1. Trace the development of the studies of Harappan cities since they were first discovered.

**Ans:** The discovery of the Indus Valley civilization was first recorded in the 1800's by the British. The first recorded note was by a British army deserter, James Lewis, who was posing as an American engineer in 1826. He noticed the presence of mound ruins at a small town in Punjab called Harappa. Because Harappa was the first city found, sometimes any of the sites are called the Harappan civilization.

Alexander Cunningham, who headed the Archaeological Survey of India, visited this site in 1853 and 1856 while looking for the cities that had been visited by Chinese pilgrims in the Buddhist period. The presence of an ancient city was confirmed in the following 50 years, but no one had any idea of its age or importance. By 1872 heavy brick robbing had virtually destroyed the upper layers of the site. The stolen bricks were used to build houses and particularly to build a railway bed that the British were constructing. Alexander Cunningham made a few small excavations at the site and reported some discoveries of ancient pottery, some stone tools, and a stone seal. Cunningham published his finds and it generated some increased interest by scholars.

It wasn't till 1920 that excavations began in earnest at Harappa. John Marshall, then the director of the Archaeological Survey of India, started a new excavation at Harappa. Along with finds from another archaeologist, who was excavating at Mohenjo Daro, Marshall believed that what they had found gave evidence of a new civilization that was older than any they had known.

Major excavations had not been carried out for forty years until 1986 when the late George Dales of the University of California at Berkeley established the Harappan Archaeological Project, or HARP. This multidisciplinary study effort consists of archaeologists, linguists, historians, and physical anthropologists.

Since the establishment of HARP, Jonathan Mark Kenoyer has served as co-director and field director of the project. Kenoyer was born in Shillong, India, and spent most of his youth there. He went on to receive his advanced degrees from the University of California at Berkeley. He is now a professor of Anthropology at the University of Wisconsin-Madison, and teaches archaeology and ancient technologies. Kenoyer's main focus has been on the Indus Valley civilization's where he has conducted research for the last 23 years. Ever since he was a young graduate student, Kenoyer was particularly interested in ancient technology. He has done a great deal of work in trying to replicate processes used by ancient people in the production of jewelry and pottery. One of his first efforts in replicating shell bangle making was then co-authored with George Dales and published in an article. His doctorate studies were based upon this research, and his dissertation is a milestone in the field of experimental archaeology and ethnoarchaeology, besides being the definitive study of Harappan shell working.

Today, Kenoyer is assisted by co-director Richard Meadow of Harvard University and Rota Wright of New York University (A.C.I.V.C. Kenoyer preface) Kenoyer uses a contextual archaeological approach. His work is characterized by the use of cold evidence to draw the outlines of this ancient civilization.

Although, Harappa was undoubtedly occupied previously, it was between 2600-1900 B.C. that it reached its height of economic expansion and urban growth. Radio carbon dating, along with the comparison of artifacts and pottery has determined this date for the establishment of Harappa and other Indus cities. This began what is called the golden age of Harappa. During this time a great increase in craft technology, trade, and urban expansion was experienced. For the first time in the history of the region, there was evidence for many people of different classes and occupations living together. Between 2800-2600 B.C., called the Kot Diji period, Harappa grew into a thriving economic center. It expanded into a substantial sized town, covering the area of several large shopping malls. Harappa, along with the other Indus Valley cities, had a level of architectural planning that was unparalleled in the ancient world. The city was laid out in a grid-like pattern with the orientation of streets and buildings according to the cardinal directions. To facilitate the access to other neighborhoods and to segregate private and public areas, the city and streets were particularly organized. The city had many drinking water wells, and a highly sophisticated system of waste removal. All Harappan houses were equipped with latrines, bathing houses, and sewage drains which emptied into larger mains and eventually deposited the fertile sludge on surrounding agricultural fields. It has been surprising to archaeologists that the site layouts and artifact styles throughout the Indus region are very similar. It has been concluded these indicate that there was uniform economic and social structure within these cities. Other indicators of this is that the bricks used to build at these Indus cities are all uniform in size. It would seem that a standard brick size was developed and used throughout the Indus cities. Besides similar brick size standard weights are seen to have been used throughout the region as well. The weights that have been recovered have shown a remarkable accuracy. They follow a binary decimal system: 1, 2, 4, 8, 16, 32, up to 12,800 units, where one unit weighs approximately 0.85 grams. Some of the weights are so tiny that they could have been used by jewelers to measure precious metals.

Ever since the discovery of Harappa, archaeologists have been trying to identify the rulers of this city. What has been found is very surprising because it isn't like the general pattern followed by other early urban societies. It appears that the Harappan and other Indus rulers governed their cities through the control of trade and religion, not by military might. It is an interesting aspect of Harappa as well as the other Indus cities that in the entire body of Indus art and sculpture there are no monuments erected to glorify, and no depictions of warfare or conquered enemies. It is speculated that the rulers might have been wealthy merchants, or powerful landlords or spiritual leaders. Whoever these rulers were it has been determined that they showed their power and status through the use of seals and fine jewelry.

Seals are one of the most commonly found objects in Harappan cities. They are decorated with animal motifs such as elephants, water buffalo, tigers, and most commonly unicorns. Some of these seals are inscribed with figures that are prototypes to later Hindu religious figures, some of which are seen today.