Laboratories.
- (x) Office of the Chief Controller of Explosives established in 1898 in Nagpur. Today, there are several circles and sub-circles located in different parts of the country, headed either by Deputy Chief Controller, Controller or Dy. Controller as noted below:—
 - 1. East circle, Calcutta, headed by Dy. Chief Controller;
 - 2. North circle, Agra, headed by Dy. Chief Controller;
 - 3. West circle, Bombay, headed by Dy. Chief Controller;
 - 4. South circle, Madras, headed by Dy. Chief Controller;
 - 5. Sub-circle, Gauhati, headed by Controller;
 - 6. Sub-circle, Gomia, headed by Dy. Controller;
 - 7. Sub-circle, Hazaribagh, headed by Controller;
 - 8. Sub-circle, Asansol, headed by Controller;
 - 9. Sub-circle, Rourkela, headed by Controller;
 - 10. Sub-circle, Chandigarh, headed by Controller;
 - 11. Sub-circle, Jaipur, headed by Controller;
 - 12. Sub-circle, Bhopal, headed by Controller;
 - 13. Sub-circle, Baroda, headed by Controller;
 - 14. Sub-circle, Hyderabad, headed by Controller;
 - 15. Sub-circle, Cochin, headed by Controller;
 - 16. Sub-circle, Mangalore, headed by Controller;
 - 17. Sub-circle, Shivakasi, headed by Controller.

(xi) Central Detective Training Schools at Calcutta, Chandigarh and Hyderabad. These are training institutes for imparting specialised detective training to investigating police officers on modern scientific methods of investigation.

(b) At the State level

The State Forensic Science Laboratories exist in the following States with their year of establishment:—

(1) West Bengal, Calcutta ..	1952
(2) Maharashtra, Bombay ..	1958
(3) Rajasthan, Jaipur ..	1959
(4) Tamil Nadu, Madras ..	1959
(5) Kerala, Trivandrum ..	1961
(6) Orissa, Bhubaneswar ..	1962
(7) Bihar, Patna ..	1963
(8) Jammu & Kashmir, Srinagar ..	1964
(9) Madhya Pradesh, Sagar ..	1964
(10) Assam, Gauhati ..	1967
(11) Karnataka, Bangalore ..	1967
(12) Uttar Pradesh, Lucknow ..	1969
(13) Haryana, Madhuban ..	1973
(14) Gujarat, Ahmedabad ..	1974
(15) Andhra Pradesh, Hyderabad ..	1976
(16) Punjab, Chandigarh ..	1981
(17) Meghalaya, Shillong ..	1986
(18) Himachal Pradesh, Simla ..	1987
(19) Delhi ..	1993

States like Maharashtra, Tamil Nadu, Andhra Pradesh, Gujarat, Uttar Pradesh, Orissa, Jammu & Kashmir have further extended their forensic science facilities by establishing laboratories at regional and district level. Some of the States like Goa, Arunachal Pradesh, Mizoram, Nagaland and Sikkim, and Tripura do not have organised laboratories of their own. Similarly, Union Territories like, Pondicherry, Chandigarh, Andaman & Nicobar Islands, Diu Daman, and Lakshadweep do not have their own laboratories. They avail the facilities of the neighbouring States or the nearest Central Forensic Science Laboratory.

The development of crime laboratories as well as later established forensic science laboratories, in our country, as already mentioned above, has been without proper planning. This is equally true in other countries. Most of the State laboratories were established on the basis of the availability of resources and awareness in the Government. It is, therefore, difficult to study a laboratory which has a model set up. Even the nature of facilities offered by the laboratories in different States are not uniform. However, the basic structure of most of the forensic science laboratories in the Centre and the States consist of number of functional divisions, each based on one area of specialisation.

Both the State and the Central laboratories may have all or most of the following divisions:—

- | | |
|----------------|------------------|
| (1) Ballistics | (5) Lie-detector |
| (2) Biology | (6) Physics |
| (3) Chemistry | (7) Serology |
| (4) Documents | (8) Toxicology |

3. Facilities offered by various Divisions of the Laboratory

The work and functions carried out in the various divisions referred above are presented below to give an idea of the coverage of forensic problems.

(I) Ballistics Division

This division deals with

- (i) The examination of all types of firearms and ammunitions to connect bullets and spent cartridge cases with a particular firearm to the exclusion of all others.
- (ii) Determine the serviceability of firearms and ammunition.
- (iii) Whether the seized firearms come under the purview of the Arms Act.
- (iv) Determine time, range and angle of firing.
- (v) Nature of gun shot injury and a host of other problems associated with offences involving firearms and ammunition.

In most of the laboratories, cases related to the identification of explosives, their handling and examination of residue materials, after the explosion, are also handled. Some laboratories have a separate division to undertake examination of explosives cases.

(2) Biology Division

The Biology division deals with physical evidence pertaining to living beings, like human and animal, as well as materials of plant origin. This division generally handles the following items of work:—

- (i) Bacteriological and entomological examination of exhibits.
- (ii) Anatomical examination of human and animal bones, skeletal remains, teeth etc.
- (iii) Morphological examination of materials like hairs, wool, fibers, wood and wood fragments, seeds, leaf fragments, pollens, micro-flora, diatoms etc., with a view to identifying the material.

(3) Chemistry Division

The Chemistry division deals with the following items of evidence:

- (i) Examination of petroleum products like petrol, diesel and kerosene.
- (ii) Examination of sub-standard construction material like bricks, cement, concrete, etc., besides adulteration in these materials.
- (iii) Determination of alcohol in blood and urine in cases of suspected drunkenness, and analysis of fermented wash, illicit liquor, varnish, etc., in prohibition and excise cases.
- (iv) Examination of inflammable material in suspected cases of arson, dowry deaths, etc.
- (v) Analysis of pesticides for their identification.
- (vi) Analysis of narcotics, dangerous drugs such as opium, ganja, bhang, LSD, heroin, pethidine, methadone, etc.
- (vii) Analysis of dyes, paint, ink and other chemicals with a view to ascertaining their identity, quality and composition.
- (viii) Examination of metal alloys and metal fragments for identification and comparison.

(4) Document Division

This division deals with the examination of all types of questioned documents, hand-written, type-written or printed matter to give opinion in the following matters :

- (i) Comparison of questioned writings and signatures with known standard writing to establish genuineness or otherwise.
- (ii) Identify make, model or age of the typewriter used in typing the typewritten document.

- (iii) Examination of printed matter to identify block or plates used including compose of letter types.
- (iv) Examination of impressions of rubber stamps and metal seals with a view to identifying them.
- (v) Deciphering erased, altered, added, or obliterated writings.
- (vi) Deciphering indented, charred or secret writings.
- (vii) Examination of writing materials like paper, pen, pencil and inks.
- (viii) Examination of perforation around stamps, letter pads, pin and staple or punch holes to connect them with the source.
- (ix) Detection of forged lottery tickets, railway tickets, currency notes, etc.
- (x) Determination of age of ink, paper and document as well as order of writing.

(5) Lie-detector Division

This is a new division, which quite a few laboratories have established recently. It is intended to assist the police in interrogating suspects to detect truth or deception in important crimes.

(6) Physics Division

This division is generally equipped with sophisticated scientific instruments for rapid and precise analysis of physical clues such as: -

- (i) Examination of tool marks, comparison of telegraph copper wires, counterfeit coins, etc.
- (ii) Examination of soil, dust, dirt and debris.
- (iii) Examination of glass, paint chips and other contact traces in hit and run cases.
- (iv) Restoration of erased marks/numbers on stolen articles like vehicles, machines, silver wares, firearms, etc.
- (v) Examination and comparison of torn fabric, ropes, etc.
- (vi) Trace elemental analysis with a view to comparing glass, soil, paint, metal fragments, etc.
- (vii) Other analysis requiring sophisticated instruments for various other divisions of the laboratory.

(7) Serology Division

The Serology division undertakes the following examination:

- (i) Examination of articles stained with blood, semen, sweat, saliva to determine their nature, origin, grouping, DNA profiling etc.
- (ii) Determination of paternity through blood groups.
- (iii) Individualisation of blood and bloodstains based on enzymatic studies using latest techniques.
- (iv) Determine origin and grouping of fragments of muscle, skin, bones, etc., on objects like bullet, fingernails, etc.

(8) Toxicology Division

This division deals with:

- (i) The examination of viscera, stomach wash, vomit, etc., to determine poisons of vegetable origin, inorganic salts and metals, synthetic drugs, pesticides, alcohol and other general poisons.
- (ii) Examination of powders, pills, capsules, syringes, vials, etc.
- (iii) Determination of alcohol in blood and urine in drunken driving cases.

4. Facilities offered by other Expert Institutions*The Serologist and Chemical Examiner to the Government of India*

This institution, which was first established for serological examination is concerned with the identification, analysis, origin and grouping of blood and blood stained articles referred to it by police agencies all over the country. The articles are sent to it through the State Forensic Science Laboratory or the Chemical Examiner Laboratory. This institution is capable of giving advice in a variety of cases involving actual bloodshed like murder, hurt, or suicide, cases of disputed paternity by identifying blood group or other criminal cases in which other body fluids may be involved. Today, most of the Central and State Laboratories have developed serological expertise within their set up. Such of these laboratories have discontinued sending articles for serological examination to this Institute at Calcutta. Besides, serological examination, it also serves as a production and supply center of serums, for blood analysis.

Central Fingerprint Bureau, Calcutta

This bureau was set up in 1957, under the control of Intelligence Bureau. It was later brought under the control of Central Bureau of

Investigation. It is now under the control of N.C.R.B. It is a national bureau maintaining fingerprints of convicts from all States and Union Territories of India. It has the largest collection of fingerprint records in our country. When a criminal from one State operates in another State, his previous conviction records can be obtained from the Central Fingerprint Bureau to secure enhanced punishment. The bureau also maintains the records of international criminals. The fingerprint records are now computerized to facilitate faster retrieval.

The Government Examiner of Questioned Documents, - Simla, Calcutta, Hyderabad.

This department, which is now under the control of B.P.R. & D., was set up by the Central Government for expert examination of questioned documents. It is primarily meant for processing questioned documents referred to them by the Central organisations of the Government of India. The department also undertakes examination of cases referred to them by the States, provided such references are made by the officers not below the rank of Superintendent of Police. For administrative convenience of this department the entire country is divided into three regions. The references originated from the southern, eastern and northern States are sent to the Government Examiner of Question Documents located in that region.

The General Manager of the Mint

In cases where counterfeit coins are involved, services of expert can be obtained from the General Manager of the Mint at Calcutta, Bombay or Hyderabad. But in cases where related evidence like moulds, dies and other raw materials used in the making of counterfeit coins are involved, these are to be sent to the State or Central Forensic Science Laboratories, as the General Manager of the Mint may not be able to undertake such examination.

The General Manager, India Security Press, Nasik and Bank Note Press, Dewas

One-rupee Government of India currency notes and the Reserve Bank notes are printed by the Security Press, Nasik, whereas the new Reserve Bank notes are printed by the Bank Note Press, Dewas. The department has experts who can examine currency notes to determine their genuineness. But, if the examination involves blocks, papers and other materials used in the printing of counterfeit currency, then it is generally referred to the State or Central Forensic Laboratory. If the examination involves foreign counterfeit currency, it has to be sent to the International Criminal Police Organisation (ICPO) at Paris through the C.B.I. INTERPOL division.

The Controller of Stamps & Stationery

The court fee stamps, stamp papers, postal stamps and stationery are issued by this department. Whenever opinion on the genuineness of the stamps or other stationery is required then this department has to be approached.

The Deputy Chief Controller/Controller/Deputy Controller of Explosives

This department is meant for enforcement of rules and regulations under the Indian Explosives Act. Besides, in criminal cases involving explosives the investigating officer could contact the Controller of Explosives of the concerned jurisdiction for providing assistance in the examination of the site of explosion. Bombs, grenades, booby traps etc. can be safely handled by these experts. They will also be able to provide expert opinion on the cause of explosion. In times of emergency, bomb disposal squads of the Army and Police are also requisitioned.

The Chemical Examiner

The institution of Chemical Examiner is now gradually disappearing with the emergence of forensic science laboratories. In most of the States these have already got merged with the forensic science laboratory. Wherever these institutions continue to exist they undertake examination of toxicological cases, bloodstains, excise articles, medico-legal cases, etc.

The State Fingerprint Bureau

Every State has a fingerprint bureau on the lines of the CFPB. These bureaux

- (i) Maintain a record of fingerprint slips primarily of criminals convicted for certain offences specified in the Indian Penal Code;
- (ii) Assist in searching the crime scenes for chance prints for suspect identification. Some States have established these bureaux in regions and districts also, most of which are for single digit records. A few States have started using computers for speedy processing of fingerprint records.

Divisional Engineer, Telecommunications

In cases involving telegraphic copper wire thefts it may be necessary to ascertain whether the stolen copper wire is the property of the telegraph department. For expert opinion on the physical tests like gauge and resistance, reference can be made to the Divisional Engineer, Telecommunications in the concerned area. Chemical examination, examination of tool and tool marks on wire ends can be undertaken by the forensic science laboratories in the States and at the Center.

Medico-Legal Expert

The services of the local Medical Officer, Civil or Assistant Surgeon authorised to do medico-legal examination or Professor of Forensic Medicine in medical colleges, would be available for medico-legal opinion on the following:—

- (i) Identity of victim.
- (ii) Whether death was homicidal, suicidal or accidental.
- (iii) Time of death/injury (post-mortem or ante-mortem).
- (iv) Cause of death.
- (v) Type of instrument used.
- (vi) Age of a person, or that of a victim in sex offences.
- (vii) Sex, height, age, etc. in cases of decomposed human remains or mutilated bodies.
- (viii) Skull identification by photographic super-imposition.
- (ix) Odontological study.

Questions

- I. State whether the following propositions are true or false.**
 1. Serologist to the Government of India was established for chemical examination of viscera and poisons. (True/False).
 2. The first Forensic Science Laboratory in India was established in the year 1952. (True/False).
 3. National Institute of Criminology and Forensic Science is an institute for training and research in Criminology and Forensic Science. (True/False)
 4. All the Central Forensic Science Laboratories are under the administrative control of the Bureau of Police Research and Development. (True/False)
 5. Besides giving expert opinion on the genuineness of the Indian Currency Notes, the General Manager, Bank Note Press Dewas can also examine foreign counterfeit currency notes. (True/False)