

**VISION IAS**  
**GENERAL STUDIES**  
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**PRINTED NOTES**  
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# ARCHITECTURE

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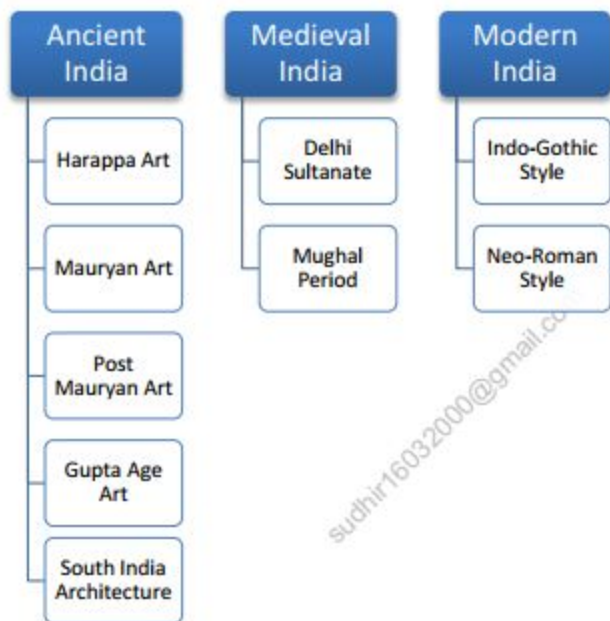
Architecture is not a modern phenomenon. It began as soon as the early cave man began to build his/her own shelter to live in. Indian Architecture evolved in various stages in different parts and regions of the country. Apart from the natural and obvious evolutions from the pre historic and historic periods, evolution of Indian Architecture was generally affected by many great and important historic developments. Naturally, the emergence and decay of great empires and dynasty in the subcontinent, each in their way influenced the growth and shaped the evolution of Indian architecture.

## 1. Architecture and Sculpture

Architecture refers to designing of and construction of buildings, whereas sculpture is a 3D work of art. In Architecture, various types of materials are used i.e. stone, wood, glass, metal etc. whereas sculpture is made of single piece of material. Architecture involves study of engineering and engineering mathematics and depends upon measurement, whereas sculpture involves creativity, imagination and may not depend on measurement.

## 2. Classification of India Architecture

Indian Architecture can be classified into as follows -

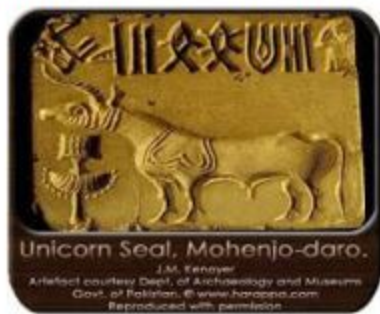


## 3. Harappan Civilization (Indus Valley Civilization) Art

Harappan civilization emerged during second half of the third millennium BCE and was a Bronze Age Civilization. Along with Ancient Egypt and Mesopotamia it was one of the three early civilizations of the world. It flourished in the basins of the Indus River, one of the major rivers of Asia, and the Ghaggar - Hakra River, which once coursed through northwest India and eastern Pakistan. The two major sites of the Indus valley civilization are along the Indus River. The cities of Harappa in the north and Mohenjo-Daro in the south showcase one of the earliest examples of civil planning. While Harappa and Mohenjo-Daro are situated in Pakistan, the important sites excavated in India are Lothal and Dholavira in Gujrat, Rakhigarhi in Haryana, Ropar in Punjab, Kalibangan and Balathal in Rajasthan, etc. At its peak, the Indus Civilization may have had a population of over five million.

### 3.1. Seals

Seals are square, rectangular or circular or triangular piece of material (mainly stones). The standard Harappan seal was a square plaque 2x2 square inches, usually made from the soft river stone, steatite. Every seal is engraved in pictographic script along with animal impressions which are yet to be deciphered. Some of seals have also been found in gold and Ivory. On an average 5 signs or symbols are present on a seal. Direction of writing is right to left. They all bear a great variety of motifs, most often of animals including those of the bull, the elephant, tiger, goat and also monsters. Sometimes trees or human figures were also depicted. Most important example is Pashupati Seal and Unicorn Seal which are shown below.



*Unicorn Seal*



*Pashupati Seal*

#### Significance of Seals

- 1) They were mainly used as unit of trade and commerce.
- 2) They were also used as an amulet (to ward off the evil).
- 3) They were also used as an educational tool (presence of pie sign).

### 3.2. Sculpture

The stone statuary found at Harappa and Mohenjodaro are excellent examples of handling three-dimensional volumes. In stone are two male figures— one is a torso in red sandstone and the other is a bust of a bearded man in steatite—which are extensively discussed.

The art of bronze casting was practiced on a wide scale under Harappan art. The technique used for casting is known as "Lost wax technique". Under this technique, at first wax figures are covered with a coating of clay and allowed to dry. Then it is heated and the molten wax is allowed to drain out through a tiny hole at the bottom of the clay cover. The hollow mould is then filled with bronze or any other metal. Once the metal is cooled, the clay is removed. Kalibangan and Daimabad



*Bearded Man*



*Dancing Girl*

yielded excellent examples of metal-cast sculptures. In bronze we find human as well as animal figures, the best example of the former being the statue of a girl popularly titled 'Dancing Girl'. Amongst animal figures in bronze the buffalo with its uplifted head, back and sweeping horns and the goat are of artistic merit.

### 3.3. Terracotta

Terracotta is a fire baked clay and is handmade using pinching method. The Indus Valley people made terracotta images also but as compared to stone and bronze statues the terracotta representations of human form are crude. They are more realistic in Gujarat sites and Kalibangan. Examples are Mother Goddess, Toy carts with wheels, whistles, birds and animals, etc.



*Mother Goddess*



*Toy carts with wheels*

### 3.4. Pottery

A large quantity of pottery excavated from the sites indicates gradual evolution of various design motifs as employed in different shapes and styles. Potteries were mainly plain, red and black painted. The Indus Valley pottery consists chiefly of very fine wheel-made wares, very few being hand-made. Plain pottery is more common than painted ware. Plain pottery is generally of red clay, with or without a fine red or grey slip. It includes knobbed ware, ornamented with rows of knobs. The black painted ware has a fine coating of red slip on which geometric and animal designs are executed in glossy black paint.

#### Use of Pottery

1. For household purpose (storage of water, food grains etc).
2. For decoration- Miniature vessels used for decoration (Less than ½ inch).
3. Used as perforated pottery (large hole at the bottom and small holes all over the wall, and probably was used for straining liquor.)

### 3.5. Beads and Ornaments

The Harappan men and women decorated themselves with a large variety of ornaments produced from every conceivable material ranging from precious metals, gemstones, bone and even baked clay. Necklaces, armlets and finger rings were common and worn by both males and females. While women wore girdles, earrings and anklets.

The bead industry seems to have been well developed as evident from the factories discovered at Chanhudaro and Lothal. Beads were made of cornelian, amethyst, steatite, turquoise etc. The beads are in varying shapes – disc shaped, cylindrical, spherical, barrel shaped and segmented. Great technical skill has been displayed in the manufacture of these beads.

Evidences of dead bodies buried along with ornaments have also been found. Harappans were also conscious of fashion (as different hair styles, wearing of a beard etc. have been found).

warm up more slowly. Urban areas have relatively higher temperature than the surrounding.

Student Notes:

### 3.1. Distribution of Temperature

The global distribution of temperature can well be understood by studying the **isotherms**. The isotherms are lines joining places having equal temperature. As already discussed, latitudes have pronounced effect on the temperature, the isotherms are generally parallel to the latitude. The deviation from this general trend is more pronounced in January than in July, especially in the northern hemisphere. Figure 8 and 9 show the distribution of surface air temperature in the month of January and July. In the northern hemisphere the land surface area is much larger than in the southern hemisphere. Hence, the effects of land mass and the ocean currents are well pronounced. Following are the chief features of isotherms:

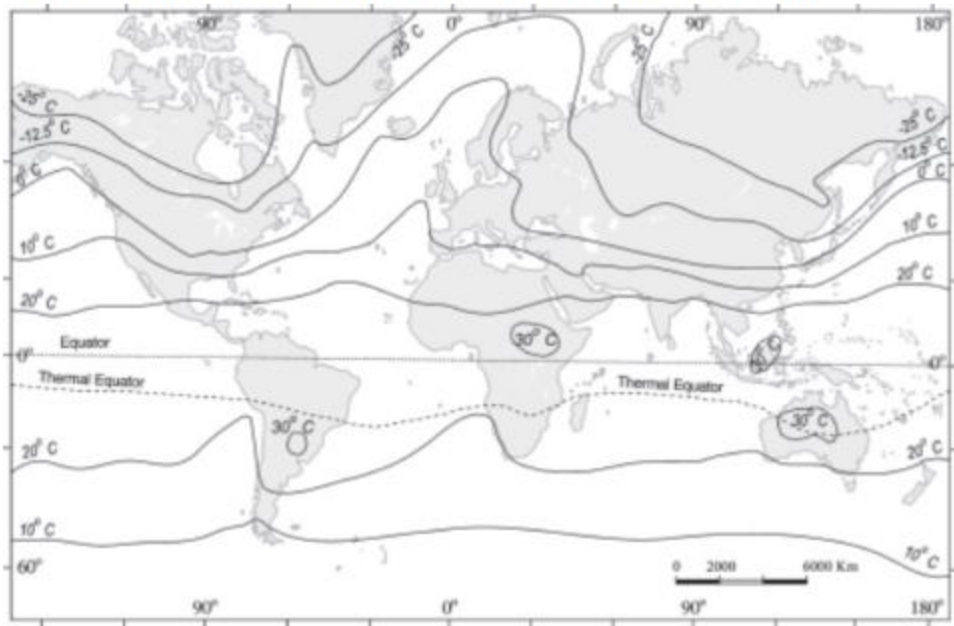


Figure 8 – isotherms in the month of January

- The isotherms are generally parallel to equator. They show successive temperature decrease towards the poles.
- The rate of change of temperature is indicated by the spacing between isotherms. Closely drawn isotherms indicate rapid change in temperature and vice-versa.
- The isotherms deviate to the north over the ocean and to the south over the continent in January. It is for two reasons – warm and cold ocean currents and difference between the temperature of land and water. For example, the presence of warm ocean currents, Gulf Stream and North Atlantic drift, make the Northern Atlantic Ocean warmer and the isotherms bend towards the north. Over the land the temperature decreases sharply and the isotherms bend towards south in Europe. The mean January temperature along 60° E longitude is minus 20° C both at 80° N and 50° N latitudes.
- In the southern hemisphere, the isotherms are more or less parallel to the latitudes due to less landmass and the variation in temperature is more gradual than in the northern hemisphere. The isotherm of 20° C, 10° C, and 0° C runs parallel to 35° S, 45° S and 60° S latitudes respectively.
- In July the isotherms generally run parallel to the latitude.

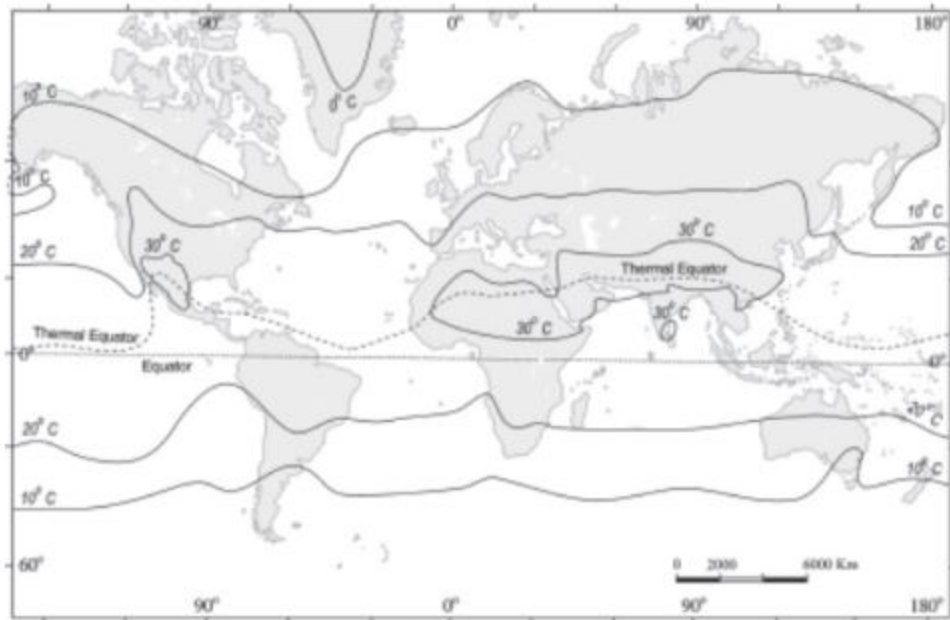


Figure 9 – isotherms in the month of July

### 3.2. Temperature Anomaly

The difference between the mean temperature of any place and the mean temperature of its parallels is known as temperature anomaly. On the map the lines joining the places of equal temperature anomaly are known as Isothermal anomaly lines.

Temperature anomaly could be positive or negative. Due to uneven distribution of land and water the maximum temperature anomalies are found in the Northern Hemisphere and minimum in the Southern Hemisphere.

### 3.3. Temperature Inversion

As already discussed, temperature decreases with increase in altitude. In normal conditions, as we go up, temperature decreases with normal lapse rate. It is  $6.5^{\circ}\text{C}$  per 1,000 m. Against this normal rule sometimes, instead of decreasing, temperature may rise with the height gained. The cooler air is nearer the earth and the warmer air is aloft. This rise of temperature with height is known as **Temperature inversion**. Temperature inversion takes place under certain specific conditions. These are discussed below:

- **Long winter nights:** if in winters the sky is clear during long nights, the terrestrial radiation is accelerated. The reason is that the land surface gets cooled fairly quickly. The bottom layer of atmosphere in contact with the ground is also cooled and the upper layer remains relatively warm.
- **Cloudless clear sky:** The clouds obstruct the terrestrial radiation. But this radiation does not face any obstacles for being reflected into space when the sky is clear. Therefore the ground is cooled quickly and so is the air in contact with it cooled.