The influence of cinema, television and detective fictions has projected Fingerprints as a form of most important evidence. The public has become most familiar with Fingerprints as the best means to prove the identity of a criminal. This familiarity with fingerprints tends to lend them a greater importance in the field of criminal investigation. Fingerprints are most commonly available at the crime scene, their permanence and uniqueness leads to absolute identification of a person.

It has been proved that fingerprints except for growing in size, after their development in the womb, do not change during life time of an individual. As the detail is embedded in the dermis or true skin, it is restored to the original when the skin comes to rest after temporary damage to the epidermis or outer skin such as burns, blisters, abrasion and even callus. Only when the dermis is affected after external damage e.g. with a deep wound, the skin will develop scar tissue changing the papillary detail. This detail becomes permanent, however, after some time and may make that piece of skin even more distinctive.

If the surface of any item is touched, the condition of the fingers and the way one handles the item produces the chances of leaving a readable print. Materials with which a criminal may come in contact are unlikely to receive fingerprints of sufficient clarity to be useful as evidence although unreadable smudged or fragmentary prints of dubious value are found at a crime scene, yet they go beyond all other physical evidences such as blood, hair etc. in their ability to identify the person who left them.

Fingerprints have made it possible to identify a person due to their unique features that permit them to be classified and filed for later references. Identification from fingerprints is based on pattern types of prints, its Galton’s Details (ridge characteristics) which have been recently named as first level and second level details. Most of the time, these two level of details are sufficient to establish the identity of person. But sometimes the prints have only few ridges (smudged, partial and fragmentary prints) available for establishing the identity of the person i.e. lack of sufficient number of characteristics to become useful evidence. Therefore some other characteristics are required to establish identity and are called as Third level details (which include Poroscopy and Edgeoscopy).

Personal identification through the study of sweat pores present on the Ridges was discovered and developed by Locard in 1912 and he named it “Poroscopy”. Similarly the study of edges of the ridges was proposed and named as “Edgeoscopy” by Chatterjee (Chatterjee, 1962).

In the Present Study an attempt has been made to identify an individual from partial or fragmentary prints with the help of first, second and third level details collectively.