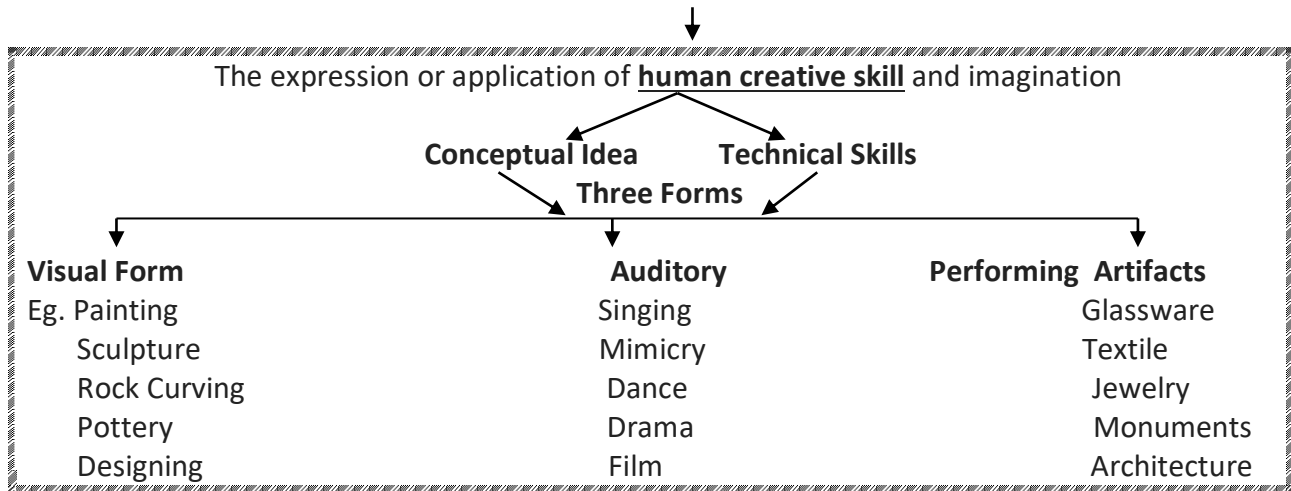


UNIT - 4

FINE ARTS IN INDIA(Art, Technology and Engineering)

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UNIT-IV FINE ARTS IN INDIA



1. INDIAN PAINTINGS ANCIENT INDIAN PAINTINGS




Rock / Stone Art

1. Bhimbetka Stone Painting

- The oldest paintings are found to be 10,000 years
- exhibits the earliest traces of human life on the Indian subcontinent and evidence of Stone Age
- located in Madhya Pradesh and Bhopal
- some of the geometric figures
- are quite colorful but small in size, vegetable colors
- Made deep inside a niche or on inner walls.

2. Murals

- from the 2nd century BC to 8th – 10th century AD
- includes petro-glyphs, or engravings, found on the wall or ceilings of caves
- mainly natural caves and rock-cut chambers.
- The highest achievements of this time are the caves of Ajanta , Bagh, Sittanavasal, Armamalai Cave (Tamil Nadu), RavanChhaya rock shelter, Kailasanatha temple in Ellora Caves
- depict mainly religious themes of Buddhist, Jain and Hindu religions.
- had dominated the scene, witnessed the advent of miniature paintings during the 11th and 12th centuries

| | | |
|---|--|---|
|  |  |  |
| <p>1. A mural painting depicting a scene from MahajanakaJataka</p> | <p>2. Ajanta Cave Painting</p> | <p>3. Most amazing cave paintings</p> |

MEDIEVAL INDIAN PAINTING

- Eastern India miniature painting developed in the 10th century.
- start of the 18th century, oil and easel painting began in India
- depicting Buddhist divinities and scenes from the life of Buddha were painted on the leaves
- Influences in foreign arts
 - The evolution of Indian Miniatures paintings started in the Western Himalayas, around the 17th century
 - Are beautiful handmade paintings, which are quite colorful but small in size.
 - Is the intricate and delicate brushwork, which lends them a unique identity.
 - the subjects of the manuscripts mostly religious and literary
 - Many paintings are from Sanskrit and folk literature.
 - It is on the subject of love stories from Vaishnav sect of Hindu religion ,from Jain sect.
 - The Paintings of Vaishnav sect are regarding various occasions of the life of Lord Krishna and Gopies.
 - Vaishnav paintings of "Gita Govinda" is about Lord Krishna.
 - The paintings of Jain sect is concerning to Jain Lords
 - Created on "Taadpatra" that means the leaf of the palm tree, and later on paper.
 - there are very few human characters with front face are seen
 - Side profile. Big eyes, pointed nose and slim waist are the features
 - Features:The skin colours of human being are Brown and fair. The skin colour of the Lord Krishna is Blue. The colour of the hair and eyes is black. Women characters have long hair. Human characters have worn jewellery on the hand, nose, neck, hair, waist and ankles. Men and women wear the traditional Indian dress, slippers and shoes. Men wear turbans on their head. In these paintings trees, rivers, flowers, birds, the land, the sky, houses, traditional chairs, cushions, curtains, lamps, and human characters have been painted.
 - Natural colours have been used in these paintings. Black, red, white, brown, blue, and yellow colours are used to decorate
 - from the local society." Vaachhak" was the famous painter of the time.



Ancient Buddhist painting



Stone painting of Mahayana



Medieval Indian Painting

MORDERN INDIAN PAINTING(1526—1857 CE)

Mughal painting

- generally confined to illustrations on the book and done in miniatures, and which emerged, developed and took shape during the period of the Mughal Empire between the 16th and 19th centuries
- heavily influenced by Persian miniatures
- Influenced several Indian styles, including the Rajput, Pahari and Deccan styles of painting.
- Theme was generally the visual records of the kings' deeds as hunters and conquerors.
- recorded their prowess as animal slayers, or depicted them in the great dynastic ceremonies of marriages
- More than a hundred painters were employed, most of whom were from Gujarat, Gwalior and Kashmir, who gave a birth to a new school of painting, popularly known as **the Mughal School of miniature Paintings**.
- The Hamzanama, stories of Amir Hamza, an uncle of the Prophet, were illustrated by Mir Sayyid Ali
- Jahangir encouraged artists to paint portraits and durbar scenes.
- Talented portrait painters were Ustad Mansur, AbulHasan and Bishandas.
- Shah Jahan (1627–1658) continued the patronage of painting. Some of the famous artists of the period were Mohammad Faqirullah Khan, Mir Hashim, Muhammad Nadir, Bichitr, Chitarman, Anupchatar, Manohar and Honhar.
- Aurangzeb had no taste for fine arts, probably due to his Islamic conservatism.
- Due to lack of patronage artists migrated to Hyderabad in the Deccan and to the Hindu states of *Rajputana in search of new patrons*.

Malwa, Deccan and Jaunpur schools of painting

- new trend in manuscript illustration was set by a manuscript of the *Nimatnama* painted at Mandu, during the reign of Nasir Shah (1500–1510)
- represent a synthesis of the indigenous and the patronized Persian style
- another style of painting known as Lodi Khuladar that flourished in the Sultanate's dominion of North India extending from Delhi to Jaunpur
- **Deccani painting** is a Deccan form of miniature painting, evolved in south-western India—(also known as Deccan), during the inception of Bahmani Sultanate in 1347 CE. The style developed under the patronage of Deccan sultanates—(namely, Bijapur, Golkonda, Ahmadnagar, Bidar, and Berar) and lasted until the extinction of the QutbShahi dynasty in 1687 CE
- **Nujum-ul-Ulum** (Stars of Science) (AD 1570), is a manuscript commissioned during the AdilShahi rulers of Bijapur, India. The manuscript is described as illustrated encyclopedia about ancient Indian astrology and astral magic.
 - The book consist of total 876 miniature paintings and about 400 paintings consist of various angels, planets, signs, degrees, sufic talismans, magical spells Hindu goddesses, astrological tables and horoscopes, animals and weapons.

Rajput painting

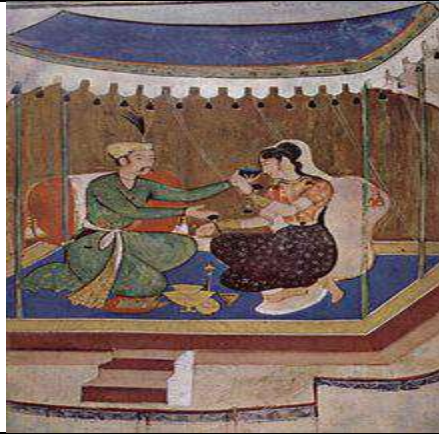
- Evolved and flourished, during the 18th century, in the royal courts of Rajputana.
- Each Rajput kingdom evolved a distinct style, but with certain common features.
- Depict a number of themes, events of epics like the Ramayana and the Mahabharata, Krishna's life, beautiful landscapes, and humans.
- Paintings were even done on the walls of palaces, inner chambers of the forts, havelies, particularly, the havelis of Shekhawati.
- The colours extracted from certain minerals, plant sources, conch shells, and were even derived by processing precious stones, gold and silver were used.

Mysore painting

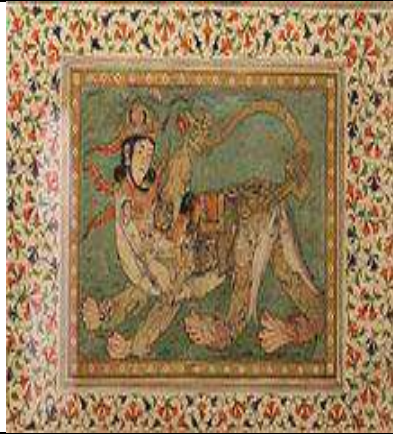
- an important form of classical South Indian painting that originated in the town of Mysore in Karnataka
- known for their elegance, muted colours and attention to detail
- The themes for most of these paintings are Hindu Gods and Goddesses and scenes from Hindu mythology.
- The process of making a Mysore painting involves many stages.
 - Making of the preliminary sketch of the image on the base. The base consists of cartridge paper pasted on a wooden base.
 - A paste made of zinc oxide and arabic gum is made called "gesso paste".
 - With the help of a thin brush all the jewellery and parts of throne or the arch which have some relief are painted over to give a slightly raised effect of carving.
 - Allowed to dry. On this thin gold foil is pasted
 - The rest of the drawing is then painted using watercolours. Only muted colours are used.

Post Independence (1947— present)

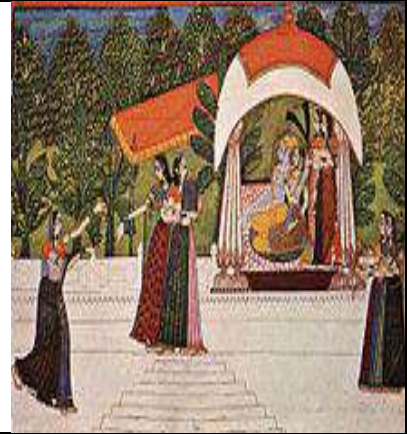
- During the colonial era, Western influences started to make an impact on Indian art.
- considered to have begun in Calcutta in the late nineteenth century
- The old traditions of painting had more or less died out in Bengal and new schools of art were started by the British.
- Raja Ravi Varma drew on Western traditions and techniques including oil paint and easel painting called as the **Bengal school of art**, which drew from the rich cultural heritage of India.
- It was succeeded by the Santiniketan school, led by Rabindranath Tagore's harking back to idyllic rural folk and rural life.
- Oil and easel painting in India began in the starting of eighteenth century which saw many European artists
- The **Progressive Artists' Group**, established shortly after India became independent in 1947, was intended to establish new ways of expressing India in the post-colonial era.
- The founders were six eminent artists – **K. H. Ara, S. K. Bakre, H. A. Gade, M.F. Husain, S.H. Raza and F. N. Souza**, though the group was dissolved in 1956, it was profoundly influential in changing the idiom of Indian art
- Well-known today are BalChabda, ManishiDey, V. S. Gaitonde, KrishenKhanna, Ram Kumar, Tyeb Mehta, BeoharRammanoharSinha and Akbar Padamsee. Other famous painters like JaharDasgupta, ProkashKarmakar, John Wilkins, and BijonChoudhuri enriched the art culture of India



A 17th-century Mughal painting



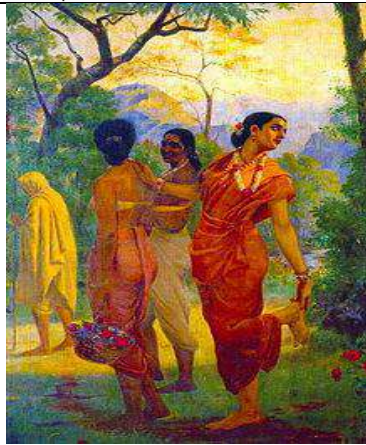
[Al-Buraq](#) depicted in the [Deccan style](#), emblematic of the Deccan's cosmopolitanism.



Rajput Paintings



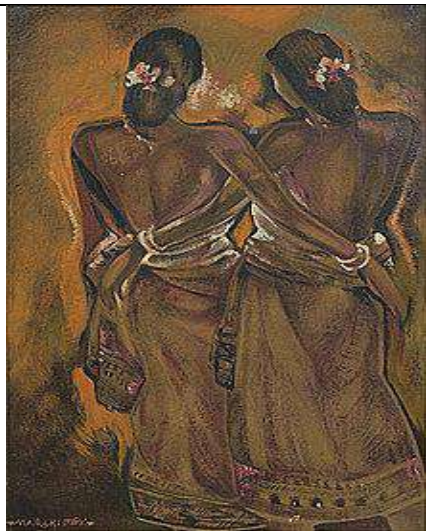
Mysore Painting depicting Goddess Saraswathi



Ravi Varma's work, such as Shakuntala (pictured),



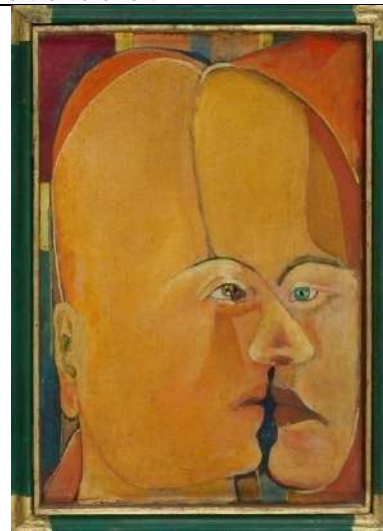
Bharat Mata by [Abanindranath Tagore](#) (1871–1951), a nephew of the poet [Rabindranath Tagore](#), and a pioneer of the movement



Bengal Women by ManishiDey



M.F Hussain Paintings



S.K Bakra – *Faces of Two Prophets*

INDIAN TRADITIONAL PAINTINGS DIVIDED INTO:

Assignment : Prepare an Introductory paragraph with the following points.

- Portrayed cultural and traditional vibrancy through its conventional arts and crafts.
- The 35 states and union territories sprawled across the country have their own distinct cultural and traditional identities.
- displayed through various forms of art
- Own style and pattern of a region is known as **FOLK ART**.
- **TRIBAL ART**: traditional art practiced by several tribes or rural population.
- Ethnic and simple, and yet colorful and vibrant.

FOLK ART

- the international market
- Traditional aesthetic sensibility and authenticity.
- bear distinctive colorful designs
- Treated with religious and mystical motifs.
- Example: the Madhubani paintings of Bihar, Patachitra paintings from the state of Odisha, the Nirmal paintings of Andhra Pradesh
- Not restricted only to paintings, but also stretches to other art forms such as pottery, home decorations, ornaments, cloths-making, and so on.

TRIBAL ART

- Reflects the creative energy found in rural areas that acts as an undercurrent to the craftsmanship of the tribal people.
- A wide range of art forms, such as wall paintings, tribal dances, tribal music, and so on.
- Drawn by ethnic human tribes
- Have been taught from generation to generation
- Depicts human cycles and core of our existence
- Main theme: life, birth, death, marriages, farming, celebrations, harvesting, FIVE elements of Mother Nature.
- Differ from region to region and style to style.

Assignment : convert the following paragraphs into highlighting points under each side headings

TYPES OF FOLK ART

1. Tanjore Art

Folk art is linked with the forgotten art of storytelling. Paintings are used to depict the visual counterpoint in narration in every region of India. Art forms of Rajasthan, Gujarat and Bengal narrate the myths and legends of local heroes and deities and construct a kaleidoscopic image of our glorious past and rich cultural heritage. Each work is a complete narration in itself, giving us a glimpse of the past, which has been kept alive by talent and devotion of our artists.

2. Madhubani Painting

Madhubani painting, also referred to as Mithila Art (as it flourishes in the Mithila region of Bihar), is characterized by line drawings filled in by bright colours and contrasts or patterns. This style of painting has been traditionally done by the women of the region, though today men are also involved to meet the demand. These paintings are popular because of their tribal motifs and use of bright earthy colours. These paintings are done with mineral pigments prepared by the artists. The work is done on freshly plastered or a mud wall.

3. Warli Folk Painting

Maharashtra is known for its Warli folk paintings. Warli is the name of the largest tribe found on the northern outskirts of Mumbai, in Western India. Despite being in such close proximity of the largest metropolis in India, Warli tribesmen shun all influences of modern urbanization. Warli Art was first discovered in the early seventies. While there are no records of the exact origins of this art, its roots may be traced to as early as the 10th century A.D. Warli is the vivid expression of daily and social events of the Warli tribe of Maharashtra, used by them to embellish the walls of village houses depicting agriculture, hunting, fishing, etc. geometric pattern are used. This was the only means of transmitting folklore to a populace not acquainted with the written word. This art form is simple in comparison to the vibrant paintings of Madhubani.

4. Pattachitra Painting

Pattachitra style of painting is one of the oldest and most popular art forms of Odisha. The name Pattachitra has evolved from the Sanskrit words patta, meaning canvas, and chitra, meaning picture. Pattachitra is thus a painting done on canvas, and is manifested by rich colourful application, creative motifs and designs, and portrayal of simple themes, mostly mythological in depiction.

Some of the popular themes represented through this art form are ThiaBadhia - depiction of the temple of Jagannath; Krishna Lila - enactment of Jagannath as Lord Krishna displaying his powers as a child; Dasabatar Patti - the ten incarnations of Lord Vishnu; Panchamukhi - depiction of Lord Ganesh as a five-headed deity.

5. Rajasthani Miniature Painting

The art of Miniature painting was introduced to the land of India by the Mughals, who brought the much-revealed art form from Persia. In the sixteenth century, the Mughal ruler Humayun brought artists from Persia, who specialized in miniature painting. The succeeding Mughal Emperor, Akbar built an atelier for them to promote the rich art form. These artists, on their part, trained Indian artists who produced paintings in a new distinctive style, inspired by the royal and romantic lives of the Mughals. The particular miniature produced by Indian artists in their own style is known as Rajput or Rajasthani miniature. During this time, several schools of painting evolved, such as Mewar (Udaipur), Bundi, Kotah, Marwar (Jodhpur), Bikaner, Jaipur, and Kishangarh.

6. Kalamezhuthu

Names like Rangoli, Kolam etc are not new to us, and neither is the tradition of drawing them at the entrance of homes and temples. In fact it is part of the domestic routine in Hindu households, who consider it auspicious to draw certain patterns at the doorstep and courtyard to welcome a deity into the house. This art form is a harmonious blend of Aryan, Dravidian and Tribal traditions.

Kalam (Kalamezhuthu) is unique form of this art found in Kerala. It is essentially a ritualistic art practiced in temples and sacred groves of Kerala where the representation of deities like Kali and Lord Ayyappa, are made on the floor.



1. Tanjore Art



2. Madhubani Painting



3. Warli Folk Painting



TYPES OF TRIBAL ART:

1. Saura Painting:

- One of the oldest tribal paintings
- Famous in eastern India, originally from Orissa
- Also known as 'ikon'
- On walls
- Figures like: human beings, Sun, Moon, elephants, horses,
- Has religious importance

2. Pithora Paintings

- Worship wedding Goddess or deity 'Pithora'
- Of Madhya Pradesh & Gujrat
- Pithora's images on walls
- Occasions like wedding and its ceremonies
- Considered as auspicious, bring good luck & success to the family

3. Pichwali Paintings

- Famous in Vaishnu's Temples.
- Of Rajasthan and other states of North India
- Made on cloth using dark and primary colours.
- Behind the statues of Lord Krishna
- Theme id various moods and dresses of Lord Krishna
- Use at various celebrations and festivals

4. Santhal Paintings

- Tribes of Eastern Zone Orissa, Bihar and West Bengal
- Main theme: Rituals, celebrations, merry making, family functions, dance, harvest, of Hindu Deities.
- Free hands and reflects perceptions of life
- Handmade papers with poster colours



2. INDIAN HANDICRAFTS

- Objects made by the skill of hand.
- Carry from the creator skills and centuries of evolutionary tradition.
- Crafts are an integral part in the life of an Indian
- Despite the rapid social and technological changes that are taking place.
- TYPES : Antiques, Art, Baskets, Paper Mache, Ceramics, Clock Making, Embroidery, Block Printing, Decorative Painting, Glass Work, Fabric, Furniture, Gifts, Home Décor, Jewellery, Leather Crafts, Metal Crafts, Paper Crafts, Pottery, Puppets, Stone and Wood Works.
- **Main classification :**
 1. **Folk Crafts:**
 - personal use or for limited client
 - e.g folk embroideries, creating textile, jewellery,
 - Usually particular cast or community.
 - Prepared by specific skilled family / group
 2. **Religious Crafts:**
 - Developed for religious centers and theme
 - Used for worshipping purpose.
 - E.g bronze lamp, Varanasi and Kanchipuram Textiles, Patacharita : A painting on cloth; and wood and stone carving
 3. **Commercial Crafts**
 - For decorative purpose
 - Use various types of tools and techniques
 - The commercial craftsmen are: the Weavers, the Dyers, the Printers, the Goldsmiths, and the Carpenters

History of craft in India

- Since ancient times links between India and rest of the world.
- Indian textiles and permanent Dyes were accepted throughout the world.
- E.g silk was exported to Europe, and Moscow from 6th century A.D.
- Arabs used to exchange handicrafts objects to gold and silver.
- Carpets, jewelry and textiles reached its pinnacle of perfection under The Moghals.
- Brocade and Velvet was introduced by The Last Moghals.
- England flooded the Indian market with its cheap machine- made items and ousted the homemade crafts.
- Swadeshi Movement focused and promotes the Indian craftsmen and maintain the ancient craft traditions.
- The Handicrafts Board was set up after Independence.

Handicrafts of India

- ❖ Handicraft is a type of craft where people make things using only their hands or basic tools. The items are usually decorative and have a particular use. Usually the term refers to traditional methods of making things. The items often have cultural or religious value.

1. Pashmina Shawls

Pashmina is a fine type of wool. Its textiles are first woven in [Kashmir](#). These shawls are made from a fine type of cashmere wool and are then transported to the valley of Kashmir in northern India, where it is entirely hand processed



2. Woodwork

The northern states of India have a rich tradition of the woodwork. Regions in [Punjab](#) are famous for its exquisite wooden furniture. Kashmir is famous for its artefacts made from the walnut trees. The artisans of [Chhattisgarh](#) specialise in wooden crafts like masks, doors, window frames and sculptures. [Jharkhand](#) is famous for its wooden toys which are always in a pair. The woodcarvings of [Goa](#) are an aesthetic blend of Portuguese and Indian cultures, and the designs are primarily floral, animal and human figures.



3. Pottery

Pottery is considered to be the most sensual form of all arts. The tradition of handmade pottery is prevailing in India since the time of Harappan Civilisation. North India is also known for various kinds of pottery designs, ranging from colours like orange, brown and light red in [Uttar Pradesh](#) to black and dark red in [Himachal Pradesh](#). In [Rajasthan](#), [Bikaner](#) is famous for its painted pottery.



4. Leather

The age-old convention of leather skill in India is proved by ancient sages and ascetics. In the past, leather was not only used in making clothes and footwear but also in making caps, bags, saddles, shield etc. India is famous worldwide for its leather products. [Madhya Pradesh](#) is also known for its leather craft. Various leather items are produced like shoes, bags and garments. Maharashtra is also famous for its leather shoes called Kolhapurichappals.



5. Jute

Jute craftsmen have created a worldwide position in the field of jute handicrafts. The huge range of jute crafts includes bags, office stationeries, bangles and other jewellery, footwear, wall-hangings and many more. India is a centre for jute handicrafts and people all over from the globe visit the jute handicrafts fairs to buy these works of perfection. [West Bengal](#), [Assam](#) and [Bihar](#), being the leading jute producers, pilot the jute handicrafts market in India.



6. Shell

There are three kinds of shell from which shell handicrafts are made in India ? conch shells, tortoiseshell and seashell. Different kinds of goods like bangles, forks, decorative bowls, lockets, curtains, chandeliers, mirror frames, table mats, etc. are the products of shell handicrafts. In general, the places located on the seashore like [Gulf of Mannar](#), Goa, [Odisha](#), etc.



7. Brass Handicrafts

Brass is known for its durability, and this feature adds to its advantage when used as handicrafts. Different items made of brass like Lord Ganesha's figure in different postures, vases, table tops, perforated lamps, ornament boxes, wine glasses, and many more are widely used in many Indian houses even today. These artisans dealing with brass handicrafts are distinctively known as "Kansaris". The manufacturing of brass handicrafts is mainly done in [Rajasthan](#).



8. Bamboo Handicrafts

Handicrafts that are made by using bamboo are the most eco-friendly crafts made in India. The diverse items made from bamboo are baskets, dolls, toys, furniture, mats, wall-hangings, crossbows, jewellery boxes and many more. Bamboo handicrafts are predominantly prepared in [West Bengal](#), [Assam](#) and [Tripura](#).



9. Phulkaris

Phulkari embroidery technique from the Punjab region and Haryana literally means flower work, which was at one time used as the word for embroidery.



10. Zardozi

Zardozi embroidery work involves making elaborate designs, using gold and silver threads along with studded pearls and precious stones. Intricate designs in gold are made of silk, velvet and even tissue materials famous in the state of Uttar Pradesh. Initially, the embroidery was done with pure silver wires and real gold leaves. However, today, craftsmen make use of a combination of copper wire, with a golden or silver polish, and a silk thread. This embroidery work is mainly a speciality of Lucknow, Bhopal, Hyderabad, Delhi, Agra, Kashmir, Mumbai, Ajmer and Chennai.



11. Saris and Silk

Saree or saris is a cloth of around 4.5 metres to 8 meters that women wrap around the waist and drape one end over the shoulder. The east of India is also famous for its silk saris, namely the Baluchari saris of West Bengal and Mooga and Assam silk of Assam. Their saris come in various colours and look very rich and magnificent. Banarasisarees are among the finest sarees in India and are known for their gold and silver brocade or zari, fine silk and opulent embroidery.



12. Carpet Weaving

Carpet weaving is also an important craft in North India. Uttar Pradesh has the largest carpet weaving industries in the country, and the carpets are incredibly beautiful with designs such as the TajMahal woven on them. More than 500 carpet manufacturing factories spotted the city of Bidohi, which made the city home to the leading hand-knotted carpet weaving industry hubs in South Asia. Also, Jammu and Kashmir is known for the silk carpets, which are mostly woven in Srinagar.



3. INDIAN MUSIC

Indian Classical Music

- many forms of art music
- have their roots in particular regional cultures
- evolved the Vedic literature of Hinduism and the ancient Natyashastra,
- two foundational elements, raga and tala.
- has seven basic notes with five interspersed half-notes
- the base frequency of the scale is not fixed
- intertonal gaps (temperament) may also vary.
- set to a melodic pattern called a raga
- specific ascent (aroha) and descent (avaroha) sequences,
- "king" (vadi) and "queen" (samavadi) notes and characteristic phrases (pakad)
- from any source, including religious hymns, folk tunes and music from outside the Indian subcontinent.
- The music of India includes Indian classical music, multiple varieties of folk, popular, pop, and, most recently, rock music
- Divided into:

Modern Indian Music

Northern Indian

- Hindustani classical music
- Two foundational elements, raga and tala.
- emphasis on improvisation and exploring all aspects of a raga
- emerged as a distinct form because of Persian or Islamic influences

South Indian

South Indian

- **Carnatic music**
- evolved from ancient Hindu traditions
- main emphasis in Carnatic music is on vocal music
- most compositions are written to be sung, and even when played on instruments
- meant to be performed in gāyaki (singing) style.
- Main Elements:
 1. **Śruti:** (the solfege) commonly refers to musical pitch.
 2. **Swara:** refers to a type of musical sound that is a single note, consist of seven notes, "sa-ri-ga-ma-pa-da-ni"
 3. **Raga system:** a set of rules for building a melody. It specifies rules for movements up (aarohanam) and down (avarohanam)
 4. **Tala system:** refers to a fixed time cycle or metre, set for a particular composition, which is built from groupings of beats
 5. The **main traditional forms** of improvisation in Carnatic music consist of the following
 - Alapana
 - Niraval
 - Pallavi
 - Ragam
 - Swarakalpana
 - Tanam
 - TaniAvartanam

Other Indian Music :

Folk Music

- Indian folk music reflects India's vast cultural diversity and has many forms, including *bhangra*, *lavani*, *dandiya* and *Rajasthani*.
- The instruments and styles of folk music (*desi*) have had a historical influence on the *ragas* of classical music, which is viewed as a higher art form.
- It is also not uncommon for major writers, saints and poets to have large musical libraries and traditions attributed to them, often sung in *thumri* (semi-classical) style.
- Most of the folk music of India is associated with dance.

Bhavageete

- *Bhavageete* ('emotion poetry') is a form of expressionist poetry and light music.
- Most of the poetry sung in this genre pertain to subjects like love, nature, and philosophy.
- This genre is quite popular in many parts of India, notably in Karnataka and Maharashtra, and may be called by different names in other languages.

Bhangra

- *Bhangra* is a lively form of music and dance that originated in the Punjab region in South Asia. *Bhangra* began as a part of harvest festival celebrations, and eventually became a part of such diverse occasions as weddings and New Year celebrations. *Bhangra* is a fusion of music, singing and the beat of the *dhol* drum, a single-stringed instrument called the *iktar* (ektara), the *tumbi* and an instrument reminiscent of an enlarged pair of tongs called *chimta*. The accompanying songs are small couplets written in the Punjabi language called *bolis*.

Modern Indian Music – A background

- modern Indian music is not Indian at all
- modern Indian music is not Indian
- does not follow any of the raag note patterns of Indian music
- this music has none of the characteristics of being typically Indian – in other words Indian folk-music
- For accompaniment with this music, it is all too easy to use foreign 'orchestral' music.
- In the late 1970s and early 1980s, rock and roll fusions with Indian music were well-known throughout Europe and North America.
- Ali Akbar Khan's 1955 performance in the United States was perhaps the beginning of this trend.
- Soon was followed by Ravi Shankar, playing his sitar.
- Rock music in India has its origins in the 1960s and 1970s when international stars such as The Beatles visited India and brought their music with them.
- These artistes' collaboration with Indian musicians such as Ravi Shankar and Zakir Hussain have led to the development of Raga Rock.
- Indian Rock Bands began to gain prominence only much later, around the late 1980s. It was around this time that the rock band Indus Creed

- The introduction of MTV, in the early 1990s, exposed young Indian musicians to various forms of rock such as grunge and speed metal.
- Some prominent bands include Parikrama, Pentagram, Thermal and a Quarter, Zero, Half step down and Nexus. Entities such as DogmaToneRecords, are dedicated to promoting and supporting Indian Rock.
- In music, the term "modernism" refers generally to the significant departures in musical language that occurred at or around the beginning of the 20th century, creating new understandings of harmonic, melodic, sonic, and rhythmic aspects of music.

Modern Music Period- Features

- Modernism in music is characterized by a desire for or belief in science, nature, intelligence, anti-romanticism, and other forward thinking.
- Modern music is also known as 20th Century Music. It has been one of great changes.
- For example, science, technology and our growing understanding of the world around us have inspired people to write music that reflects what they see in the world around them, and how they feel about what they see.
- During the Modern period, art experimented with new forms, techniques, and styles . Music composers did the same thing.
- They explored different ways to produce sound.
- Rhythmic patterns became much freer, often changing frequently in a piece.
- Melody was becoming more dissonant--harsher--moving by leaps rather than steps.
- Harmony was also becoming more dissonant.
- Polytonality--the playing together of two keys at once was occurring more frequently. Battle lines were drawn between tonal and atonal music.

Hindustani Classical Music in Modern India

- An important part of the cultural landscape of Northern India.
- The tradition of Indian Music has developed simultaneously in two cultures.
 1. One is in the north, covering the entire region of Dwarka to Manipur and Srinagar to Belgaon, and
 2. The other is in the south, prevalent in Andhra Pradesh, Karnataka, Tamil Nadu and Kerala. Both of these streams of music developed almost parallel melodic practices, in sync with the common musical heritage and common musical ideals, similar to the language structure in the North and South.



4. INDIAN DANCE & DRAMA

INTRODUCTION:

In India, the aesthetic strikes a balance between the ancient and the modern, the classical and the folk. Come to a recital and you witness a moving eloquence: each motion a suggestion, each gesture a silent phrase.

Dance in India is a rhythm capture in the vast plains and enraptured to the beat of the musicians. Eyes, faces, hands, feet move to varying moods, reflecting an idiom of the perfection of an ancient art.

Home to BharataNatyam, once performed in temples by devdasis. Indian dance reflects a magnificent heritage, individually perfected by each dancer. Aiding the swishing of silk, the glitter of diamonds and the note of tinkling bells worn on the dancer's feet is the orchestra.

The major percussion is the tabla, pakhawaj or mridangam played to an intricate beat by the artiste's fingers. Other major instruments are the sitar and veena, stringed instruments and the harmonium, a key board instrument. But a major orchestra has these and a large number of their variations. Each region has its peculiarities and instruments. Among the more common, however, are the tanpura-a stringed instrument used as a drone, and the shehnai and nadaswaram, wind instruments used at weddings and associated with welcomes and joyous celebrations.

TYPES OF CLASSICAL INDIAN DANCE & DRAMA

Dance and drama in India are synonymous. Each expression of a dancer tells us a story. But certain dance forms have become the basis of the theatre tradition in India. Of these, Kathakali is the most well known with the dancers garbed in brilliant plumage, their magnificent make-up having taken the best part of a day. Then there is the Yakshagana, and the Bhavai and Tamasha, the latter very popular in west India and expressive of more modern needs.

Modern theatre directors have experimented with the dramatic form resulting in startling variations: ballets in the, Yakshagana and MayLirbhanjChhau strain, musical extravaganzas and street theatre. Each of them owes to the tradition of the past.

The excitement of the Bhangra never ceases. The Ghoomar is poetry in motion. Folk dancers gather in striking ensemble to recollect notes on the beautiful hills and streams, the mountains and the jungles that are their home. The snow lion pounces from the highlands of Himachal to Sikkim. The skirts of the women spinning to the DandiyaRass flip-flap to the clack-clack of the sticks in their hands. Qawwali singers clap their hands in time to the beat of the song. And the milk- maids look beseechingly as Krishna and Radha dance the Raas Lila.

Dance in India, is rooted in age-old tradition. Like the Indian culture, Indian classical dances are equally diverse in nature. There are numerous classical dance forms in India and innumerable folk dances.

Sattriya is a classical dance-drama performance art with origins in the Krishna-centered Vaishnavism monasteries of Assam, dances of India are usually spiritual in content. Though the folk dances of India are also spiritual and religious in content but the main force behind the folk dances of India is the celebratory mood.

Like the Indian culture, Indian classical dances are equally diverse in nature. There are numerous classical dance forms in India and innumerable folk dances. Each dance form can be traced to different parts of the country. Each form represents the culture and ethos of a particular region or a group of people

The most popular classical dance styles of India are Bharatanatyam of Tamil Nadu, Kathakali and Mohiniattam of Kerala, Odissi of Orissa, Kathak of Uttar Pradesh, Kuchipudi of Andhra Pradesh and Manipuri of Manipur. Sattriya of Assam,



The Indian dancer catches in her movements the shyness of the gazelle, the haunting smile of a lingering memory and the divinity of the great Cosmic Dancer, Shiva, the Nataraja, to whom all dancers must pay obeisance before and after each performance. To have seen an Indian dance is to have experienced bliss.

5. ANCIENT ARTICULTURE INDIA

Assignment : underline the **KEY WORDS** in the following Introduction paragraphs.

INTRODUCTION

One of the most enduring achievements of Indian civilization is undoubtedly its architecture. Indian architecture, which has evolved through centuries, is the result of socio-economic and geographical conditions. Different types of Indian architectural styles include a mass of expressions over space and time, transformed by the forces of history considered unique to India. As a result of vast diversities, a vast range of architectural specimens have evolved, retaining a certain amount of continuity across history.

Indian architecture, belonging to different periods of history, bears the stamp of respective periods. Though the cities of Indus Valley provide substantial evidence of extensive town planning, the beginnings of Indian architecture can be traced back to the advent of Buddhism in India. It was in this period that a large number of magnificent buildings came up. Some of the highlights of Buddhist art and architecture are the Great Stupa at Sanchi and the rock-cut caves at Ajanta.

With the establishment of Hindu kingdoms in South India, the south Indian school of architecture began to flourish. The most notable achievements of the Pallava rulers were the rock-cut temples of Mahabalipuram and the temples of Kanchipuram. The Chola, Hoyasala and Vijayanagar rulers also did remarkable job in the field of architecture. The temples at Thanjavur, Belur and Halebid bear testimony to the architectural excellence of the South Indian rule.

ASSIGNMENT :Covert the below information into paragraphs.

| AGE | KNOWN AS | LOCATION | YEAR | DETAILS | EXAMPLE |
|-----------------------|--|---|-----------------------------------|--|---|
| Stone Age | Bhimbetka Petroglyphs Means "rock carving." | Madhya Pradesh | 290,000-700,000 BCE | <ul style="list-style-type: none"> • consists of numerous cupules • comprises a large horizontal tunnel roughly 25 metres long | Nine cupules (cup-shape hollows) |
| | Daraki-Chattan Rock Shelter | the Indragarh Hill, near Tehsil Bhanpura, Madhya Pradesh, | 400,000 to 1.8 million years BCE. | <ul style="list-style-type: none"> • two vertical panels densely pitted with 498 cupules dating | <ul style="list-style-type: none"> • the Venus of Tan-Tan • the Venus of Berekhat Ram |
| Bronze Age / Iron Age | the Vedic period | The Harappan civilization of the Indus River Valley | 1100-200 BCE | <ul style="list-style-type: none"> • religious art • style – known as- the Painted Grey Ware culture, | <ul style="list-style-type: none"> •Painted Grey Ware pottery shard •agricultural tools, domesticate horses, |
| | The 16 Mahajanapadas | re-urbanized, the Indus and Ganges valley | 700-200 BCE | <ul style="list-style-type: none"> • Indian religion Jainism and Buddha. • the ceramic styles of a new tradition, known as the Northern Black Polished Ware culture | <ul style="list-style-type: none"> • Ancient Indian Antennae sword; Metalwork • Ancient Indian Axe Blade • Four larger bronze statues of a buffalo, rhinoceros, elephant, and bull with chariot driver |

MEDIEVAL INDIAN ART & ARCHITECTURE

DIFFERENT KINGDOMS STYLE

An important phase of Indian architecture began with the Mauryan period. The material prosperity of the Mauryans and a new religious consciousness led to achievements in all fields. Megasthenes, the Greek ambassador of Seleucus Nicator who visited the Mauryan court, described Chandrgupta Murya's palace as an excellent architectural achievement. It was a large palace carved out of wood.

There were significant advancements in the fields of architecture during Ashoka's reign (c. 268-232 BC). Mauryan art and architecture imbibed the influence of the Persians and the Greeks. During the reign of Ashoka, many monolithic stone pillars were erected, on which teachings of 'Dhamma' were inscribed. The highly-polished pillars with animal figures adorning the top (capitals) are unique and remarkable. The lion capital of the Sarnath Pillar has been accepted as the emblem of the Indian Republic. Each pillar weighs about 50 tonnes and is about 50 feet high.

The stupas of Sanchi Sarnath are symbols of the achievement of Mauryan architecture. The gateways of the Sanchi and Stupa with the beautiful sculptures depicting scenes from the Jataka stories bear testimony to the skill and aesthetic sense of the artisans.

The blending of Greek and Indian art subsequently led the development of Gandhara art. The order schools of art and architecture were the indigenous Mathura school and Amaravati school. A large number of statues of the Buddha were built by the artisans of these schools, especially after the first century AD, under the influence of the Kushanas. Under the Gandhara school of art, life-like statues of the Buddha and Bodhisattvas were made in the likeness of Greek gods, even though the ideas, inspirations and subject were all Indian. Rich ornaments, costumes and drapery were used to impart physical beauty. The sculptures were in stones, terracotta, cement-like material in clay.

The figures of the Mathura school were made of spotted red stone. They had a distinct spiritual look about them. Here, along with the Buddha we also find sculptures of Jaini deities.

The Amaravati school developed under the patronage of the Satavahans of the Andhra region. A great stupa was built at Amaravati in the lower Godavri region. The walls of the stupa were adorned with bas-relief; these had a carved medallion and decorative panels. Nagarjunakonda is another place that is famous for its Buddhist architecture.

The Gupta period marks the beginning of the construction of free-standing Hindu temples. The temple at Deogarh (Jhansi district) which has a central shrine or garbhagriha where the image

of the diety is placed and another temple at Bhitargaon (Kanpur district) are two fine example of this period.

Cave architecture

The development of cave architecture is another unique feature and marks an important phase in the history of Indian architecture. More than a thousand caves have been excavated where archaeologists have discovered sculptures that were created in the second century BC and AD tenth century. Famous among these were the Ajanta and Ellora Caves of Maharashtra and the Udayagiri Caves of Odisha. These caves hold Buddhist viharas, chaityas as well as mandapas and pillared-temples of Hindu gods and goddesses.

Rock-cut temples

Temples were hewn out of huge rocks. The earliest rock-cut temples were built in the western Deccan in the early years of Christian era. The chaitya at the Karle caves with fine high halls and polished decorative walls is a remarkable example of rock-cut architecture. The Kailash temple at Ellora built by the Rashtrakutas and the ratha temples of Mahabalipuram built by the Pallavas are other examples of rock-cut temples.

In all probability, the stability and permanence of rocks attracted the patrons of art and builders, who decorated these temples with beautiful sculptures.

Free-standing temples

The temple-building activities that began during the Gupta rule continued to flourish in later periods. In southern India, the Pallavas, Cholas, Pandayas, Hoysalas and later, the rules of the Vijyanagar kingdom were great builders of temples. The Pallavas rulers built the shore temple at Mahabalipuram. The Pallavas also built other structural temples like the Kailasanathar temple and the Vaikunta Perumal temples at Kanchipuram. The Cholas built many temples, the most famous being the Brihadeshwara temple at Thanjavur. The Cholas developed a typical style of temples architecture of South India called the Dravida style, complete with vimana or shikhara, high walls and the gateway by a gopuram. Magnificent temples were built at Bekur and Halebidu, where the stone engravings reached even greater heights. In northern and eastern India magnificent temples were constructed as well, in what is now referred to as the Nagara style. Most of them consisted of shikara (spiral roof), the garbhagriha (sanctum) and the mandap (pillared-hall)

Odisha has some of the most beautiful temples such as the Lingaraja temple was built by the somavamsi kings, with additions by the Ganga rules, the Mukteshvara Temple in Bhubaneswar and the Jagannath Temple in Puri are also instances of exemplary temple art. The Sun Temple in Konark was built in the thirteenth century by the Eastern Ganga ruler Narasimhadeva I. The temple is dedicated to surya (the sun God) and has been designed as a twelve-wheeled chariot.

The temple complex at Khajuraho was built by Chandela rulers between the tenth and eleventh centuries in the Bundelkhand region of Madhya Pradesh. Most important among them is the Kandariya Mahadeva Temple.

Mount Abu in Rajasthan is known for Dilwara temples dedicated to Jain tirthankaras. These were built in pure white marble and adorned with exquisite sculptures. They were built under patronage of the Solanki rulers.

The Somnath temple in Gujrat, the KashiVishvanath temple in Varanasi, the GovindaDevji Temple in Mathura, Kamakhya Temple in Guwahati, Shankaracharya Temple in Kashmir and the Kali Temple at Kalighar, in Kolkata, are some other important temples which bear testimony to the temple-building activities of Indian sub-continent.



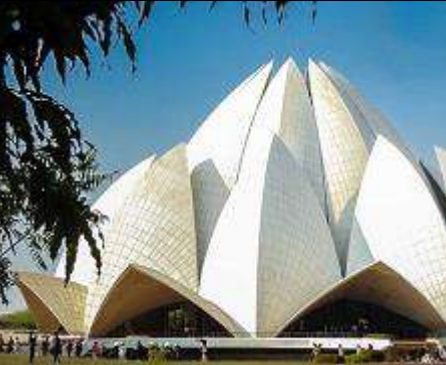
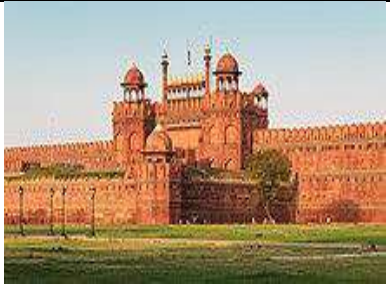


ASSIGNMENT: convert the above information of different kingdoms' style into the following table. You can take help of Internet.

| Dynasty / Kingdom | Year | Style | Place | Example |
|-------------------|------|-------|-------|---------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |



MODERN INDIAN ART & ARCHITECTURE

- ❖ Modern Indian architecture still honors and upholds the traditions of India, but the architectural form works to better meet the needs of modern day society
- ❖ When the Indian Punjab government took on world famous architect Le Corbusier to design the city of Chandigarh, an architectural breakthrough began.
- ❖ India began to draw inspiration in the years following Le Corbusier's work, and thus began a more rapid evolution of modern architecture.
- ❖ modern form and style
 - Building is less ornate and more expressive in form.
 - Materials are basic, but cutting edge.
 - Use of steel and glass to erect innovative building forms is very popular and striking in the landscape.
 - High rise buildings are also common in these dense urban areas where space must be maximized.
 - Response to ecology and climate, designing for the environment.
 -
- ❖

| | | |
|---|---|--|
|  |  |  |
| <p>The Taj Mahal is an example of traditional Indian architecture. Domes sit atop bases, and minarets are the slender towers to the sides</p> | <p>The urban skyline of Mumbai, India</p> | <p>The Lotus Temple, showcasing three layers of concrete shell petals , symbolic of lotus flower</p> |
|  |  |  |
| <p>Red Fort was the main residence of the Mughal emperors for nearly 200 years, until 1856.</p> | <p>The Golden Temple in Amritsar.</p> | <p>Panorama of the Indian Institute of Management Ahmedabad designed by Louis Kahn, and completed in 1961.</p> |

6. SCIENCE & TECHNOLOGY

Science = art. They are the same thing.

INTRODUCTION

Both science and art are human attempts to understand and describe the world around us. The subjects and methods have different traditions, and the intended audiences are different, but the motivations and goals are fundamentally the same.

Both artists and scientists strive to see the world in new ways, and to communicate that vision.

When they are successful, the rest of us suddenly 'see' the world differently. Our 'truth' is fundamentally changed.

Both scientists and artists with nothing new to reveal are failures. Scientists and artists who cannot communicate their insights are failures. It takes both skills to make a successful scientist or artist. Scientists who can communicate but have nothing new to say are frauds and hype-sters. Artists with new views of the world but who cannot communicate them effectively are crackpot fringes.

Scientists tend to struggle more gaining the new insights. Artists tend to struggle more with the communication. Both often work hard to gain the background and skills that will help them be successful. That's why there are prestigious schools of science and art.

Scientists do experiments over and over and over, trying to pin down some new aspect of reality. Once they have their new understanding, there are pre-arranged traditional modes of communication that make that part easier.

Artists often start with the new vision, then work through 'periods' in which they explore how best to get the message across. They have shows. They seek feedback to help them understand what works.

Artists and scientists often need to invent new concepts and technologies to accomplish their goals.

Both science and art have useful spin-offs. Applied science is technology. Applied art is decoration. Technology and decoration are applications of science and art for practical purposes. Technology and decoration make life easier. But they don't change how we fundamentally perceive what is around us. Science and art do.

INDIAN SCIENCE & TECHNOLOGY HERITAGE

The Indian Civilization has a long recorded history of scientific culture that goes back to more than 5000 years. This gallery portrays the rich contributions of ancient India in science and technology. Indians developed one of the earliest written scripts (the Indus Scripts), built urban towns, with residential complexes and wastewater systems, way back in 2500 BC. Ancient Indians produced the Delhi Iron Pillar that has remained rust less for more than 500 years. They discovered the zero and were the first to use decimal place value number system way back in 500 AD. Cotton Gin, an Indian invention, was the fore runner of all geared machines that subsequently paved the way for the west to bring about an industrial revolution. Indians also created enduring architectural constructs that have become eternal world heritages. They smelted zinc, which requires precise metallurgical knowledge, on industrial scale and produced thousands of tons of zinc over hundreds of years.

1. Science and Technology in India- a time line - The Indian Civilization has a long recorded history of scientific culture that goes back to more than 5000 years. This gallery portrays the rich contributions of ancient India in science and technology. Indians developed one of the earliest written scripts (the Indus Scripts), built urban towns, with residential complexes and wastewater systems, way back in 2500 BC.

2. Science and Technology in India- a time line - The Indian Civilization has a long recorded history of scientific culture that goes back to more than 5000 years. This gallery portrays the rich contributions of ancient India in science and technology. Indians developed one of the earliest written scripts (the Indus Scripts), built urban towns, with residential complexes and wastewater systems, way back in 2500 BC.

3. Technology Traditions of Indus valley - This exhibit is controlled by CPU. This exhibit gives the idea of the Indus valley civilization at its peak during 2600BC to 1900 BC.

4. Harappans the World's first town planners - In this exhibit we can study that Harappans were the first to adopt systematic town planning. The exhibit consists of the various models collected during excavation.

5. Glimpses of Harappan technology - In this exhibit the technological traditions of Harappans in ceramics, pottery, refined personal ornaments, metallurgy, steatite, agate, and shell ornaments.

6. Shell bangle making - This exhibit is a model showing the making of bangles with help of the shells.

7. Textiles- Indian origin - It is pointed by the scholars that the Harappans were the first to grow the cotton and had established Cotton Empire.

8. Introduction - An attempt is made with this part of the exhibit to show case the ancient Indian independent contributions in science. Specially focusing on some important fields of science, mathematics, medicines etc.

9. Triguna - The gunas though assuming infinite diversity of forms and powers can neither be created nor destroyed. The idea of conservation of matter was studied long back in India.

10. Tanmatra - This exhibit shows about the five subtle infra atomic particles named as tanmatras. These five Tanmatras are not exactly the human senses of sound, but they signify corresponding energy potentials.

11. The panchabhuta - This exhibit tells about the five basic elements that is sabdha, sparsha, rupa, rasa and gandha tanmatras.

12. Atom 2500 years ago - Vaisesika atomism (4th Century BC) four basic elements of vayu, tejas, ap, and ksiti are considered material and have atomic structure. The study of atom was done in India in fourth century BC.

13.

a) Gravity - It was regarded that gravity not as a force but as a cause of the act of falling in 5th century BC.

b) Elasticity - Elasticity was conceived as the property that responsible for a bow or a branch of tree, which can undergo contraction or expansion.

c) Viscosity - It was conceived as the cause of cohesion and smoothness.

14. Properties of matter- Vaisesika has laid considerable emphasis on properties of matter. This exhibit tells about the fluidity property of matter.

15. Zero the Indian invention - This exhibit shows about the use of zero by Indians in Mathematics 2000 years ago.

16. Big numbers - This exhibit tells how big numbers were used in decimal system. It also tells how Aryabhata used big numbers to express revolutions of the earth.

17. Decimal place value - This exhibit tells us the use of decimal system in the history of India.

18. Word numeral - The nine numbers ranging from 0 to 9 were related to physical realities. In this exhibit you can study how the different numbers were used to express each number.

19. Brahmas discs - This exhibit tells about the almighty Brahma's game of building this universe. And still how many years he has to play the game of building this universe.

20. Golden rule of three - This exhibit tells us how the method of ratio and proportion was freely dealt with in Bakhshali Manuscript in 2nd AD.

21. Square root - This exhibit tells you the method of finding the square root and the cube root by Aryabhata

- 22. Rasashala- Ancient Indian chemical lab** - This exhibit shows how different kinds of apparatus were used in extraction of medicines in the chemical lab of Nagarjuna. We can study the Indian works on alchemy and chemistry.
- 23. Value of pi** - This exhibit tells how accurately the value of π was found out by Aryabhata in fourth century.
- 24. Pythagoras or sulba sutra:** This exhibit tells about the sulba sutra or Pythagoras theorem.
- 25. Bidri and lost wax (acclaimed Indian crafts)** - This exhibit is explained with help of a documentary of age old method of making Bidri work. The bidri work is an original technique which involves inlaying of gold or silver on zinc, steel and copper base.
- 26. Area of circle** - This exhibit tells how Aryabata gives the area of circle formula which is known even today.
- 27. Mathematical series:** This exhibit shows us about the trigonometric operations.
- 28. Sushratha (The plastic surgeon)** - This exhibit tells how the great Shushruta had used surgery techniques in olden days. It introduces us about the various surgical equipment used.
- 29. Ayurveda (Ancient Indian medical system)** - This exhibit tells about the Ayurveda science in the Vedic period. It introduces us to the Science of life that originated in ancient India. Ayurveda elaborately deals with the measures for a healthy life.
- 30. Dravyaguna (Harnessing natures gift for human health) -**
- 31. Crucibles (shapers of metal technology)** - This exhibit tells the story of the use of crucibles in the metal extraction. It gives the idea of the heat resistant crucibles used in the Indian metallurgy.
- 32. Harnessing metals** - This exhibit tells us about the old method of mining used in India. It introduces us the method of mining the ores.
- 33. Iron smelting (Exploiting the master metal)** - This Exhibit has a model of furnace used in extraction of iron. A model of Naikund furnace, one of the most ancient iron furnace in India has been displayed here.
- 34. Delhi Iron pillar-** The rustless wonder: This exhibit tells us about the making of one of the rustless wonder in the world. It is 1600 years old .This exhibit introduces us to the making of this rustless wonder
- 35. Legendary Indian wootz steel** - This exhibit tells us about that special iron which was used by Indians to prepare the swords in the olden periods. This special steel had a great demand from Damascus, where the famous Damascus swords were produced.

- 36. Zinc smelting (An Indian contribution)** - This exhibit introduces us to the age old method of smelting zinc in India. Ancient Indians were the first to produce zinc on large scale. This exhibit consists of a furnace used in smelting of zinc called 'kosthi'.
- 37. Indian musical instruments** - This exhibit consists of some musical instruments of Indian origin. Two TVs are provided showing the slides of various Indian instruments. Music is very old to India.
- 38. Heritage quiz** - This quiz programme can be attended by four participants. This is software produced by VITM Bangalore.
- 39. Story of India** - This exhibit consists of a TV in which the story of India will be repeated continually. This story tells us about the Indian past traditions which are still alive.
- 40. Glimpses of science and technology in India** - This exhibit is operated by CPU the visitors can use the mouse and study about the traditional technology of India.
- 41. Pottery** - The exhibit consists of a still model of making pottery in the past which is still followed in India.
- 42. Pottery (preserving for posterity)** - This exhibit tells us the story of pottery which evolved in Harappan period in India which is still used in the country side.
- 43. Architecture** - This exhibit is controlled by CPU the visitor can study the various architecture styles used in India. viz, Jain style, Islamic, Rock cut.....etc
- 44. Weights and measures** - This exhibit tells us about the weights and measures system used in Harappan period.
- 45. Yarghu (The portable cannon cleaner)** - This exhibit is a miniature model of the portable canon cleaner used in the Akbar's regime. This was invented by Shiraji.
- 46. The art and technology of cannons** - This exhibit introduces us to the art of making canons and the use of multi-barrel canons in the past.
- 47. Architecture of temple** - This exhibit is controlled by CPU the visitor can study the various architecture styles used in India. viz, Jain style, Islamic, Rock cut.....etc
- 48. Architecture (standing testimony of past achievements)** -This exhibit is controlled by CPU the visitor can study the various architecture styles used in India. viz, Jain style, Islamic, Rock cut.....etc.
- 49. Qutub minar** - This is a miniature model of Qutub Minar situated in Delhi.
- 50. Ram yantra** - This is a model of Ram yantra in Jaipur, which was used to study the altitude of the celestial objects in the past.

51. Samrat yantra - This is a model of the Yantra present in Jaipur which was used to measure time and the position of the stars.

52. Konark wheel - This is a small model of the wheel in the temple of sun god in konark.

53. Sun temple of konark - This is a small model of sun god temple in Konark, carved in stone.

54. Sun god - This is the miniature stone sculpture of sun god present in Konark Temple.

55. Excellence in Indian crafts (Traditional knowledge from the past):

56. Heritage video corner - This is a place for the visitors to sit and relax while watching the Heritage video of India.

57. Gharat - This is a model showing the use of hydel power to grind the grains.

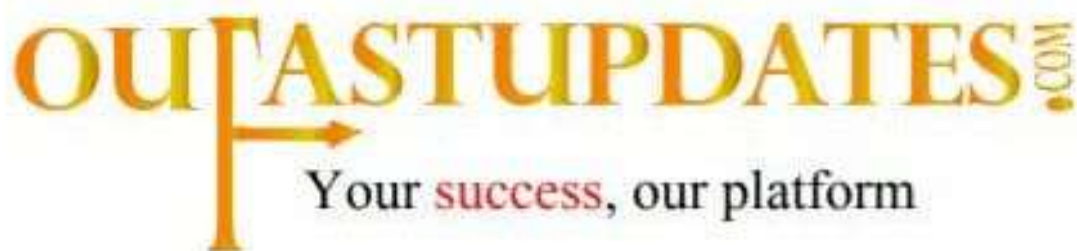
58. Noria and saquia (The art devices of Indian origin) - This is the model of a water pumping system used in Egypt which was copied from India.

59. Gharat (Harnessing energy from nature) -This is a model showing the use of hydel power to grind the grains.

60. Ancient Indian glass - This exhibit tells us how the use of glass was used in ancient India since the period of Ramayana.

61. Metallurgy Heritage - This exhibit tells us the use of metals in various ways in ancient India like gold, copper, silver, zinc, brass, iron etc.

62. Techniques of coin making - This model tell us the method used in minting coins in the olden periods.



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