

Ritu Verma

BHARAT

Glimpses of the Legacy-I



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please contact:**

**BLUEROSE PUBLISHERS
www.BlueRoseONE.com
info@bluerosepublishers.com
+4407342408967**

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SANATAN DHARMA

The basis of being a Hindu is Sanatan Dharma practiced by Human beings since time immemorial.

Sanatan means Eternal, which is always there and is timeless. Dharma means the laws of living, laws which govern life. They are the Niyam (rules) of the universe and guide the ways of living a life so that the Jeevatama (consciousness) can merge with Paramatma (Brahman). Sanatan Dharma means to do that which is righteous and virtuous. Humans are the manifestation of that Brahman which is supreme and so is all the material world. They are the part of Brahman in the form of Atma(soul) which when they descend on the earth takes the form of a body. Thus, their Karmic cycle begins. Brahman is the source and end of energy which can't be created or destroyed and which has always been there and will always be there. It is:

- All pervading energy, Pure consciousness.
- Brahman is in every thing and everywhere. It is the ultimate reality.
- It is shapeless, bodyless, genderless, colourless.
- It is the source of creation.
- It is absolute existence, knowledge and bliss.
- Brahman and Atma are one.

Atma is formed into matter and then Yogmaya (illusion) starts impacting that body. Thus the cycle of life begins, which ends once all the karma of all the births are over. Whatever happens in one's lifetime is because of the past or present Karma. We know of this Atman(soul) when we come out of this veil of Yogmaya (worldly desires). Then our soul achieves Moksha/ Nirvana. Till then it goes through the cycles of birth and death. This Yogmaya is the delusional world that we live in.

The following shlokas speak the same truth:

1. **ब्रह्म सत्यं जगिन्मथ्येत्येवंरूपो विनिश्चयः ।**

सोऽयं नित्या नित्यवस्तुविवेकः समुदाहृतः ॥ २० ॥

brahma satyam jaganmithyetyevamrūpo viniścayaḥ |

so'yaṁ nityānityavastuvivekaḥ samudāhṛtaḥ || 20 ||

Meaning: A firm conviction of the mind to the effect that brahman is real and the universe unreal, is designated as discretion (viveka) between the real and the unreal.

The philosophy of Advaita Vedānta has been briefed in the above sloka attributed to Acharya Shankara.

2. **ब्रह्म सत्यं जगिन्मथ्या जीवो ब्रह्मैव नापरः।**

अनेन वेद्यं सच्छास्त्रिमित वेदान्तिडिण्डमः॥

brahma satyam jaganmithya jivo brahmaiva nAparah

anena vedyam sacchasttram iti vedanti dindimah...

- Brahma JyanaVali Mala by Shri Adi Shankaracharya

Meaning: Brahman is the only truth, the world is unreal, and there is ultimately no difference between Brahman and individual self. This should be understood as the correct Shastra proclaimed by Vedanta. The most important texts of Hindus are Ved which comprises of the Suktas. Suktas are a combination of Mantras. The sages were the Drishta (who had seen and heard) of these mantras and passed them on through Smriti (memory) and Shruti (hearing).

Hindus believe in the philosophy of '**Vasudaiv Kutumbakam**' - At the level of consciousness we all are one. This level cannot be compared to the intellectual level of any individual.

Sanatan Dharma allows individuals to be a Seeker in the search for Truth following their own path, leading to the ultimate Brahm (Consciousness or energy of the Brahmand (Universe)). The six ways of Sanatan Dharma of why, what and how one can achieve this knowledge are:

1. Pratyaksh (perception)- acquiring knowledge through self-experience in relation to memory and emotions.
2. Anuman (inference)-acquiring knowledge through deriving logical facts after deep learning.
3. Upaman (comparison)- acquiring knowledge through comparisons, similarities and examples
4. Arthapati (postulation)- acquiring knowledge through presuming after observing facts.
5. Anuplabdhi (negating the results)- acquiring knowledge through negative conclusions and changing the perception to what's not seen.
6. Shabda (testimony of past reliable experts) - acquiring knowledge through written texts like Ved, Puranas or spoken words of Gurus and Acharyas.

So, Sanatan Dharma is open to debates and discussions. It is not exactly a religion, but a science as can be seen through the following seven concepts/Injunctions:

1. It follows Scientific Methodology - of Verification, repetition, falsifying and rebuttal.
2. It has a Quasi-cyclical time concept- of rebirth and liberation.
3. It believes in Chatushkoti principle - of considering false, then doubt, then faith and finally Truth.
4. Epistemological concept - of Anubhuti (direct experience).
5. Cosmological concept-of infinite in the infinitesimal Brahmand(Universe).
6. Eschatological concept-of no permanent Heaven or Hell, coming back to the bodily form until getting liberated from the cycle of birth and death.
7. Immanence of Divine- Divine is within, discovering and seeking it.

All philosophies and religions believe in One Supreme but express it in different ways as said in this shloka:

एकं सद् विप्रा बहुधा वदन्ति ।

- Rigved 1.164.46

ekam sat vipra bahudha vadanti

Hindi Translation: - एक ही सत्य को विद्वान् अलग अलग रूपों में व्यक्त करते हैं।

English Translation: - Scholars express the same truth in different forms.

The Isha Upanishad's Shanti Mantra, or peace mantra of Pranavakshar is:

*Om purnamadah purnamidam purnat purnam udachyate,
purnasya purnamadaya purnameva avashishyate.*

Om Shantih Shantih Shantih,

Om is complete. If you take a part out from that, it doesn't get impacted, it is complete and the part is also complete.

In simple words it states that of that infinite being, if an infinite part is taken out, both are still infinite and complete as that Supreme is so vast & infinite and is all pervasive.

Just like a seed and a tree. A seed encompasses a tree in itself. When a seed is taken from a tree, the tree is not impacted. The seed taken from that tree also is not impacted and it grows into a tree.

THE KNOWLEDGE REPOSITORIES OF SANATAN DHARMA:

The basic requirement to become a Vedic scholar is to study the Chaturdasha Vidyas which is 14 Vidyas which are the knowledge repositories. All the Vedic knowledge and wisdom is contained in the Chaturdasha Vidyasthanas or the Dharmasthanas.

caturdasatvam krtavan kutah svayam na vedmi vidyasu caturdhasvapi

- Naisadham, 1. 4

Meaning: All religious knowledge is encompassed by these fourteen branches of learning.

About Naisadham: Naisadham or Naiṣhadhīyacaritam by Sriharsha is one of the five Mahakavyas (great poems) of Sanskrit Literature – the पञ्च-महाकाव्य.

The five Mahakavyas are:

- Naiśadha-carita by Shriharsha in 1174 AD: on the life of King Nala and Queen Damayanti, 22 cantos
- Kumārasambhava by Kālidāsa in 5th century CE: the wedding of Shiva and Parvati, and the birth of Kumara, in 17 cantos
- Raghuvamśa by Kālidāsa: the Raghu dynasty, in 19 cantos (about 1564 verses)
- Kiratarjuniya by Bharavi in 6th century CE: Arjuna's encounter with a Kirata (Shiva) 18 cantos
- Śiśupāla-vadha by Māgha in 7th century CE: the slaying of Shishupala by Krishna, 22 cantos (about 1800 verses)

The well-known poetic work 'Naisadham' mentions that Nala was conversant with the fourteen branches of learning.

There are yet four more vidyas making these eighteen -Ashtadasha-vidya which are:

Ayurveda, Arthashastra, Dhanurveda and Gandharvaveda, are the Vidyasthanas (abodes of knowledge) and known as **Upaved**. The dharmasthanas and vidyasthanas are together commonly known as the **Shastras**.

angani vedascatvaro mimamsa-nyayavistharah puranam dharmasastram ca vidya hyetascaturdas

- Manusmriti

purana-nyaya-mimamsa dharmasastrangamisritah vedah sthanani vidyanam dharmasya ca caturdasa

- Yagnavalkyasmrti

The term "*caturdasha*" occurs in both verses meaning "fourteen". We learn from these two stanzas that we have fourteen authoritative works on dharma embracing all aspects of our religion which are:

1. Four Vedas
2. Six Vedangas
3. Purana, Dharmashastras
4. Nyaya & Mimamsa Darshan

Through inscriptions on temples, old manuscripts and Guru-shishya (teacher-disciple learning) Parampara, the knowledge of Vedic texts can be categorised as Shruti and Smriti.

SHRUTI - It means what is heard. Shrutis are Ved which were heard by the sages from the Ishwar(Brahman). They are unquestionable and supreme knowledge.

VED- Ved means Gyan (knowledge) and the person who knows and understands them is called Vedagya. He is the one who is steady and who had merged with absolute consciousness.

The Ved is the original knowledge from Ishwar (The Supreme). They are considered to be Apourushey (not from humans but divine). The Ved were divided into four by Rishi Vyas. They are in the form of hymns and are four- Rigved, Yajurved, Samved, Atharvaved.

Henceforth, Rishi Vyas was named Vedvyas. Each Veda is further divided into two categories, namely, the Samhitā which is a collection of mantras and the Brahmanas which are prose texts that explain the meaning of the Samhita verses.

The Brāhmaṇas later expanded, the newer texts that explored the hidden meanings behind Vedic rituals were called Aranyakas while the philosophical sections came to be called the Upanishads.

The Aranyakas are to be read in forest when undergoing Upasana (meditation) to try to find the Rahasya (secrets) hidden in Yajna (fire rituals) and the concept of Brahman (the almighty Supreme). They are the link between Brahmanas and Upanishads. Brihadaranya-Upanishad is the greatest of all.

So, Vedas became a combination of books named as Samhita, Brahmana, Aranyaka & Upanishad. These four types are called **Vedant**.

Ancient Hindu tradition has divided the R̥gveda in two different ways. The first is the Aṣṭaka Method and the second, the Maṇḍala Method. The former has been designed to facilitate easy memorisation, by apportioning almost equal number of mantras to each section. In the latter method, the subject is more important.

In the Ashtaka method, there are 8 Ashtaka, each divided again in 8 Adhyayas (chapters) which contain different categories called Varga, having different number of Mantras counting to 10,552.

In the Mandala method, there are 10 Mandalas, each with a different number of Anuvak which are 85, containing 1028 Suktas which combine to 10,552 mantras.

The four Veds:

1) **Rigved-** Rik means to praise nature and the cosmos. Rigveda shlokas (hymns) explores various themes, rituals & Yajnas related to cosmology, creation, and the roles of deities like Indra, Agni, Surya, Soma etc. Each shloka (mantra) is called a Rik, collection of Riks is called Sukta & systematic collection of Suktas is called Samhita.

Initially, Rigved had 2nd to 9th Mandala but later 1st and 10th Mandala were added. These Mandalas are Chapters, now known as Books, having 1028 Suktas (Hymns)/10552 mantras. The hymns have a particular measurement (metre) which can be Gayatri, Anushtubh, Trishtubh, Jagati.

Mandal (chapter).	Seer - Drishta (who saw)
1. Pratham.	Madhuchhand, Dirghatama
2. Dwitiya.	Ghrisamad
3. Titiya.	Vishwamitra
4. Chaturth.	Vamdev
5. Pancham.	Atri
6. Shashtham.	Bharadwaj
7. Saptam.	Vasishta
8. Ashtam.	Kanav, Angiras
9. Navam.	Kashyap, Som
10. Dasham.	Indrani, Trit, Shachi, Shraddha

Know the first Sukta of Rigved dedicated to Agni (energy) which is:

ॐ अग्निमीले पुरोहितं यज्ञस्य देवमृत्विजम्। होतारं रत्नधातमम् ॥१॥

Om 'Agni'meele purohitam. Yagyasya devamritwijam. Hotaram ratnadhaatmam.

“I pray to you, ‘Agni’, the prime ‘tattva’ of ‘Parmatma’ by performing this Vedic Yagya. You, Agni’, were there before there was anything. With you, Agni’, the creation started. You are the giver of everything. I pray to you ‘Agni’, in all days, in every season. You, Agni’, sustain all creation and will consume it when the end comes. It is because of you, Agni’, that we get all the beautiful things of life. You are the source of everything beautiful”.

Of the 1028 Suktas, the most popular are:

- Purush Sukta
- Hiranyagarbha Sukta
- Dhan-Anna-Dan Sukta
- Nasadiya Sukta

- Suktas offered to different deities like Agni, Indra, Marut, Varun, Usha, Bhumi, Surya, Som etc

2) **Yajurved-** Yajur means worship. This Ved explains the process of worshiping Nature and Cosmos. It has 1935 Suktas(hymns) and it is further divided into two - Krishna Yajurved and Shukla Yajurved.

3) **Samved-** Sam is song. It gives the rules of singing Rigved hymns. While reciting the hymns they are sung in a particular way (metre) because a single mistake can change the meaning of a Hymn. It has 1875 Suktas.

4) **Atharvaved-** Atharv means stability. It tells about the rituals of everyday life that need to be followed to keep the mind stable and steady during various phases of life like the initiation into learning, marriage, death rituals, etc. It has 5987 Suktas.

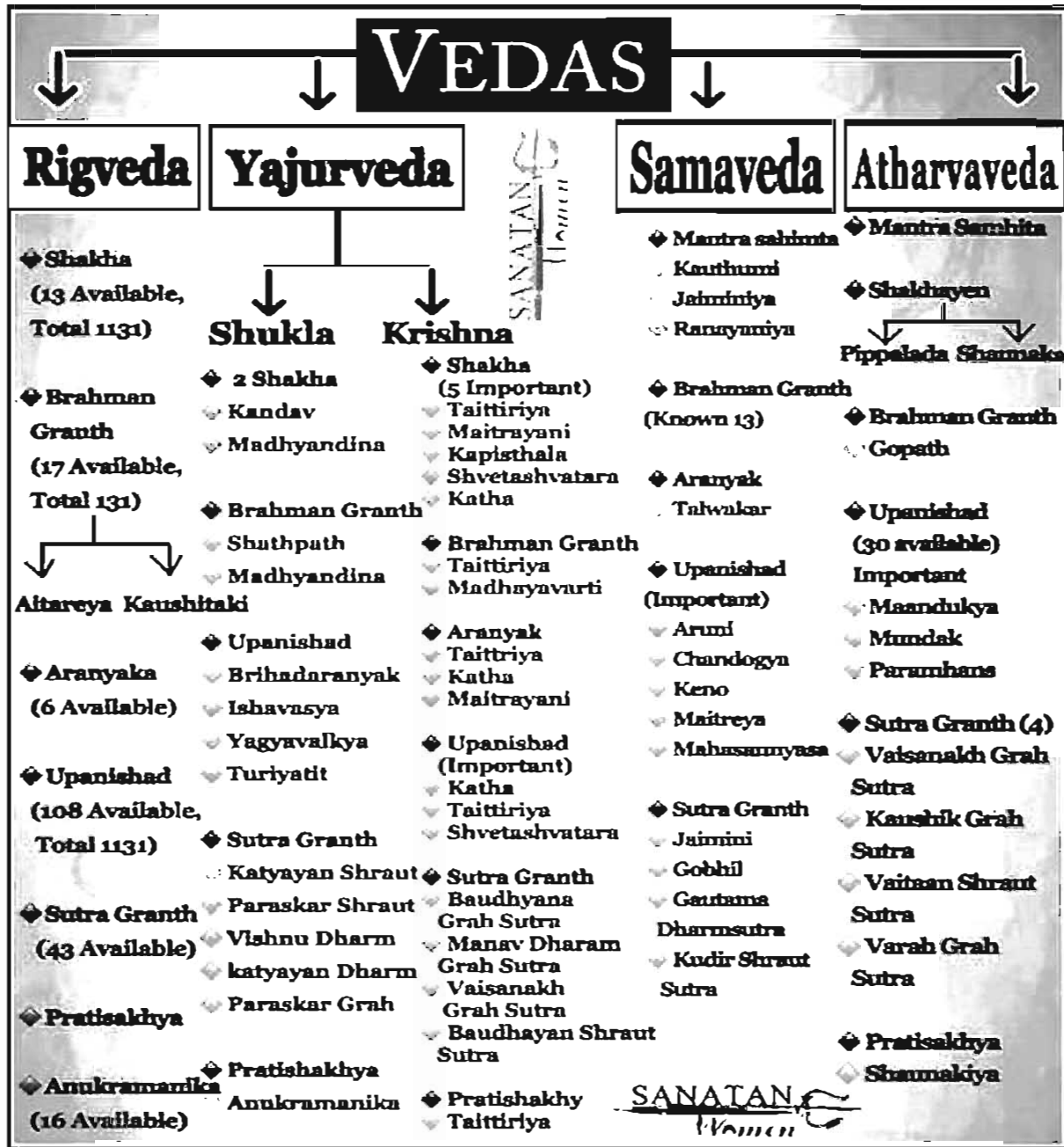
A traditional Vedic Yajna would be conducted by three main priests:

1. The Hota, the priest who would chanting the Vedic mantras in the way they were heard by the Drishtas from the gods
2. The Ardhvaryu, the priest would perform detailed rituals of the Yajna
3. The Udgatri, the priest who would sing Samans, or songs which are adaptations of one or more Suktas in Musical form

UPAVEDA They are the applied form of Ved and each Ved has an Upaved.

VED	UPAVED
• Rigved.	Ayurved- Study of medicine and life sciences
• Samved.	Gandharvaved- Study of Music, Art, Dance
• Yajurved.	Dhanurved- Study of Archery and Warfare
• Atharvaved.	Arthashastra- Study of politics and Business

The table classifies the details of the number of Brahmanas, Aranyakas, Samhitas and Upanishads.



UPANISHAD - The word 'Upanishad' has been derived from the root Sad (to sit), to which are added two prefixes: *Upa* and *Ni*. The prefix *Upa* denotes nearness and *Ni* totality. Thus, this word means 'sitting nearby devotedly.' Upanishads deal with meditation, philosophy, consciousness, and knowledge. Upanishads delve into profound questions about the nature of reality, the self (Atman), and the ultimate reality (Brahman), moving beyond the ritualistic aspects of earlier Vedic texts. Adi Shankaracharya explains in his commentary on the Kaṭha and Brihadaranyaka Upanishad that the word Ātmanvidyā is "knowledge of the self", and Brahmanvidyā is "knowledge of Brahman."

The old Upanishads had their place in the Brahmanas and Aranyakas. There is only one Samhita containing Upanishad - the Vajasaneyi Samhita which comprises the Ishavasya Upanishad forming the 40th Book.

There is mention of 108 Upanishads in the Muktikopanishad. However, among these, only 10 Upanishads, are considered the most important from the point of view of Vedantic Philosophy. Ten Principal Upanishads known as 'Dashopanishad' are:

Isha, Kena, Katha, Prashna, Munda, Mandukya, Taaittiriya, Aitareya, Chandogya and Brihadaranyaka. Besides, Shvetashvatara, Kaushitaki and Maitrayani Upanishads are listed in old Upanishads. According to the Muktikopanishad, 108 Upanishads are divided according to four Vedas as follows:

1. 10 Upanishads of the Rigveda
2. 19 Upanishads of the Shukla-Yajurveda
3. 32 Upanishads of the Krishna-Yajurveda
4. 16 Upanishads of the Samaveda and
5. 31 Upanishads of the Atharvaveda.

Out of these 108 Upanishads, the main 13 Upanishads are as below:

(A) Upanishads of the Rigveda :

- (1) Aitareya Upanishad,
- (2) Kaushitaki Upanishad

(B) Upanishads of the Shukla-Yajurveda:

- (3) Brihadaranyaka Upanishad,
- (4) Isha Upanishad

(C) Upanishads of the Krishna-Yajurveda:

- (5) Taaittiriya Upanishad,
- (6) Katha Upanishad,
- (7) Shvetashvatara Upanishad,
- (8) Maitrayani Upanishad

(D) Upanishads of the Samaveda:

- (9) Chandogya Upanishad,
- (10) Kena Upanishad

(E) Upanishads of the Atharvaveda:

- (11) Mundaka Upanishad,
- (12) Mandukya Upanishad,
- (13) Prashna Upanishad.

SMRITI - Smriti means what is remembered. They are the literature derived from Shrutis. They are the texts authored by sages who mastered Shruti and wrote about their own experiences and revelation. Smritis are documented by 18 sages, namely:

Atri, Viṣṇu, Hārīta, Auśanasī, Āngirasa, Yama, Āpastamba, Samvartta, Kātyāyana, Bṛhaspati, Parāśara, Vyāsa, Śaṅkha, Likhita, Dakṣa, Gautama, Śātātapa and Vāśiṣṭha.

Yājñavalkya gives the list of total 20 by adding two more Smritis, namely, Yājñavalkyasmṛiti and Manusmṛiti

The Yajnavalkya Smṛiti includes four Vedas, six Vedangas, Purana, Nyaya, Mimamsa and other Shastras, in addition to the Dharma, as sources of knowledge and through which sacred law can be known.

The Manusmṛiti is the most authoritative work on Neeti (laws) and presents the normal form of Hindu society and civilisation. It contains social obligations and duties of various varnas of individuals in different stages of life. Manusmṛiti referred to the sacred character of the laws in the four varnas and four orders to the ancient customs and duties of the king. King Manu (the first Human being) made it clear that it was trayi (Three Vedas) that kept the mind steady and firm. It is also known as Manava-dharma-shastra. The text is presented as a discourse between Manu and Bhṛigu on topics such as dharma, duties, rights, laws, and conduct. It is considered to be the world's first book on law.

The Smṛti corpus includes:

a) **THE VEDĀNGAS** - Shiksha, Kalpa, Vyakaran, Chhand, Nirukta & Jyotish. Vedangas mean the limbs of the Vedas. Just like the limbs of the body, they perform various supportive and augmenting functions in the study, preservation and protection of the Vedas and the vedic traditions. They help in understanding Vedas. The 164th sukta of the Rig Veda is by Seer Dirghatama, and the whole sukta can be taken as an ancient reference to explain the evolution of the Vedangas.

Vedanga are denoted by this Sanskrit verse:

शिक्षा कल्पो व्याकरणं, निरुक्तं छन्दसां चयः ।

ज्योतिषामयनं चैव, वेदाङ्गानि षडेव तु ॥

*Siksha Kalpo Vyakaranam Niruktam Chandasam Chayah
Jyotishamayanam Chaiva Vedangani Shaddevatu.*

The verse tells that these are the support system of Ved and are six:

1. Shiksha- Study of Phonetics: focuses on the correct pronunciation of Vedic mantras, exploring the sounds, their origin, and their classification.
2. Vyakaran- Study of Grammar: prominent scholars including Pāṇini (author of the Aṣṭādhyāyī, a seminal grammar text) and Yāska.
3. Chhand- Study of rhythm, Linguistics: Pingala is credited with composing the Chhandasutras.
4. Nirukta- Study of Etymology: the most celebrated scholar being Yāska, who wrote the Nighaṇṭu (a glossary).
5. Jyotish- Study of Astronomy: attributed to Lagadha, a text foundational to Jyotisha (astronomy and astrology).
6. Kalpa- Study of rituals to do Yajna: major contributors of Kalpas are-

- Asvalayana-sutra, Sankhayana-sutra, Saunaka-sutra (Rigveda)
- Manava-sutra, Bharadvaja-sutra, Vadhuna-sutra, Vaikhanasa-sutra, Laugakshi-sutra, Maitra-sutra, Katha-sutra, Varaha-sutra, Apastamba-sutra, Baudhayana-sutra (Yajurveda)
- Latyayana-sutra, Drahyayana-sutra, Nidana-sutra, Pushpa-sutra, Anustotra-sutra (Samaveda)
- Kusika-sutra (Atharvaveda)

[The Kalpa Vedanga studies, gave rise to the Dharma-sutras, which later expanded into Dharma-shastras]

Panini describes Vedanga as parts of human being:

छन्दः पादौ तु वेदस्य, हस्तो कल्पोऽथ पठ्यते ।

ज्योतिषामयनं चक्षुर्निरुक्तं श्रोत्रमुच्यते ॥

शिक्षा प्राणं तु वेदस्य, मुखं व्याकरणं स्मृतम् ॥

तस्मात् साङ्गमधीत्यैव, ब्रह्मलोके महीयते ॥— पाणिनीय शिक्षा 41,42

Chhanda has been called the foot of the Vedas, Kalpa the hand, Jyotish the eye, Nirukta the ear, Shiksha the life force(pran) and Vyakaran the mouth.

b) **THE ITIHAS** : They are two - Ramayana and Mahabharat.

Ramayan: Ramayana is an epic written in Sanskrit by the poet Valmiki, which consists of 24,000 couplets in 7 Khandas (chapters). This epic aims to realize and show the direction to human life on earth to follow a righteous path. Being truthful never fails and the victory of good over bad is assured. Ramayana is the story of the life of Shri Ram, the seventh incarnation of the god Vishnu. It is the story of his miraculous conception and birth, he defeating demons in his youth and his subsequent exile, defeating the demon Ravana, restoring his wife's dignity and eventually becoming the righteous King of the throne of Ayodhya.

Key learning from the texts are:

- a) Fulfilling your promises: - King Dasaratha had promised his wife Kaikeyi that she will be given whatever she asks for. So, despite his unwillingness, he had to send his beloved son, Shri Ram to go and live in a forest for 14 years.
- b) Sacrifice: - Shri Ram sacrificed his position to be crowned as a king because his father had to keep his words. He left the kingdom with an open heart. Sita sacrificed everything and went to the forest along with Shri Ram to stand besides him in every walk of life.
- c) Brotherhood: - Lakshmana went to the forest leaving all his luxuries just to help his brother Shri Ram. This shows the great relationship and trust that should be between brothers.
- d) Respecting women: - King Ravana despite his good deeds has the weakness of Pride. He, though well learned, abducted Ram's wife – Sita and later succumbed in the battle against Ram as his deeds were not righteous.

The epic narrative of the Ramayana, cherished in Bharat, has transcended its geographical boundaries.

RAMAYANA'S PATH ACROSS ASIA-

The Ramayana traversed to various Asian countries during the early centuries of the Common Era through three distinct routes:

1. Northern: From the regions of Punjab and Kashmir, the epic story ventured into China, Tibet, and East Turkestan overland.
2. Southern: Originating from Gujarat and Southern Bharat, it sailed across seas to reach Java, Sumatra, and Malaya, making it a significant part of these cultures.
3. Eastern: Through the eastern overland route, the Ramayana entered Burma, Thailand, and Laos, reaching Vietnam and Cambodia via Java.

This expansion was primarily attributed to Bharatiya traders who embarked on their journeys for commerce, trading spices, gold, and aromatic wood. Many of these travelers eventually settled in these regions, contributing to the spread of Bharatiya religion, culture, and philosophy.

CULTURAL INFLUENCE ON SOUTHEAST ASIA

The Bharatiya diaspora brought with them a profound influence on the native cultures of Southeast Asia. Brahmin priests, Buddhist monks, scholars, and adventurers played a crucial role in transmitting Bharatiya traditions.

Over time, the Ramayana became an integral part of these countries' cultural fabric.

1. Thailand: The Ayutthaya kingdom drew inspiration from the Ramayana, with Ayutthaya itself resembling the mythical city of Ayodhya. The Ramayana remains Thailand's national epic, profoundly influencing its culture and royalty.
2. Cambodia: The Angkor Wat temple complex, originally dedicated to Vishnu, features captivating murals narrating episodes from the Ramayana.

CONTEMPORARY INFLUENCE IN SOUTHEAST ASIA

Even today, the Ramayana continues to hold a significant place in the cultures of Southeast Asian countries:

1. Thailand: The Ramakien, a Thai version of the Ramayana, is Thailand's national epic, with rulers of the Chakri dynasty adopting names from the Ramayana.
2. Laos: The story of Phra Ram is considered the national epic, with unique interpretations reflecting Lao culture.

Variations in these narratives often mirror local cultures and traditions, emphasizing the enduring appeal of the Ramayana across Southeast Asia.

RAMAYANA BEYOND ASIA

The 19th century witnessed another phase in the global dissemination of the Ramayana, propelled by the movement of indentured laborers, known as Girmitiyas, from Bharat to regions such as Fiji, Mauritius, Trinidad and Tobago, Guyana, and Suriname. These labourers carried with them the cultural heritage of Bharat, prominently featuring Tulsidas's Ramcharitmanas, the religious text of Northern

Bharat. Girmitiyas – the laborers, primarily from Uttar Pradesh and Bihar, were sent abroad to work on plantations after the abolition of slavery. Despite their modest means, the girmitiyas preserved their culture and religion. The Ramcharitmanas became a symbol of their homeland in an unfamiliar land. The Ramayana offered solace, fostering a sense of belonging and connection to their roots.

Mahabharat: It is said that "What is found here, may be found elsewhere. What is not found here, will not be found elsewhere."

Mahabharat is the largest literary work ever composed by Krishna Dvaipayana Vyasa. It has 18 Parvas (voluminous treatises) containing about one lakh verses, each of four lines.

The story of Mahabharata is about the battle between two groups of cousins- the Pandavas and the Kauravas, to gain supreme power and become the ruler of the kingdom. It is also about taking the right actions at the right time after considering all aspects of one's life.

Mahabharat is the epic starting with the promises made by King Shantanu to his wife Ganga, eventually leading up to (over generations) the birth of the blind elder brother Dhritrashtra and his younger brother the crowned King Pandu. The main story is about the fight between their children. The 100 children of Dhritrashtra, called Kauravas took the path of injustice and immorality to 'take' what they believe is their birth right, the throne of Hastinapur from the Pandavas, the sons of King Pandu (the younger brother of Dhritrashtra), who have proved themselves to be worthy heirs. During this war, Shri Krishna gave the sermon of Shrimad Bhagavad Gita to Arjun.

Key learning from the text:

- Self-control:- Pandavas lost their kingdom in gambling. This shows that one should be able to resist the temptation towards things that are addictive and immoral.
- Protecting dignity of women: - Draupadi was disgraced & humiliated, for which Bhagvan Shri Krishna came and rescued her. This shows the responsibility of a person to protect the dignity of women.
- Moral duty towards work: - Bhagvan Shri Krishna in Mahabharata says "*Karmanyevadhikaraste Ma Phaleshu kadachana*", meaning, to do your duty with sincerity, your best capability and to your full capacity without expecting anything in return. This is called DHARMA.
- Right companions- Most powerful can be annihilated if in the wrong company and right companion can lead one to victory against all odds. The Pandava's army was much smaller than Kauravas but they won because Shri Krishna was with them.

c) **DHARMAŚASTRA** - are Sanskrit Puranic Smriti texts on law & conduct and refers to treatises (Shastra) on Dharma. Dharmasūtra are elaborate law commentaries based on Vedas. Dharmashastra evolved from Dharmasutra. Their number varies from 18 to 101, each rooted in Dharmasutra texts that emerged from Kalpa (Vedanga) studies.

The Dharmasutras were numerous, but only four texts have survived into the modern era. The most important of these texts are the sutras of Apastambha, Gautama, Baudhayana, and Vasishtha. The

Dharmaśāstra texts present their ideas under various categories: Achara (code of conduct), Vyavahara (day-today behaviour) & Prayashchitta (repent after realizing the sins).

Dharmashastra texts include discussion of - Ashram (stages of life), Varna (social classes), Purushartha (proper goals of life), personal virtues and duties such as ahimsa (non-violence) against all living beings, rules of Righteous war, and other topics.

ASHRAM- Each stage of life is not only a natural part of the journey from birth to death, but the period in which spirituality can be developed. These stages are called "Ashramas" and every person is supposed to go through each of these stages:

The First Ashrama: "Brahmacharya" or the Student Stage

The Second Ashrama: "Grihastha" or the Householder Stage

The Third Ashrama: "Vanaprastha" or the Hermit Stage

The Fourth Ashrama: "Sannyasa" or the Ascetic Stage

VARNA -Varna system categorized all the people among four categories, according to the work a person does and the duties they should perform. The four categories were –

Brahmin (priests and scholars), Kshatriya (warriors and rulers), Vaishya (merchants and farmers) and Shudra (Laborers and service providers).

PURUSHARTHA- There are four aims of human life which are called Purusharthas. They are Dharma, Artha, Kama and Moksha. Dharma stands for the duties and responsibilities of man. Artha means the monetary requirements, Kama stands for the human desires of all types and Moksha is freedom from birth, re-birth and worldly involvement.

d) **PURANAS** – They are 18 historical documents on Brahma, Vishnu & Mahesh (the triad of Hindu gods) - Puranas mention the principles and lessons of the Vedas in the form of stories with conversations between people. The word Purana means “Puran-Navam-Bhavti” in Sanskrit. It means “through which old become new”. So, Puranas are ancient texts, but they have always been meaningful in every Yug and every timeline as they connect with common people and their human needs. They were written by Sri Ved Vyas in Sanskrit language.

They are 18 documents comprising 6 of Brahma, 6 of Vishnu & 6 of Mahesh (the triad of Hindu) According to Srimad Bhagvatam (12.7.8-10), Purana has the following ten lakshanas (qualities)

पुराणलक्षणं ब्रह्मन् ब्रह्मर्षिभिर्निरूपितम्।
शृणुष्व बुद्धिमाश्रित्य वेदशास्त्रानुसारतः ॥ ८ ॥

purāṇa-lakṣaṇaṁ brahman brahmarṣibhir nirūpitam

śṛṇuṣva buddhim āśritya veda-śāstrānusārataḥ

Meaning: O Śaunaka, please hear with attention the characteristics of a Purāṇa, which have been defined by the most eminent learned brāhmaṇas in accordance with Vedic literature.

सर्गोऽस्याथविसर्गश्चवृत्तिरक्षान्तराणि।
वंशोवंशानुचरितसंस्थाहेतुरपाश्रयः॥९॥
दशभिर्लक्षणैर्युक्तंपुराणंतद्विदोविदुः।

केचित् पञ्चविधं ब्रह्मन् महदल्पव्यवस्थया ॥ १० ॥

*sargo 'syātha visargaś ca vṛtti-rakṣāntarāṇi ca
vaṁśo vaṁśānucaritaṁ saṁsthā hetur apāśrayaḥ
daśabhir lakṣaṇair yuktaṁ purāṇaṁ tad-vido viduḥ
kecit pañca-vidhaṁ brahman mahad-alpa-vyavasthayā ll*

Meaning: O brāhmaṇa, authorities on the matter understand a Purāṇa to contain ten characteristic topics: the creation of this universe, the subsequent creation of worlds and beings, the maintenance of all living beings, their sustenance, the rule of various Manus, the dynasties of great kings, the activities of such kings, annihilation, motivation and the supreme shelter. Other scholars state that the great Purāṇas deal with these ten topics, while lesser Purāṇas may deal with five.

1. Sargah- the creation of Universe
2. Visargah- the creation of worlds
3. Vrutti- the maintenance
4. Raksha- the protection
5. Antarani- the reigns of Manu
6. Vansh- the Lineage and dynasties of Kings
7. Vanshanucharit- the narration of dynasties
8. Sanstha- the annihilation of these dynasties
9. Hetu- the Prime causes, the reason of living entities
10. Apasarayah- the sharan (shelter) of Supreme Being

There are 18 Puranas as given in the following shlok:

ब्राह्मपाद्मवैष्णवंचशैवलैङ्गसगारुडं।
नारदीयंभागवतमाग्नेयंस्कान्दसंज्ञितम्॥२३॥
भविष्यं ब्रह्मवैवर्तमार्कण्डेयंसवामनम्।
वाराहं मात्स्यं कौर्म च ब्रह्माण्डाख्यमिति त्रिषट् ॥ २४ ॥

*brāhmaṇaṁ pādmaṁ vaiṣṇavaṁ ca śaivaṁ laiṅgaṁ sa-gāruḍaṁ nārādīyaṁ bhāgavatamāgneyaṁ
skānda-saṁjñitaṁ bhaviṣyaṁ brahma-vaivartaṁ mārkaṇḍeyaṁ sa-vāmanaṁ vārāhaṁ mātस्याṁ
kaurmaṁ ca brahmāṇḍākhyam iti tri-ṣaṭ*

Meaning: The eighteen major Purāṇas are the Brahma, Padma, Viṣṇu, Śiva, Liṅga, Garuḍa, Nārada, Bhāgavata, Agni, Skanda, Bhaviṣya, Brahma-vaivarta, Mārkaṇḍeya, Vāmana, Varāha, Matsya, Kūrma and Brahmāṇḍa Purāṇas.

1. BRAHMA PURANA

The Brahma Purana or the Adi Purana consists of 138 chapters and each one relays a vivid description of mythology, cosmology, and Dharma-the Universal Law which binds every living creature and celestial body. This Purana falls under Sattva and has a lot of information about Manvantara, Surya vamsham (lineage), Jambudweep & seven continents, Yog, Sankhya Yog, Shiv-Parvati marriage, Srikrishna, Shraddha & Pitru karma(rituals for ancestors), Kaliyug

2. VAYU PURANA

Hindu mythology has several gods and goddesses. The Vayu Purana makes one familiar with a few of them. It mentions stories about Surya, and ancient kings that once ruled the earth. It tells about great Rishis, Asuras and kings.

3. VISHNU PURANA

There are several mythological stories surrounding Vishnu which are found in this Vishnu Purana. The narrator in this Purana is Sage Parashara who imparts valuable knowledge and teaching through his conversations with his student, Rishi Maitreya. It gives all knowledge related to Vaishnavism and is of sattva Guna. It mentions measurement of time, lineages of kings, Ved, 28 Vyas Maharshi, rituals a grihasta(homemaker) should follow, stories of Prahlad, Dhruv, 12 Adityas, Shri Krishna and Badrinath & other places.

This is 28th Mahayug and in every Mahayug, Ved Vyas is born. So 28 Vyas Maharshis are described.

4. SHIV PURANA

It has all the information relating to Shaivism. It is of Tamas Guna and has stories of Shiv: Shiv as Agni stambh, Shiv Linga rituals, Jambudweep & Bharatvarsh, Shiv-Sati marriage, Daksh Yajnam, Shiv-Parvati marriage, Karthikeyan, Ganesh, Kal Bhairav, 12 Jyotirling, Nandi, Human anatomy and embryology

5. BHAGVATA PURANA

It is also called Srimad Bhagvat katha. It states the end of Mahabharat and start of Kaliyug. All the teachings and virtues of the 18 Puranas are in the Bhagvata Purana. It has 12 chapters and 18,000 shlokas. It establishes the superiority of the divine power with the help of stories of Vishnu and Mahabharata. It denotes sattva Guna. It mentions King Parikshit, Vidur & Uddhav, geography of the world, complete stories of Varah avatar, Kardam Prajapati, Narasimha avatar, Samudra Manthan, Ramayan, Parshuram and Shri Krishna.

6. NARADA PURANA

Narada Muni was a devout follower of Vishnu. Thus, the Narada Purana is filled with Vishnu Bhakti and various teachings of Vishnu. This Purana is believed to be the first one written and, therefore, is the oldest. It only has two chapters with 25,000 shlokas. It falls under sattva Guna. It mentions Varna-Ashram Dharma, Rishi Markandeya, River Ganga, Vaman avatar, Yamraj-the Dharma Raj, Shradha Karma ritual.

7. MARKANDEYA PURANA

This Purana features several stories which convey valuable life lessons. For example, the first one features four birds that teaches about how to distinguish between right and wrong. It belongs to the Rajas Guna and has 137 chapters with 9000 shlokas. It has elaborate details of Varna-Ashram dharma, Marriage rituals, Food to be consumed by different people, Adi Shakti, Dattatreya, Agni, Vishnu, Brahma, Yog, Yogi.

8. AGNI PURANA

Agni is another form of Vishnu and the Agni Purana consists of praises for Agni. It spans over 383 chapters in 15,000 shlokas and mentions details about Lakshana Shastra which is figures of speech in Sanskrit . There is information about literature, poetry, Navaras (nine emotions) and medicine, and some relevance to Mahabharata and Ramayana. It mentions the legends of Matsya Avatar, Varah Avatar, Kurma avatar, Shri Ram, Shri Krishna, Mahabharat, sacred rituals related to prayers of Vishnu, temple architecture, Ayurved, Astronomy, Public administration, Martial arts & weapons, various king's dynasties, Chhand Shastra, Natya Shastra and Varna-Ashram dharma.

9. BHAVISHYA PURANA

As the name suggests, the Bhavishya Purana features stories and events from the future. There are also the teachings and virtues of Surya mentioned in the words of Brahma. There are 129 chapters in this Purana with 28,000 shlokas. It tells about sacred rituals of the dead & departed atma, Aditya worship, emergence of Mlecchha & Pashana cult and future kings.

10. BRAHMA VAIVARTA PURANA

Shri Krishna is an avatar of Vishnu and, thus, this Purana is a part of Sattva. The Brahma Vaivarta Purana weaves tales about Shri Krishna and Radha. It takes us through their life while singing their praises. Also, it mentions the significance of cows. As one reads through 218 chapters and 18,000 shlokas, there is the mention of Brahma, Goddess Saraswati, Goddess Laxmi and Goddess Tulsi. It also describes Manu & various Prajapatis, Atma, Yamraj and submerging of Dwarka.

11. LINGA PURANA

The Linga Purana falls under the Tamas Guna and conveys the teachings of Shiva. There are several conversations and stories about the heavenly cow, Nandi, and a devout disciple of Shiva, Dhruva. This spans 163 chapters in 11,000 shlokas. Entire Shiv Tatva, Aghori, Nandi, 8 forms of Shiv, Shiv Lingas, Genesis of Creation, Ancient world, Jambudweep, Dan dharma, Solar system and the science of Music (Sangeet Shastra).

12. VARAHA PURANA

The Varaha Purana is divided into 217 chapters and 10,000 shlokas. It tells us different stories of the Varaha avatar of Vishnu. Thus, this Purana also falls under Sattva and conveys the virtues of Vishnu. It tells about Ashwini Kumar, Goddess Durga, Geography of 4 island continents- Jambudweep,

Kraunchdweep, Shakdweep, Kushdweep, Meru mountain, Matsya avatar, Agastya Gita, Rudra Gita, Tirtha (pilgrimages), sacred rituals.

13. SKANDA PURANA

The Skanda Purana is divided into 7 chapters: Maheshwara, Vishnu, Brahma, Kashi, Avanti, Nagara, and Prabhasa, and 81,000 shlokas. It is the largest of all Purana. On reading the shlokas, you will find clear mention of the Himalayan regions. This Purana is mostly concerned with the history and geography of Bharat. It has the history of Kedarnath, Tirupati, Puri, Ujjain, Badrinath, Ayodhya, Prabhas, Dwarka, Varanasi, Arunachalam, all the other sacred places and all the festivals.

14. VAMANA PURANA

Vishnu was once reincarnated as a Vaman (dwarf incarnation of lord Vishnu, 5th of the 10 incarnations). The Vamana Purana talks about his experiences as a vama while also providing a detailed account of human development. It stretches across 95 chapters through 10,000 shlokas and also conveys the teachings of the Vedas and Upanishads in a simplified form. It belongs to Sattva Guna. It tells about destruction of Daksh Yagya, establishment of 18 Shakti Pitha, shifting of Rishi Agastya to the south of Vindhya, Tamil culture, Shiv Parvati marriage, Kartikeya, Chakravarti king Bali, Nar-Narayan, Jambudweep, Bharatvarsh and River Sarasvati.

15. GARUDA PURANA

The Garuda Purana extends for 279 chapters in 18,000 shlokas. Throughout this Purana, there are conversations between Vishnu and his vahana, Garuda. These conversations are mostly found to be around good and evil, Truth, and Death. It explains in minute detail about Antidotes for different poisons, Vastu & temple architecture, Gemology, rituals of Prayashchit (atonement), diagnosis of different ailments, Legend of Hayagriva, rituals related to Adi Shakti, Shiv, Vishnu, Medicines, Yog, Aatma (soul) & punishments for bad Karma after death, Ramayan and Mahabharat.

Famous shloka:

सर्वेषां मङ्गलं भूयात् सर्वे सन्तु निरामयाः।
सर्वे भद्राणि पश्यन्तु मा कश्चिदुःखभाग् भवेत्॥

sarveṣāṃ maṅgalaṃ bhūyāt sarve santu nirāmayāḥ|
sarve bhadraṇi paśyantu mā kaścidduḥkhabhāg bhavet||

– Garuda Purana 35.51

Meaning:

May all be well, may all be free from illness May all see what is auspicious, may no-one suffer !

16. KURMA PURANA

In the Kurma Purana, Vishnu is the narrator himself. It records his experiences during the Samudra Manthan when he assumed the avatar of a tortoise. The conflict between the Devas and the Asuras

during this period has several lessons that can benefit mankind. These lessons are also mentioned in this Puran which is 4 chapters long and contains 18000 shlokas. Part of sattva Guna. It tells about Ishwariya Gita, Time division, Varah avatar, Goddess Parvati Sahasranam, Shiv Ganas, conversation of Shiv & Krishna, Shiv lingas, geography & astronomy, events of Manvantras, 28 Vyas Maharishi and Nandi.

17. MATSYA PURANA

Instead of having a specific subject matter, the Matsya Purana contains an overview of all Puranas. It falls under Tamas and features 290 chapters relayed in 14,000 shlokas. It gives details about various dynasties of Surya, Chandra, Yadav, Kosala, Maurya, Sunga, sacred rituals of Vishnu, Shiv, Shakti, Public administration, architecture of temples & forts, geography of ancient world.

18. BRAHMANDA PURANA

The Brahmanda Purana reveals the secrets of the universe. It tells us the story of the origin of the Brahmanda and how the Navagrahas were created. The origin story of every other celestial body is also included in this Purana which belongs to the Rajas category. It tells about Kalpa, Manvantar, Yug, Universe creation, World geography, Saptarishis, Tirth, rituals of ancestors, Parshuram, Manu & progeny, River Ganga, Prajapati, Sangeet Shastra, Ikshavaku & Vrishni dynasty and Lalita Sahasranam.

There are UPA- PURANAS also, namely:

1) Sanatkumar Purana	6) Naradiya Purana	11) Varun Purana	16) Vishwakarma Puran
2) Narasimha Purana	7) Kapila Purana	12) Kalki Purana	17) Vishnudharottara Purana
3) Nand Purana	8) Manav Purana	13) Maheswara Purana	18) Bhargava Purana
4) Shivdharma Purana	9) Ausanasa Purana	14) Ganesh Purana	
5) Samb Purana	10) Mudgala Purana	15) Saur Purana	

Vedas and Puranas describe Rudra and Vishnu. Yajurveda's Taittiriya Aranyaka has the following mantra where the first line of mantra gives the names of beings related to Shiva and the second line to the beings related to Vishnu. Here "danti" is "Ganapati":

रुद्रो रुद्रश्च दन्तिश्च निन्दः षण्मुख एव च ।

गरुडो ब्रह्मा िवष्णुश्च नारिसहंस्तथैव च ॥

rudro rudrascha dantischa nandi sanmukha eva cha |

garudo brahma vishnuscha narsimhastathaiva cha ||

- Yajurveda Taittiriya Aranyaka 10.1.15

e) **THE AGAMAS**- are the texts describing architecture of Hindu temples

AGAMAS - It means 'that which has come'. They are the treatises which define the principles of divine worship. They consist of Tantra, Mantra and Yantra. The Agamas do not derive their authority

from the Vedas but are all Vedic in spirit and character. That is the reason they are regarded as authoritative. Every agama has four different attributes:

- Jnana (Knowledge)
- Yoga (Concentration)
- Kriya (Esoteric Ritual)
- Charya (Exoteric Worship)

The Agamas describe three requirements for a place of pilgrimage: Sthala, Tirtha, and Murti. Sthala is the place where the temple is to be constructed, Tirtha is the temple tank, and Murti refers to the idol of God. Agamas describe rules for the kind of images to be installed, the materials to be used, their dimensions, proportions, temple's air circulation, lighting in the temple complex, etc. Agamas like the Manasara and Shilpasara are some of the works dealing with these rules. The rituals followed in worshipping at the temple also follow the rules laid out in the Agamas.

The Agamas are divided into three sections: the Vaishnava, the Shaiva and the Shakta related to the three chief sects of Hinduism, viz., Vaishnavism, Shaivism and Shaktism

The Vaishnava Agamas glorify God as Vishnu. The Shaiva Agamas glorify God as Shiva and have given rise to an important school of philosophy known as Shaiva-Siddhanta, which prevails in Southern Bharat, particularly in the districts of Tirunelveli and Madurai. The Shakta Agamas or Tantras glorify God as the mother of the Universe, under one of the many names of Devi.

These are 215 Vishnu agamas, 28 Shiv agamas and 77 Shakti agama.

i) Vaishnava agamas

The Vaishnava Agamas are of four kinds: the Vaikhanasa, Pancharatra, Pratishthasara and Vijnyanalalita. The Pratishthasara and Vijnyanalalita are specific texts within the Vaikhanasa and Pancharatra traditions, respectively, focusing on temple rituals and the nature of the divine

The Brahma, Saiva, Kaumara, Vasishtha, Kapila, Gautamiya and the Naradiya are the seven groups of the Pancharatras. The Naradiya section of the Santi-Parva of the Mahabharata is the earliest source of information about the Pancharatras.

Vishnu is the Supreme in the Pancharatra Agamas. The Vaishnavas regard the Pancharatra Agamas to be the most authoritative. They believe that these Agamas were revealed by God Vishnu Himself. The Pancharatra Agamas are said to originate from a Shakha or recession of the Shukla Yajur Veda, and the Vaikhanas are said to originate from a Shakha of the Krishna Yajur Veda.

Narada-Pancharatra says: "Everything from Brahman to a blade of grass is Krishna." This corresponds to the Upanishadic declaration: "Brahman Sarvam Khalvidam" which means -All this is, verily, Brahma

Out of 215 Pancharatra texts, important Samhitas are Isvara, Ahirbudhnya, Paushkara, Parama, Sattvata, Brihad-Brahma and Jnanamritasara.

The Vaikhanasa Agamas were transmitted from Vaikhanasa Rishi to his disciples Brighu, Marichi, Atri and Kashyapa.

Most Vaishnavites follow the Pancharatra Agamas.

But some follow Vaikhanasa Agama's rules like Tirumala Venkateshwar temple.

ii) Shaiva agamas

Out of twenty-eight Agamas, the main is Kamika. The Agamas are also the basis of Kashmir Saivism which is called the Pratyabhijnya system. The latter works of Pratyabhijnya system show a distinct leaning to Advaitism. The Southern Saivism, i.e., Saiva Siddhanta, and the Kashmir Saivism, regard these Agamas as their authority, besides the Vedas. Each Agama has Upa- Agamas. Of these, only fragmentary texts of twenty are extant. Siva is the central God in the Saiva Agamas. They are suitable to this Yuga, Kali Yuga. They are open to all castes and both the sexes.

iii) Shakta agamas

There is another group of scriptures known as the Tantras. They belong to the Shakti cult. They glorify Shakti as the World-Mother. They dwell on the Shakti (energy) aspect of God and prescribe numerous courses of ritualistic worship of the Divine Mother in various forms. The texts are usually in the form of dialogues between Shiva and Parvati. Mahanirvana, Kularnava, Kulasara, Prapanchasara, Tantraraja, Rudra-Yamala, Brahma-Yamala, Vishnu-Yamala and Todala Tantra are the important works. The Shakti Agamas also teach several occult practices, some of which confer powers, while the others bestow knowledge and freedom. Shakti is the creative power of Shiv.

Among the existing books on the Agamas, the most famous are the Isvara-Samhita, Ahirbudhnya-Samhita, Sanatkumara-Samhita, Narada-Pancharatra, Spanda-Pradipika and the Mahanirvana- Tantra.

f) THE SIDDHANT- the established principles of different branches of science.

SIDDHANT: Siddhānta (सिद्धान्त) is a Sanskrit term denoting the established and accepted view of any particular school within Hindu schools of Philosophies and also principles of different branches of Science. The word Siddhanta is derived from “सिद्ध अन्तः यस्मात्” which means something that is decided upon. Shabda Klapa Druma defines it as “नूवर् नक्ष िसरस्य िसद्ध नक्ष स्थापनम्” which means the one which is obtained/established as a result of questioning/enquiring.

Eg.

1. Acharya Charaka's Rogbhishagjitiye Adhyaya of Vimaanasthana is the foundation of all of Ayurveda's Siddhants (principles), which are grouped into four categories: Sarvatantra, Pratitantra, Adhikarana, and Abhyupagama Siddhanta.
2. Siddhanta Shiromani, written by Bhaskaracharya II (known as one of the greatest mathematicians of medieval Bharat).
3. Shaiva-siddhanta posits three universal realities: the individual soul (pashu), the (pati—i.e., Shiva), and the soul's bondage (pasha) within the realm of existence.

4. In VimanShastra, Siddhanta is classified into 4 namely Sarvatantra Siddhanta, Pratitantra Siddhanta, Adhikarana Siddhanta, Abhyupagama Siddhanta.
5. In Astronomy and cosmology, there are 18 Siddhanta: as given in the following Shloka:

सूर्यः पितामहो व्यासो वसिष्ठोऽत्रिः पराशरः।
 कश्यपो नारदो गर्गो मारीचिर्मनुरङ्गिराः॥
 लोमशः पुलिशश्चैव च्यवनो यवनो भृगुः।
 शौनकोऽष्टादशश्चैते ज्योतिःशास्त्रप्रवर्तकाः॥

*Surya Pitamah Vyas Vasishtho Atri Parasara
 Kashyapo Narado Gargo Mareechi Manu Angeerasa|
 Lomash Paulisa Chyavana Yavana Bhrigu
 Saunakauda ashta-dasa-schaithe Jyotisha Shaastra Pravarthakah ||*

These are:

1 Surya	10 Vasishtha
2 Kashyap	11 Marichi
3 Lomash	12 Yavana
4 Pitamah	13 Atri
5 Narad	14 Manu
6 Poulish	15 Bhrigu
7 Vyas	16 Parashar
8 Garga	17 Angiras
9 Chyavan	18 Shaunak

g) THE DARSHANS- Darshan in Sanskrit means ‘sight’. It is considered to be a window to the truth. There are a total of six darshanas. They are Nyaya, Vaisheshik, Samkhya, Purva-mimamsa, Uttar Mimamsa, Yog. They all spread the values of living.

Nyaya Darshana was written by sage Gautam, Vaisheshika by sage Kanad, Purva Mimamsa by sage Jaimini, Sankhya by sage Kapila, Yog by sage Patanjali, and the Uttar Mimamsa/Vedant by sage Badarayana.

1. Samkhya (Kapila): Samkhya is the oldest of the orthodox philosophical systems, and it postulates that everything stems from purusha (self, soul) and prakriti (matter, creative agency, energy).
 Purush cannot be modified or changed while prakriti brings change in all objects.
2. Yoga (Patanjali): Yoga literally means the union of two principal entities. Yogic techniques control body, mind & sense organs, thus considered as a means of achieving freedom or mukti.
 This freedom could be attained by practising self-control (yama), observation of rules (niyama), fixed postures (asana), breath control (pranayama), choosing an object (pratyahara) and fixing the

mind (dharna), concentrating on the chosen object (dhyana) and complete dissolution of self, merging the mind and the object (Samadhi).

Yoga admits the existence of God as a teacher and guide.

3. Nyaya (Gautama Muni): Nyaya Philosophy states that nothing is acceptable unless it is in accordance with reason and experience (scientific approach). Nyaya is considered as a technique of logical thinking.

Nyaya Sutras say that there are four means of attaining valid knowledge: perception, inference, comparison, and verbal testimony.

4. Vaisheshika (Kanada): The basis of the school's philosophy is that all objects in the physical universe are reducible to a finite number of atoms and Brahman is regarded as the fundamental force that causes consciousness in these atoms.

Vaisheshika system is considered as the realistic and objective philosophy of universe. The reality according to this philosophy has many bases or categories which are substance, attribute, action, genus, distinct quality and inherence.

Vaisheshika thinkers believe that all objects of the universe are composed of five elements—earth, water, air, fire and ether.

They believe that God is the guiding principle. The living beings were rewarded or punished according to the law of karma, based on actions of merit and demerit.

The Vaisheshika and Nyaya schools eventually merged because of their closely related metaphysical theories (Vaisheshika only accepted perception and inference as sources of valid knowledge).

5. Purva Mimamsa (Jaimini): This philosophy encompasses the Nyaya-vaisheshika systems and emphasises the concept of valid knowledge. According to Purva Mimamsa, Vedas are eternal and possess all knowledge.

According to Mimamsa philosophy Vedas are eternal and possess all knowledge, and religion means the fulfilment of duties prescribed by the Vedas.

It says that the essence of the Vedas is dharma. By the execution of dharma one earns merit which leads one to heaven after death.

6. Uttar Mimamsa: The Vedanta, or Uttara Mimamsa school concentrates on the philosophical teachings of the Upanishads (mystic or spiritual contemplations within the Vedas), rather than the Brahmanas (instructions for ritual and Yajna). The school separated into six sub-schools, each interpreting the texts in its own way and producing its own series of sub-commentaries:

i) Advaita (Adi Shankara): It states that both the individual self (Atman) and Brahman are the same, and knowing this difference causes liberation.

ii) Vishishtadvaita (Ramanujacharya): It believes that all diversity is subsumed to a unified whole.

iii)Dvaita (Madhvacharya): It considers Brahman and Atman as two different entities, and Bhakti as the route to eternal salvation.

iv)Dvaitadvaita (Nimbarkacharya): It states that the Brahman is the highest reality, the controller of all.

v)Shuddhadvaita (Vallabhacharya): It states that both God and the individual self are the same, and not different.

vi)Achintya Bheda Abheda (Chaitanya Mahaprabhu): It emphasizes that the individual self (Jivatman) is both different and not different from Brahman.

Besides these, there are 3 more Darshans which do not believe in Vedic philosophy:

1. Charvaka (Brihaspati): Charvaka is a materialistic, sceptical and atheistic school of thought. According to Charvaka there is no other world. Hence, death is the end of humans & pleasure is the ultimate object in life.
It is also known as the Lokayata Philosophy-the philosophy of masses.
2. Buddhist philosophy (Siddhartha Gautama): Buddhism is a non-theistic philosophy whose tenets are not especially concerned with the existence or nonexistence of God. Buddha considered the world as full of misery and considered a man's duty to seek liberation from this painful world. He strongly criticized blind faith in the traditional scriptures like the Vedas
3. Jain philosophy (Mahavira): A basic principle is anekantavada, the idea that reality is perceived differently from different points of view, and that no single point of view is completely true. According to Jainism, only the Kevalins, those who have infinite knowledge, can know the true answer, and that all others would only know a part of the answer.

h) SOME OTHER TEXTS:

TANTRA, YANTRA AND MANTRA - Tantra shastra is a secret and most powerful science in the Indian occult tradition. Tantra-shastra can be divided into three parts – Mantra, Yantra, and Tantra. Mantra is the important one among the three, as it is mainly used in the other two. All the Tantric procedures are carried out with the help of Mantras.

Tantra is ultrapure, sattvic worship which was recognised even during Vedic ages. All four Vedas consists of Tantra-Vidya. Atharvaveda is mainly a book on TantraVidya. Also, many Puranas like Shiva-Purana, Devi-Purana, Markandeya-Purana, Agni-Purana, Brahma-Vaivarta Purana contain information regarding Tantra.

In the worship of God (Saakara Upasana), the idols are mainly worshipped.

In the worship using Tantra, the worship of the deity is in the form of Yantras, where the Yantra is a Geometrical form which can be of many types, for a single deity based on its purpose or application, along with the recitation of Mantras.

In Tantra, many dravyas are used after doing Abhimantrana (or energising) with the mantras. For instance, the mustard seeds energized through mantra, called Abhimantrana, is tied to the waist of a

pregnant lady to prevent miscarriage. When Havana is performed using specific materials and specific mantras, the remnants of oblation called 'Hutashesha' if given to an infertile woman will certainly bestow a son to her.

VEDANTA - also known as Uttara Mīmāṃsā, is one of the six Astik (believers in Supreme being) traditions of Hindu philosophy. The word Vedanta means 'conclusion of the Vedas', and encompasses the ideas that emerged from the Upanishads and aligned & reinterpreted by five acharyas.

To study the philosophy of Vedanta, one needs to study the Ten Classical Upanishads and the Brahma Sutras.

The six prominent schools of Vedanta:

1.Advaita Vedanta (Non-Dualism):

Propounded by Adi Shankaracharya, this school posits that Brahman is the ultimate reality and that the individual self (Atman) is ultimately non-different from Brahman.

2.Vishishtadvaita Vedanta (Distinct Non-Dualism):

Founded by Ramanujacharya, this school emphasizes the oneness of Brahman while acknowledging the distinct nature of the individual self and the world as parts of Brahman.

3.Dvaita Vedanta (Dualism):

Propounded by Madhvacharya, this school emphasizes the eternal and distinct nature of Brahman, individual souls (jīvātmans), and matter, asserting that they are always separate.

4.Dvaitadvaita Vedanta (Dualism-Non-dualism):

Developed by Nimbarkacharya, this school suggests that the individual self is both different and non-different from Brahman, a perspective that combines elements of both dualism and non-dualism.

5.Shuddhadvaita Vedanta (Pure Non-Dualism):

Founded by Vallabhacharya, this school emphasizes the ultimate oneness of Brahman, viewing the world as an illusion or Maya.

6.Achintya Bhedabheda (Inconceivable Difference And Non-Difference):

Propounded by Chaitanya Mahaprabhu, this school posits that Brahman and the individual self are both different and non-different in an incomprehensible way, a concept that is beyond human understanding.

PRASTHANATRAYI

Prasthanatrayi is a collective term describing the three principal texts in Vedic literature: the Upanishads, Brahma-Sutras, and Bhagavad-Gita. This collection holds authoritative significance in various philosophical traditions, including Vedanta.

The three texts of Prasthanatrayi:

- Upanishads: Known as Upadeśa Prasthāna and Śruti Prasthāna
- Bhagavad Gita: Known as Sādhana Prasthāna and Smṛti Prasthāna
- Brahma Sutras: Known as Sūtra Prasthāna, Nyāya Prasthāna, or Yukti Prasthāna

The Principal Upanishads -constitute the Sruti prasthāna or "starting point of heard scriptures," while the Bhagavad Gita constitutes the Smṛiti prasthāna or the "starting point of remembered texts base", and the Brahma Sūtras constitute the Nyāya prasthāna (न्याय प्रस्थान) or "starting point of reasoning texts base”.

The Upanishads became the subject of many commentaries and subcommentaries, and texts modeled after them, bearing the name “Upanishad” were composed through the centuries.

The first five of the Upanishad--*Brihadaranyaka*, *Chandogya*, *Taittiriya*, *Aitareya*, and *Kaushitaki*—were composed in prose interspersed with verse. The middle five--*Kena*, *Katha*, *Isa*, *Svetasvatara*, and *Mundaka*—were composed in verse. The last three--*Prasna*, *Mandukya*, and *Maitri*—were composed in prose.

The BrahmaSutra - a text of philosophical school of Vedānta and one of three texts which establish the Prasthantrayi is an authoritative book on Hindu Philosophy.

The first chapter (Samanvayadhyaya) unifies Brahman, the second (Avirodhadhyaya) refutes other philosophies, the third (Sadhanadhyaya) deals with practice (Sadhana) to attain Brahman and the fourth (Phaladhyaya) treats of fruits of Self-realisation. Each chapter contains four Padas. Each Pada contains Adhikaranas. Each Adhikarana has separate question to discuss. The first five Adhikaranas of the first chapter are very, very important.

The Brahma Sūtras consist of 555 verses (sutras) in four chapters, dealing with attaining knowledge of Brahman. Rejecting the smṛiti as a base of knowledge, it declares that the Vedic Upanishads are the only acceptable source of truth, describing the same metaphysical Reality, Brahman, which cannot be different for different people.

The Brahma Sūtras or Brahmasutra are attributed to Badarayana. In some texts, Badarayana is also called Vyasa, which means "one who arranges".

All Acharyas have commented on Brahma Sutras. This is a great authority for every philosophical school in Bharat. If any Acharya wishes to establish his own cult or sect or school of thought he will have to write a commentary of his own on Brahma Sutras. Then only it will be recognised.

The five great Acharyas: Sri Sankara the exponent of Kevala Advaita or uncompromising monism, Sri Ramanuja the exponent of Visishtadvaita or qualified monism, Sri Nimbarka the exponent of Bhedabheda-vada, Sri Madhva the exponent of strict Dvaitism or Dvaita-vada and Sri Vallabha the exponent of Suddhadvaita-vada or pure monism agree that Brahman is the cause of this world and that knowledge of Brahman leads to Moksha or the final emancipation, which is the goal of life.

Shankara Bhashya is the oldest of all commentaries. It upholds Shuddha-Para-Brahman or the Supreme Self of the Upanishads as something superior to other divine beings. It propounds a very bold

philosophy and declares emphatically that the individual soul is identical to the Supreme Self. Sankara's philosophical view accurately represents the meaning of Badarayana. His explanations only faithfully render the intended meaning of Sri Badrayana Vyasa. This is beyond doubt and dispute.

Students of Kevaladvaita School of Philosophy should study the Sariraka Bhashya of Sri Sankara, which is profound, subtle and unique. It is an authority which leads to the right understanding of the Brahma Sutras. The best thinkers of Bharat, Germany, America and England belong to this school. It occupies a high rank in books on philosophy. Advaita philosophy is the most sublime and the grandest philosophy of the Hindus.

SHRIMAD BHAGVAD GITA -

The most sacred text of the Hindus, the Gita comprises the words which came from the mouth of the Supreme, Shri Krishna. The text is the narration of dialogues between the Pandava prince, Arjuna and his charioteer guide Shri Krishna, at the onset of the Kurukshetra War. It is a part of the epic Mahabharata. Two massive armies of Kauravas & Pandavas have gathered to destroy each other. The Pandava prince, Arjuna asks his charioteer, Shri Krishna to drive to the center of the battlefield so that he can get a good look at both the armies. There, among his enemies, he saw his relatives, beloved friends, and revered teachers, with whom he had to fight and is thus filled with doubt and despair. With his hands trembling, he drops his bow and turns to his charioteer and guide, Krishna, for advice, whether he should renounce his duty and leave the battlefield.

The Bhagavad Gita is the compilation of Arjuna's questions and moral dilemma and Krishna's answers and insights, touching on many human ethical dilemmas, philosophical issues and life's choices, also describing living according to one's duty or dharma.

In the Gita, four pathways to self-realization are described: meditating on the Supreme (raja yoga), self-realization (jnana yoga), righteous action (karma yoga), and complete devotion (bhakti yoga). The Bhagavad Gita is a poem written in the Sanskrit language with 18 chapters in total. The 700 verses are structured into several ancient Bharatiya poetic meters, with the principal being the Anushtubh chhanda. Each shloka consists of a couplet; thus the entire text consists of 1,400 lines. The text is attributed to the ancient sage Vyasa, who composed the Mahabharata.

The primary purpose of the Bhagavad- Gita is to illuminate humanity by the realization of the true nature of divinity; for the highest spirituality and the greatest material perfection is to attain love of God.

The oldest surviving manuscript of the Bhagavad Gita, dated to 1492, is currently kept in the Bodleian Library, Oxford. This manuscript is written on 83 palm leaves, both recto and verso, and includes a table of contents and a poem titled "Gītāmāhātmya".

Located close to Kurukshetra, **JYOTISAR** is known to be a place where Shri Krishna gave Bhagwad Gita discourse to Arjuna. It is a part of the area considered sacred.

Ganapati wrote Mahabharata on Vyasa's dictation. Mahabharata is tremendously vast volume, and no human would be capable of writing that. Hence Ganesha was required for the scribe. After the

migration of the Pandavas, when Vyas was in meditation, Brahma appeared and asked Vyasji to compile Mahabharat through Ganesha, the most intelligent of all. But Ganesha stipulated a condition that he would write down the poem, provided Vyasa dictated it without pausing even once before the epic was completed. To this Vyasa stipulated the counter condition that when he dictated without the pause, Ganapati should not write down the shloka without understanding the meaning of it.

Ganesha was the god of wisdom and hence to take regular breaks, Vyas had to invent cryptic shlokas to keep Ganapati occupied while he did sandhyopasana, food, sleep and other activities. As tremendous speed was required to write, Ganesha broke one of his tusks to write, hence, being called Ekdantaya. River Saraswati was flowing near the Ganesha Gufa (cave) and Ganesha asked the river to slow down but it didn't. Ganesh could not hear Vyas so, cursed River Saraswati to flow underground from then on.

Ganesh Gufa (cave) is located near Mana village in Uttarakhand. Vyas gufa where he used to meditate also is nearby. Also are located-

Bhim Pul: A small bridge built by Bhima, one of the Pandavas to help Draupadi cross the mighty and sacred Saraswati River, on their Swargarohan journey.

Muchukunda Gufa: King Muchukunda who had a boon that if he is waken up from sleep, the person who tried to do so, would be burnt to ashes just by his glance. He burnt the demon king Kalayavana to ashes just with his glance at this cave. Kalayavana had reached here trying to kill Shri Krishna.

In Mahabharata's first chapter, it's written that - Vyasa originally composed "Bharata" of 24000 verses. Out of these 24000 verses, 8000 were mystic verses, having hidden meanings which made Ganesha think for a while. And then after compiling 24000 verses, Vyasa added "Akhyana-s" and "Upakhyana-s" related to Puranas etc., and increased the volume to "sixty hundred thousand" verses out of which:

- 30 hundred thousand were distributed in Devaloka
- 15 hundred thousand at pitru loka
- 14 hundred thousand for gandherva loka
- 1 hundred thousand for humans

This One lakh shloka version for Humans was narrated by Vaishampayana at Janamejaya sarapasatra Yajna.

CREATION OF UNIVERSE CONCEPT & THE HUMAN GENEALOGY

Most Hindus are followers of the three Gods – Brahma, Vishnu & Mahesh. It is not known when the TRIMURTI of Gods were formed but according to Vishnu Puran, The One- ISHWAR/BRAHMAN (the supreme) divides itself into three forms—Brahma, Vishnu, and Shiva (Mahesh) taking on the three aspects of creating, preserving and destroying the universe in various kalpas.

Brahman, the supreme consciousness, expanded itself into many deities during the creation of this materialistic world and it has its own intelligence - for creation (Brahma & Saraswati), to keep equilibrium (Vishnu & Lakshmi) and for annihilation (Shiva & Parvati).

The timeline of Veda, the ancient knowledge source can't be found or guessed, but there is a mention of earth's rotation around the Sun and Nakshatras in Maitrayani Samhita. Bal Gangadhar Tilak in the book- Orion, had translated the hymns of this Samhita and that there is a difference of four and a half nakshatras in the start of spring season compared to today, inferring that Vedas are more than 6500 years old.

Let's discuss these concepts through some famous Suktas of Rigved:

The Nasadiya Sukta of the Rig Veda (RV 10.129) describes that there was no existence, nor was there anything like non-existence. It further states that there wasn't any space or sky, day or night, nothing at all. There was no life or death, hence nothing such as mortal or immortal existed. There was only a void and nothing else. Then there was a sudden spandan(a minuscule vibration) and the primordial sound of Aum produced which created the huge Hiranyagarbh (Golden womb) which was the shining light creating the whole universe using matter and energy.

According to the Vedic scriptures, this Hiranyagarbh was the foremost from which Brahma found a form resulting in the creation of Universe. It is said that Brahma was born from this golden egg and then created everything else, including Vishnu and Shiva.

In a different creation account, Shakta sect (followers of Goddess Shakti who believe everything is created by her) believes Brahma, Vishnu, and Shiva all come from the Goddess Adi Shakti.

Vaishnav sect (followers of Vishnu who believe he is the Supreme entity) believes that Brahma was born out of a lotus in Vishnu's naval. And Vishnu resides on Sheshnag (serpent) in the Cosmic Ocean.

But all sects believe in the formation of Hiranyagarbh first, the foremost source of light, energy and matter.

हिरण्यगर्भः सूक्तं (Hiranyagarbha Suktam)

~ Rig Veda {RV 10:121}

हिरण्यगर्भः समवर्तताग्रे भूतस्य जातः पतिरेकासीत्
स दाधार पृथ्वीं ध्यामुतेमां कस्मै देवायहविषा विधेम ॥१॥

hiranyagarbhaḥ samavartatāgre bhūtasya jātaḥ patirekāśīta |
sa dādadhāra prthvīm dhyāmutemām kasmai devāyahaviṣā vidhema ||

Meaning: HIRANYAGARBHA was present at the beginning; when born, he was the sole God of created beings. he upheld this earth and heaven, let us offer worship with an oblation to the divine.

Purush Sukta of RigVeda - Purush is the being who pervades everything conscious and unconscious universally. He is poetically depicted as a being with thousand heads, eyes and legs, enveloping not just the earth, but the entire universe from all sides and transcending in all 10 dimensions. All manifestations, in past, present and future, is held by the Purusha alone. Virat, or the astral body from the Purusha started the process of Creation. It is the progeny of Purush. In Virat, omnipresent manifests itself which causes the appearance of diversity. Virat is the principle that manifests as the external, gross, visible world and demonstrates ideals to the world.

Viraja is the intellect in any gross body, born from Purusha and Purusha in turn is born from Viraja.

In Purush Sukta, it is held that Purusha through a Yajna of himself, brings forth the avian, forest-dwelling, and domestic animals, the three Vedas, the meters (of the mantras). It also states that from his mouth, arms, thighs, and feet the four varnas (categories) are born. All Dev, Asur, Heaven, Earth & Air came from him.

पुरुष सूक्तम् (The Purusha Sukta)

~ Rig-veda (10.7.90.1-16)

सहस्रशीर्षा पुरुषः सहस्राक्षः सहस्रपात्
स भूमिं विश्वतो वृत्वात्यतिष्ठद्दशाङ्गुलम् ॥१॥

Sahasra-Shiirssaa Purussah Sahasra-Akssah Sahasra-Paat |
Sa Bhumim Vishvato Vrtva-Atya-Tisstthad-Dasha-Angulam ||1||

Meaning:

The Purusha (Universal Being) has Thousand Heads, Thousand Eyes and Thousand Feet (Thousand signifies innumerable which points to the omnipresence of the Universal Being), He envelops the World from all sides (i.e. He pervades each part of the Creation), and extends beyond in the Ten Directions (represented by Ten Fingers).

According to Shiv Puran:

Brahma ji explained to the sages and as mentioned in the Vedas, the Supreme being - “The Existent and the Brahman” is omnipresent and alone (Chapter 6: 1-7).

The manifested form of the formless Being/Ishwar is Sadashiv who then created the physical form Shakti from his body. This Shakti is called by various names - Pradhana, Prakriti, Maya, Guṇavati, Para. Shakti is the mother of Buddhi Tattva (The cosmic Intelligence), Vikar-rahit (without modification). She is the prime cause and the mother of the three deities. (Chapter 6: 4-20)

The manifested form Sadashiv - Shiva holds the Ganga on His head, the crescent moon on his forehead, has three eyes and five faces. He is always joyful. He has ten arms. He holds the trident. He is as pure and white as camphor. His body is entirely dusted with ash. He, together with Shakti, simultaneously created the holy centre called Shivaloka, called as Kashi. It is the seat of salvation. (Chapter 6: 25-28)

Sadashiv & Shakti created another being who is the most charming, calm, with Sattva Guṇa, the ocean of immeasurable majesty and endowed with patience. He has the lustre of sapphire having a golden form and features, named as Vishnu who is all pervasive. Shiva bestowed on him the Vedas through his nostrils (Chapter 6: 38-44).

Sri Vishnu followed the path of meditation and became enlightened. Due to meditation, water-currents of various sorts began to flow from the body of Vishnu. The divine waters pervaded the entire void. A contact with the same has been destructive of sins. Vishnu, being exhausted after creation of this Universe, went to sleep amidst the waters. He was in that blissful state of delusion for a long time. As approved in the Vedas, his name came to be established as Narayana (Having water as abode). (Chapter 6: 49-54)

Then, from Prakriti (Shakti) came into being the Mahat (cosmic Intellect), from Mahat the three Guṇas (Sattva, Rajas and Tamas). Ahaṁkara (the cosmic ego) arose therefrom in three forms according to the three Guṇas. The essences, the five elements, the senses of knowledge and action too came into being. All these principles originating from Prakriti are insentient, but not the Purusha. These principles are twenty-four in number.

Sadashiv is Niṣhkala (Nirguṇa) forever. For the activities of creation, maintenance and dissolution, he manifested himself in the three forms of Brahma, Vishnu and Rudra.

Śiva manifested himself in three ways in the form of Vaikuṇṭha (Viṣṇu)- born of the left limb, in the form of Brahmā- born from the right limb and in the form of Rudra- born from the heart. Sadashiv is the supreme Brahman, the eternal, the endless, the perfect and the unsullied.

Vishnu has Tamas within but Sattva outside. He is the protector of the three worlds. Rudra who causes dissolution of three worlds has Sattva within but Tamas outside. Brahma who creates the three worlds has Rajas both within and without. This is the position of the Guṇas in the three deities.

Sadashiv created Vishnu and Brahma, carved out the responsibilities of Trinity, their Consorts and ages as also the Pranava Mantra, Five Basic Elements, The Three 'Gunas', the Pancha Tanmatras, the Five Sensory Organs.

Brahma created water and a Huge Egg into which Vishnu provided consciousness to the Egg. Creation proceeded further as Kailash Mountain and the Seven Worlds. Brahma being still unsatisfied at His

performance, used Tamo Guna to create all static things and four-footed animals, Satvika Guna to produce Deities and, Rajas Guna to produce Human beings. With the approval of Bhagavan Shiva, Brahma created Rudra from His eyebrows, half of Rudra being 'Ardhanareesvara' or Half Man and Half- Woman. Rudra in turn created Rudra Ganas (all resembling Himself) and as requested by Brahma, created mortals since that was a task of annihilation meant for Rudra Himself. Brahma then created Sages Marichi from His eyes, Bhrigu from heart, Angira from head, Pulah from Vyana Vayu, Pulasthya from Udana Vayu, Vasishtha from Samana Vayu, Kratu from Apana Vayu, Atri from ear, Daksha Prajapati from Prana Vayu, Narada from lap, Kardama and Dharma from His shadows, and Manasa Putras viz. Sanaka, Sananda, Sanatana, Sanath Kumars, two halves of His body as Manu & Satarupa and they gave birth to Priyavrat and Uttanapad as sons respectively; Satarupa also gave birth to Akuti married to Sage Ruchi, Devahuti to Sage Kardama, and Daksha Prajapati to Prasuti. The various Sages and others thus created by Brahma procreated progenies and filled the entire World eventually. For instance, Marichi's son Kashyapa, who married thirteen of the sixty daughters of Daksha, had produced several clans of the Universe including Daityas, Serpents and vicious species born of Diti and Devas from Aditi.

The Shatapatha Brahmana says that Brahma was born of the Supreme Being- Brahman and the female energy known as Maya. Wishing to create the universe, Brahman first created the water, in which he placed his seed. This seed transformed into a golden egg, from which Brahma appeared. For this reason, Brahma is also known as 'Hiranyagarbha'. According to another legend, Brahma is self-born out of a lotus flower which grew from the navel of Vishnu.

Nataraja- the Cosmic Dancer, is a revered form of the Hindu deity Shiva. He is known for his dynamic dance, which symbolizes the cosmic cycles of creation and destruction, Shiva performed the Ananda Tandava, or the Dance of Bliss. This form's idol is placed in CERN- the European organization for nuclear research where Scientists researched on God's particle and how this Universe goes through the perpetual dance of creation and destruction like the cosmic dance of Shiva.

According to Vishnu Purana:

Vishnu as the central element of its cosmology, unlike some other Puranas where Shiva or Brahma or goddess Shakti are. The first Amsha (part) of Vishnu Purana describes cosmology, dealing with the creation, maintenance and destruction of the universe. The third part of the Vishnu Purana presents its theory of Manvantaras, (each 306.72 Million Years Long) in accordance with the Hindu belief that everything is Cyclic. Six manvantaras have already passed, and the current is the seventh. In each age, asserts the text, the Vedas are arranged into four. This has already happened twenty eight times and each time, a Vyasa appears (time Dilation).

Time dilation and Multiverse:

According to Surya Siddhant:

Ancient astronomy believed in Time dilation. It happens due to change in space because of which time varies. Time at another point in space is slower or faster than the time on the Earth. And this difference is called as 'time dilation'. Bharatiyas had knowledge of this time dilation from Ancient times.

There is a famous story in Bhagvat Purana as, “a king named Kakudmi went to Brahma-loka with his daughter Revati. He waited for few minutes and when Brahma arrived, he asked to suggest a bridegroom from a particular family for his daughter. Hearing this, Brahma told him that when you were waiting here, 27 mahayug ($43,20,000 \times 27 = 11,66,40,000$ human years) had passed on the Earth.

Legend related to Multiverse is:

Once, when Krishna was ruling Dwarika, Brahma came to see Him. When Krsna was so informed, He immediately asked, ‘Which Brahma? What is his name?’

Brahma was surprised. He told the Dwarapala to go and inform Krsna that he was the four-headed Brahma who is the father of the four Kumaras.’

When Brahma was escorted in, and he saw Shri Krsna, he offered obeisances at His lotus feet and asked if there is any other Brahma besides him within this universe.

Upon hearing this, Sri Krsna smiled and meditated. Unlimited number of Brahmas arrived instantly. These Brahmas had different numbers of heads. Some had ten heads, some twenty, some a hundred, some a thousand, some ten thousand. No one can count the number of faces they had. Similarly, there also arrived many Sivas with various number of heads & faces. They were all taking care of other Universes.

When the four-headed Brahma of this universe saw all these opulences of Krsna, he became very bewildered. All the Brahmas who came to see Krsna offered their respects at His lotus feet, and were resting in the one body of Krsna making this Brahma realize his miniscule presence in this Universe while He thought himself to be the only Supreme Creator.

Another legend is- "*Uttishthata Jagrata Prapya Varan Nibodhat*" is part of dialogues between Yama and Nachiketa, and is mentioned in Kathopanishad 1.3.14

Nachiketa was sent to Yama, the Hindu god of death, by his father Vajashrava. He asks Yama to teach him Self-knowledge (Brahma Gyana).

In the shloka, Yama is advising Nachiketa to rise, awake and not stop until he learns this self-knowledge from the learned teachers.

Nachiketa transcended this mortal consciousness and went to Yamaloka, the land of Yamaraj, the God of death. He stayed there for three days and three nights, after which Yamaraj appeared. As Nachiketa had been waiting for him for three days and three nights Yamaraj gave him three boons. Nachiketa first asked for peace for his father and himself. Next, Nachiketa wished to learn the sacred yagna, which Yama elaborated. For his third boon, Nachiketa wanted to learn the mystery of what comes after the death. Yama was secretly pleased with this disciple, and elaborated on the nature of the true Self, which persists beyond the death of the body. He revealed the knowledge that one's Self is inseparable from Brahman, the supreme spirit, the Eternal.

The Mahabharata (Shanti Parva, 231.12-20) explains:

The rishis, measuring time, have given particular names to particular portions [of time]. Five and ten winks of the eye make what is called a Kasha. Thirty Kasthas make what is called a Kala. Thirty

Kalas, with the tenth part of a Kala, make a Muhurta. Thirty Muhurtas make one day and night. Thirty days and nights form a month, and twelve months form a year. The sun makes the day and night for men. The night is for the sleep of all living creatures, and the day is for work. A month of human beings is equal to a day and night of the departed souls [ancestors]. That division consists in this: the light fortnight (Shukla Paksh-waxing Moon) of the month is their day which is for work; and the dark fortnight (Krishna Paksh-waning Moon) is their night for sleep. A year (of men) is equal to a day of the gods [devas or celestials] : the half year for which the sun travels from the vernal to the autumnal equinox is the day of the gods, and the half year for which the sun moves from the latter to the former is their night. [Thus, an earth year is but a day for the devas.]

According to the Śivapurāṇa 2.1.10,:

A thousand sets of the four-yuga periods constitute one day of Brahma. The period of night is also similar. Further measurement of time is based on this calculation. Thirty such days (days and nights) constitute one month and twelve months, one year. The span of life of Brahma is hundred such years. One year of Brahma constitutes one day of Vishnu. Vishnu lives for hundred years in this calculation. One year of Vishnu constitutes one day of Rudra. When a hundred-year period passes, Rudra assumes the form of Nara (supreme Man). He stays like that as long as the breath is retained by Sadashiv. When He exhales, he merges into Shakti. In the case of all living beings, Brahma, Vishnu, Hara, Gandharvas, serpents, Rakshasas, etc., twenty-one thousand six hundred respirations constitute the period of one day and one night. Six respirations constitute the period of time one Pal. Sixty such Palas constitute one Ghaṭi. Sixty Ghaṭis constitute one day and one night. ($6 \times 60 \times 60 = 21600$). There is no limit to the number of respirations of Sadashiv.

In calculating the duration of the different yugas, there are few differences between the Puranas. The Brahmanda Purana (1.2.29.31-34) specifically states that Krita or Satya-yuga is 1,440,000 human years in length, Treta-yuga is 1,080,000 years, Dvapara-yuga is 720,000 years, and Kali-yuga is 360,000 years in length. The Linga Purana (4.24-35) also states the same except for Treta-yuga, it says is 1,800,000 years in length.

However, when explaining the various measurements of time, the Vishnu Purana (Book One, Chapter Three), the Srimad-Bhagavatam (3.11.19), the Bhagavad-gita (8.17), the Vayu Purana (Chapter 57) and others, such as the Mahabharata, all agree on the measurements of the durations of the yugas as:

One cycle of the four yugas together is 12,000 years of the demigods, called divine years. Each of these years is composed of 360 days, and each of their days is equal to one human year. So Krita-yuga is 4000 divine years in length, Treta-yuga is 3000 divine years in length, Dvapara-yuga is 2000 divine years in length, and Kali-yuga is 1000 divine years long, with the addition of the conjoining portions of the Sandhya and Sandhyansa.

In Vedas (Multiverse):

There are three worlds referred very often in Vedas: Deva-loka, Pitru -lok and Bhu-lok(The Earth).

In Puranas, 14 worlds are mentioned - Seven upper worlds and seven lower worlds.

Satya, Tapa, Jana, Maha, Swarga, Bhuva, and Bhu(The Earth) are the seven upper worlds. Atala, Vitala, Sutala, Talatal, Rasatala, Mahatala, and Patala are the seven lower worlds.

In Surya Siddhant (time Dilation):

This time dilation is clearly described with its nine main variations called as **Navavida-kālamāna**. It is written by ancient Bharatiya astronomer, Varahamihira in his text *Sūryasiddhāntaḥ*.

Names of nine types of time dilation mentioned in the text Surya-Siddhanta are:

1)Brahma 2) Prājāpatya 3) Divya 4) Pitrya 5) Gaurav 6) Saura 7) Sāvana 8) Cāndra and 9) Nakṣatra.

*brahmah divyah tatha pitryah prajapatyah guros tatha saurah ca savanah candram arksah manani
vai nava*

*caturbhir vyavaharo 'atra sauracandrarksasavanaih barhaspatyena sastyabdah jneyah nanyais tu
nityasah*

- (Sūryasiddhāntaḥ.14.1)

a) Brahma

Brahma-mana means Kalpa.

1 kalpa = (14manvantar + 15 sandhi).

There are 71 mahāyuga in 1 manvantar so $14 \times 71 = 994$ mahāyuga in 14manvantar.

1 sandhi is 4,800 divyavarṣa

So, $15 \times 4,800 = 72,000$ divyavarṣa

convert it into mahayuga $72,000 \div 12,000 = 6$ mahāyuga.

Therefore, 14 manvantar (994 mahayug + 15 sandhi = 6 mahāyuga) = $1,000$ mahāyuga.

It could be explained simply as $1,000$ mahāyuga makes 1 kalpa. 1 kalpa is half a day (12 hours) for Brahma. If we want to convert it in sauravarṣa (human years) then, ($1,000$ Mahāyuga \times $12,000$ divyavarṣa \times 360 years) = $4,32,00,00,000$ human years.

Therefore, $4,32,00,00,000$ years on the Earth is just 12 hours in Brahma-loka.

b) Divya

There are two ayanas in an year: Uttatrayana and Dakshinayana. Each Ayana is 6 months & together it makes an year. Uttatrayana (6 months) is day for devatā and dakshinayana (6 months) is night for devatā. 1 Sauravarṣa makes 1day and night for devatā. 360 Sauravarṣa(human years) makes 1 divyavarṣa.

Therefore, 360 years on the Earth is 1 year for deva-loka.

c) Prājāpatya

Prajapatya-mana means manvantar.

1 manvantar = 71 mahāyuga.

1 mahāyuga = 12,000 Divyavarṣh. So, ($71 \times 12,000 \times 360$) = $30,67,20,000$ Sauravarṣh. Therefore, $30,67,20,000$ years on the Earth is 1 life cycle of Manu.

d) Pitru

There are two pakṣha in one month, they are: 15 days of Krishna Paksh and 15 days of Shukla paksha making one day and night in pitr-lok.

Therefore, one month on Earth is just one day in Pitr-loka.

e) Gaurav

Gaurav mana is the time taken for the planet Jupiter to orbit around the Sun which is 12 years (approximately). So, around 12 years on the Earth is one year on the Jupiter which is one Gaurav mana.

f) Saura

As we observe from the Earth, we feel Sun is rotating around the Earth. Observer becomes the centre point of the universe. There will be only 360 days considered as constant and is called Sauravarsh.

This Sauravarṣh is considered as human year to compare with other measurements of time.

g) Sāvana

One Sunrise to the next Sunrise makes a day. There are 365 days in an year because Sun takes 365 days and 5 hours to complete the rotation as observed from the earth. So extra few hours are adjusted as leap year in every four years. This is generally accepted and followed by several countries on Earth.

h) Chandra

The distance between the Sun and the Moon is measured as tithi. There are 30 tithi in one lunar month. Rise of one tithi to another tithi is called as Chandra day. Moon completes 12 rotations of waxing and waning cycles in an year.

i) Nakshatra

Moon takes 27 days (approximately) to complete one orbit of 360 degrees. There are 27 Nakshatra (constellations). Rise of one Nakshatra to another Nakshatra is called as Nakshatra day. It is measured by the movement of the Moon.

According to Vedas:

Small units of time used in the Vedas:

Unit Value in SI units

- paramāṇu(base unit) $\approx 26.3 \mu\text{s}$
- aṇu = 2 paramāṇu $\approx 52.67 \mu\text{s}$
- trasareṇu = 3 aṇu $\approx 158 \mu\text{s}$
- truṭi = 3 trasareṇu $\approx 474 \mu\text{s}$
- vedha = 100 truṭi $\approx 47.4 \text{ ms}$
- lava = 3 vedha $\approx 0.14 \text{ ms}$

- nimeṣa = 3 lava ≈ 0.43 s
- kṣaṇa = 3 nimeṣa ≈ 1.28 s
- kāṣṭhā = 5 kṣaṇa ≈ 6.4 s
- laghu = 15 kāṣṭhā ≈ 96 s (1.6 min)
- danda (nadika) = 15 laghu ≈ 1.44 ks (24 min)
- muhurta = 2 danda ≈ 2.88 ks (48 min)
- ahorātram (sidereal day) = 30 muhūrta ≈ 6.4 ks (24h)
- masa (month) = 30 ahorātram $\approx 2,592$ ks
- ritu (season) = 2 masa $\approx 5,184$ ks
- ayana = 3 ritu $\approx 15,552$ ks (6 mth)
- samvatsara (year) = 2 ayana $\approx 31,104$ ks
= ahorātram of Deva

According to Vishnu Puran :

When Vishnu takes a breath, multiple Universes are created and destroyed. Each Universe has its own Brahma. Brahma lives for 100 years and each year of Brahma has 360 days. And we are currently in the first day of 51st year of his life. During the day, life is created and at night, all life is destroyed.

There are 2 Kalpas in Brahma's full day of 24 hours: 1 kalpa for his 12 hour day and 1 kalpa for his 12 hour night

So, 2 kalpas for a 24-hour day-night is a full day of Brahma.

Mahayuga which contains four ChaturYuga(s).

1. Satya/ Krita Yuga - 4 Charanas (1,728,000 solar years = 4x)
2. Treta Yuga - 3 Charanas (1,296,000 solar years = 3x)
3. Dwapara Yuga - 2 Charanas (864,000 solar years = 2x)
4. Kali Yuga - 1 Charanas (432,000 solar years = x)

The total of all these years of Mahayug is 4.32 million years.

One cycle of the above four Yugas is one Mahayug (4.32 million solar years)

1 Manvantara (1 life span of Manu) lasts 71 years of the Mahayug.

1 Manvantar = $71 * 4.32 = 306.72$ million years

Then, Pralay (mass extinction) happens. After each Manvantar, there is a period of recovery (lasting for one Satya Yug time period = 1.728 million years) called Sandhi Kal.

Around 252 million years ago, the Earth experienced a large mass extinction (Permian-Triassic extinction event).

According to Science, it took around 10 million years, for the Earth to go through Sandhi Kal.

1 Kalpa = 14 Manvantar + 15 Sandhi Kal

$$\begin{aligned}
 &= 14 * 306.72 + 15 * 1.728 = 4.32 \text{ billion years } 1 \text{ full day of Brahma} = 2 \text{ Kalpa} \\
 &= 4.32 * 2 = 8.64 \text{ billion years of creation and destruction}
 \end{aligned}$$

According to latest discoveries in science, oldest life form found on Earth is 4.28 billion years old which is in accordance with the above timeline.

On Universal scale a month is of 30 days and an year is of 12 months. 100 years is the lifespan of a universe and is called a Maha Kalpa.

The lifespan of Brahma is 1 Maha Kalpa = 100 years = $100 * 8.64 * 30 * 12 = 311.04$ trillion years.

According to The Brihadaranyaka Upanishad:

In the beginning, this universe was the self (Virāj) alone. He, the Supreme, burnt (aushat) all evils, therefore He is called Purusha. He who knows this verily burns up to him who wishes to be Viraj in advance of him. Primeval Cosmic Being - PURUSHA split into two - one half was male - Brahma/ Prajapati Manu and the other female - Sarasvati /Shatarūpa.

According to the scriptures, Brahma needed knowledge to create the universe, so he created Saraswati who is the Goddess of knowledge.

Brahma is a male deity who is the creator of everything in this Universe. He is projected to have emerged from the metaphysical Brahman(Ishwar) along with Vishnu (the preserver), Shiva (the destroyer), and all other gods, goddesses, matter, and other beings.

At the beginning of the process of creation, Brahma created the 'Four Kumaras' who were Brahma's Manasputra: Sanaka, Sanandana, Sanatana and Sanat Kumara.

These four Kumaras, as Siddheshwars, were ascetics, had achieved all the yogic achievements (siddhis) and as such, they could travel in outer space without machines. Prithu and sage Narada received knowledge from these Kumaras. Brahma wanted them to continue the process of creation, but they had to refuse as they were celibate, making Brahma furious. His fury led to the creation of Rudra. Rudra's birth was followed by the appearance of the first-generation Saptarishis, along with the 10 Prajapatis and a daughter named Satarupa. These Prajapatis procreated further to create all beings:

- The foremost among them in the first manvantara of current (51st) kalpa is Swayambhu Manu, along with Saptarishis and Indra (here Vishnu as Yagna)
- The most prominent among Prajapatis is Daksha whose daughters have been instrumental in further creation.
- The current universe is asserted to be ruled by the 7th Manu named Vaivasvata Manu.

Saptarishis

The Saptarishis hold a revered place in Hinduism as the seven great sages chosen to preserve and pass on the knowledge of yoga and spiritual wisdom to humanity. It is said that Adiyogi (Shiva) first imparted the science of Yog to the Saptarishis so they could spread the teachings.

These sages were born from the mind of Brahma, the Creator, and continue to guide humanity through the cycles of the four yugas (ages of the world).

The Saptarishis of the current Vaivasvata manvantara (the present yuga cycle) are:

- Atri
- Bharadwaja (Bhrigu)

- Gautama Maharishi
- Jamadagni
- Kashyapa
- Vashistha
- Vishwamitra

The seven Saptarishis in the next Savarni manvantara will be:

- Diptimat
- Galava
- Parashurama
- Kripa,
- Drauni or Ashwatthama
- Vyasa
- Rishyasringa

The Saptarishi constellation is known as the Big Dipper, which is part of the Ursa Major or Great Bear constellation. These seven sages guide humanity through each cycle and are linked to spiritual progress and dharma. Each of the seven sages of the first generation were (Manvantar of Swayambhu Manu) are the names of the stars in the Big Dipper:

- Kratu (Dubhe)
- Pulaha (Merak)
- Pulastya (Phecda)
- Atri (Megrez)
- Angiras (Alioth)
- Vashistha (Mizar)
- Marichi (Alkaid)

The Saptarishi stars have a symbolic connection in Hindu astrology and cosmology, where they change with each Manvantara (a cyclical age).

[Ursa Major is one of the oldest constellations and was listed by Ptolemy in the 2nd century AD. It is also the third-largest constellation in the modern system of 88 constellations]

The reference of Saptarishi / Seven sages is also found in other mythologies:-

In Greek mythology, constellations like Orion and Draco are linked to gods, heroes, and mythical creatures. Orion, for instance, is a hunter in Greek mythology, while Draco is a dragon.

The Chinese constellations, especially those associated with the Chinese Zodiac, have a strong connection to animals, seasons, and cultural symbolism.

Indigenous cultures of North and South America often see constellations as part of their creation stories. These constellations are linked to animals, nature, and the connection between the spiritual and earthly realms.

The Seven wise men or sages of Greece have been mentioned in Greek Philosophy, a group of 7 legendary wise persons from the Archaic Age.

The Mesopotamians called the 7 sages The Apkallu.

In Zoroastrianism, the Amesha Spenta are a class of seven divine entities emanating from Ahura Mazda, the highest divinity of the religion.

According to Judeo-Christian traditions, seven Archangels are the highest-ranking angels who have authority over other angels and were created to serve according to Divine will in helping humanity.

In the Yazidi belief system, a god created the world, and the world is now in the care of a *Heptad* of seven Holy Beings, often known as Angels or heft sirr (the Seven Mysteries).

According to Vishnu Puran, first Saptarishis who were born from Brahmā are- Kratu, Pulah, Pulatsya, Atri, Angira, Vasishtha, Marichi.

Brahma is the creator of this universe. He has ten sons referred to as the Prajapatis and one daughter. The Prajapatis are a group of ten divine beings. They all were born from Brahma's mind. They create life, persevere knowledge, and represent divine qualities. They maintain the cycle of creation and guide people to follow dharma and righteousness. They are regarded as the ancestors of all living species. Other than the seven sages, the Saptarishi, Narad, Bhrigu and Daksh were the mind-born sons of Brahma along with a daughter Satrupa.

Marichi: Marichi (meaning a ray of light) is often regarded as the chief among the Prajapatis. He is associated with the power of creation through the mind. Marichi's descendants are regarded as great sages. Marichi married Kala and gave birth to Kashyap which is the first gotra.

Atri: Atri is known for his penance and devotion. He and his wife, Anasuya, are known for their profound devotion and disciplined lifestyle. Atri is associated with the creation of the sacred Vedic drink Soma. His wife was Anasuya.

Angiras: Angiras are associated with fire. He was the Drishta of most of the fourth Veda called Atharvaveda. His wife was Surupa.

Pulaha: Pulaha's name means "he who drinks." He is associated with the power of procreation. He was born from the navel of Brahma.

Kratu: Kratu's name means "ritual," He represents the ritual side of creation. He is a significant figure in the Atharvaveda. It is said that he was born from the hand of Brahma.

Pulastya: Pulastya is known for his wisdom and teachings. He is regarded as the father of the Rakshasas (demons). He is also associated with the great epic, the Ramayana. Pulastya Rishi was married to one of Kardam ji's nine daughters named Havirbhoo. Pulastya Rishi had two sons – Maharshi Agastya and Visravas. Vishravaa had two wives: one was Kaikesi who gave birth to Ravana, Kumbhakarna, and Vibhishana; and another was Ilavida and had a son named Kuber.

Vasishtha: Vasishtha is a highly respected sage in Hindu mythology. He is known for his wisdom and knowledge of scriptures. His teachings are found in the Rigveda and he gave Mandal 7 of the Rigved.

He had a profound influence on Hindu philosophy. Arundhati is the wife of Vasishtha. According to our Astronomy, Vasishtha and Arundhati are the only stars that revolve around each other and so they are considered very sacred to a newlywed couple (Vashistha is Mizar star and Arundhati is Alcor star). These stars are now the twin stars.

Daksh: Daksh is often considered a symbol of authority and order. He is associated with creating the diverse living beings in the universe, including humans. He was married to Prasuti. Daksh's daughter was Sati who was married to Shiv.

Bhrigu: Bhrigu is known for his deep insights. He is known for creating the Bhrigu Samhita, which predicts the future using a person's birth chart. His descendants are known as Bhargav.

Narada: Narada is a celestial sage and divine musician. He is known for spreading wisdom and devotion through his travels and melodious songs. Narada is the ancient Bharat's most travelled sage with the ability to visit distant worlds and realms. He is depicted carrying a Veena, named Mahathi.

Satrupa : Brahma has one daughter named Satrupa (one who can take hundred forms) born from various parts of his body. She is said to be the first woman born from the feminine energy of Brahma and married Manu, the first man born from Masculine energy of Brahma.

Brahama's 10 Prajapati's Genealogy:

Rishi	Wife	Children
1st Sage – Marichi	Dharmavrat/Kala	Kashyap
Kashyap	Many wives	Dev Asur Other species like ant etc.
2nd Sage – Angiras	1 st wife - Surupa 2 nd wife – Tara 3 rd wife - Mamta	From 1 st wife - Brihaspati From 2 nd wife - Kesari, Kushadhvaja, Kacha, another 4 sons and Romash From 3 rd wife - Bharadvaj and Revati
Brihaspati	Shubh	Bhaanumatee, Raakaa, Archishmatee, Mahaamatee, Mahishmatee, Sinceevaalee, Havishmatee
Bhardwaj	Sushila	Garg
Garg	Ghritachi	Dronacharya
Dronacharya	Kripa	Aswatthama
3rd Rishi – Atri	Anasuya	Dattatreya, Durvasa, Chandra (Som)
Dattatreya	Anagha	Nimi
Durvasa	Kandali	
Chandra	27 wives – they were all daughters of Daksh	
4th Sage - Pulatsya	Manini	Vishrava, Agastya
Vishrava	1 st wife - Kaikasi 2 nd wife - Ilavida	From 1 st wife - Ravana, Surpankha, Kumbhkarna, Vibhishan From 2 nd wife - Kuber
Agastya	Lopamudra	Drdhasyu
5th Sage – Pulah	Kshama	Kardama, Kanakaapeetha, Urvarivat
Kardama	Devahuti	Kapil, Anasuya, Arundhati, Gati, Havirbhu, Kalā, Khyati, Kriya, Shanti (Chitti), Shraddha
6th Sage – Kratu	Kriya	60000 children named Balkhilyas of the size of thumb
7th Sage – Vasishtha	Arundhati	Shakti
Shakti	Adrsyati	Parashar
Parashar		Vyas (born from Satyavati before her marriage)
8th Sage – Daksh	1 st wife – Prasuti 2 nd wife – Akini	Sati - she married Shiva Shraddha, Lakshmi, Dhriti, Tushti, Pushti, Medha, Kriya, Buddhi, Lajja, Vapu, Shanti, Siddhi and Kirti (these all married god Dharmdeva – God of death) Khyati – she married sage Bhrigu Sambhuti - she married sage Marichi <u>Smriti</u> – she married sage Angiras Priti - she married sage Pulastya

		<p>Kshama - she married to sage Pulaha</p> <p>Sannati - she married sage Kratu</p> <p>Anasuya - married sage Atri</p> <p>Urjja - she married sage Vasishtha</p> <p>Svaha - she married Agni (the god of fire)</p> <p>Svadha - she married Kavi (a member of the class of Pitrs)</p> <p>Along with these daughters, the goddess of love, Rati, is also considered an offspring of Daksha. The Shiva Purana and Kalika Purana narrate that she emerged from the sweat of Daksha after he was asked by Brahma to present a wife to the love god Kama</p> <p>13 daughters from 2nd wife - Aditi, Diti, Danu, Arishta, Surasa, Surabhi, Vinata, Tamra, Krodhavasha, Ira, Kadru, Vishva, Muni (All these were married to sage Kashyapa)</p> <p>27 daughters from 2nd wife - Ashvini, Bharani, Krttika, Rohini, Mrigashira, Ardra, Punarvasu, Pushya, Ashlesha, Magha, Phalguni, Uttarpfalguni, Hasta, Chitra, Svati, Vishakha, Anuradha, Jyestha, Mula, Purvashadha, Uttarasadha, Shrivana, Dhanistha or Shatabhisha, Abhijit, Purvabhadrapada, Uttarabhadrapada and Revati (all these were married to Chandra, the god of the Moon)</p> <p>4 more daughters - married to sage Arishtanemi</p> <p>2 more were married to sage Bahuputra</p> <p>2 were married to sage Angiras</p> <p>2 were married to Krisasva</p>
9 th Sage – Bhrigu	<p>1st wife – Khayti</p> <p>2nd wife – Kavyamata</p> <p>3rd wife - Puloma</p>	<p>Lakshmi, Dhata, Vidhata</p> <p>Shukra</p> <p>Chyavan (Bhargav)</p>
Chyavan	Aarushi	Aurva
Aurva	Richik	Kandali, Richik (name of son on mother's name)
Richik	Satyavati	Jamadagni
Jamadagni	Renuka	Parshuram (Bhargav Ram)
10 th Sage – Narad	Ascetic	

Gotra and Vivah

It refers to the clan of people who descend from an unbroken male line of a common male ancestor or patrilineal. People belonging to the same Gotra are considered siblings, and a marriage in such a case can increase the chances that the child will get genetically transmitted diseases. Marriage within the same Gotra is forbidden in almost all Hindu families. This is because they are thought to have come from the same family. Vedic Hinduism recognizes eight types of marriages. It therefore primarily follows the Manu Smriti principles, which refers to eight types of marriages and their roles and responsibilities.

Brahmo-daivastathaivarsah prajapatya-statha 'surah
Gandharvo raksasascaiva Paisavastamah smrtah.

----*Manusmrti, 3. 21*

Eight types of marriages for the importance of Gotra are as follows -

- **Brahma Vivaha-** Considered the highest form of marriage, the bride's father chooses a groom who is learned in the Vedas, has good moral character, and is capable of being a responsible householder. The bride is then gifted to the groom. The son of a wife married according to Brahma rites liberates ten ancestors and descendants. This means that the virtuous actions of such a son will help liberate or uplift ten generations of his ancestors and descendants to achieve a better spiritual state.
- **Daiva Vivaha-** This form of marriage is arranged by the bride's family, in which the groom is selected through a religious ceremony. This type of marriage is considered to be divine, as the groom is believed to be a gift from the Gods. A father in this kind of marriage gives his daughter to a priest as a form of a dakshina. It is the father who searched for a groom for his daughter. According to Manu, the son of a woman who marries according to Daiva rites can liberate seven generations of their ancestors and descendants.
- **Arsa Vivaha-** The groom, or rishi, pays the bride's family a price for the bride, usually in the form of a cow and two bulls. This form of marriage was associated with the Brahmins and symbolized the pastoral stage of Hindu society.
- **Prajapatya Vivaha-** It is quite similar to Brahma Marriage. The only difference is that there is no kanyadan in this form of marriage, and it is the father who searches for a groom for his daughter and the couple has to perform their religious obligations, i.e., Dharma, together diligently. The father's only request and condition to the bridegroom is that he must treat his daughter as his partner, respect her, and also fulfil their religious obligations together. Manu opined that the son of a woman who is married, according to Prajapatya rites, can liberate his six ancestors and descendants.
- **Gandharva Vivaha-** In this form of marriage, a man and a woman mutually decide to marry each other, so the approval of parents is not necessary. It is a voluntary union between a man and a woman based on mutual love and consent without any religious or ceremonial rites.
- **Asura Vivaha-** In an Asura marriage, a girl is given in marriage after the bridegroom gives all possible wealth to the father of the bride. It resembles a business transaction where the bride is exchanged for wealth given by the bridegroom, indicating that the bride is purchased. This is why this form of marriage is the most condemned.
- **Rakshasa Vivaha-** In this form of marriage, a bride is abducted, and her family is subjected to torture. The bridegroom goes against the bride's family to claim her as his own. Rakshasa Vivaha is essentially marriage by abduction, where the groom forcibly takes away the bride against her will and the consent of her family.

- Paishacha Vivaha- Paishacha Vivaha is viewed as the lowest form of marriage in Hindu tradition. It involves the groom deceiving and seducing the bride when she is not in a conscious state of mind or when she is incapable of giving her consent.

As per Manu Smriti, the third and fourth types of marriages are forbidden. The second and third are also condemned. Gandharva marriage is similar to modern-day love unions, in which the individual can choose their partner. Gandharva marriage was once a prominent part of our Shastras. However, Vedic Hinduism gave way to classical Hinduism, and arranged marriage emerged. This is still the most common ritual for a marriage between two people.

Sagotra marriage is permissible if they are not related upto six ancestral generations of either the paternal or maternal side. This is stated in chapter 5, Manu Smriti, mantra 60.

सपिण्डता तु पुरुषे सप्तमे विनिवर्तते ।
समानोदकभावस्तु जन्मनाम्नोरवेदने ॥ ६० ॥

sapiṇḍatā tu puruṣe saptame vinivartate |
samānodakabhāvastu janmanāmnoravedane || 60 ||

The ‘Sapiṇḍa-relationship’ ceases with the person in the seventh-generation and the ‘Samānodaka-relationship,’ when the origin and the name become unrecognisable—(60).

According to the Brihadaranyaka Upanisad 2.2.6, Gautama, Bharadvāja, Viśvāmitra, Jamadagni, Vasishtha, Kaśhyapa, and Atri are seven sages (also known as Saptarishi). The progeny of these seven sages is declared to be gotras. The offspring (apatya) of these are gotras and other than these are called gotrāvayava.

Varna-

Gotra was used as a surname until Caste system came into existence which was given by Britishers. They could never identify our Varna system, which divided all the people among four categories, according to the work a person does. The four categories were –

Brahmin

Vaishya

Kshatriya

Shudra

In Shrimad Bhagwad Gita, chapter 18, verse 42,43,44,45, there is proper description of these Varnas.

शमो दमस्तपः शौचं क्षान्तिरार्जवमेव च ।
ज्ञानं विज्ञानमास्तिक्यं ब्रह्मकर्म स्वभावजम् ॥ 42॥

śhamo damas tapaḥ śhauchaṁ kṣhāntir ārjavam eva cha
jñānam vijñānam āstikyaṁ brahma-karma svabhāva-jam

Tranquility, restraint, austerity, purity, patience, integrity, knowledge, wisdom, and belief in a hereafter—these are the intrinsic qualities of work for Brahmins.

शौर्यं तेजो धृतिर्दाक्ष्यं युद्धे चाप्यपलायनम् ।
दानमीश्वरभावश्च क्षात्रं कर्म स्वभावजम् ॥ 43॥

śhauryam tejo dhṛitir dākṣhyam yuddhe chāpy apalāyanam
dānam īśhvara-bhāvaśh cha kṣhātram karma svabhāva-jam

Valor, strength, fortitude, skill in weaponry, resolve never to retreat from battle, large-heartedness in charity, and leadership abilities, these are the natural qualities of work for Kshatriyas.

कृषिगौरक्ष्यवाणिज्यं वैश्यकर्म स्वभावजम् ।
परिचर्यात्मकं कर्म शूद्रस्यापि स्वभावजम् ॥ 44॥

kṛiṣhi-gau-rakṣhya-vāṇijyam vaiśhya-karma svabhāva-jam
paricharyātmakam karma śhūdrasyāpi svabhāva-jam

Agriculture, dairy farming, and commerce are the natural works for those with the qualities of Vaishyas. Serving through work is the natural duty for those with the qualities of Shudras.

The duties of these Varna are defined by their work, behaviour and characteristic of an individual, not by their birth.

The most common gotra are Kashyap, Vishwamitra, Vasishtha, Bhrigu, Bharadwaj, Atri, Gautam

One should not choose the bride from the same gotra or born in the line of same sage. One may choose from (descendants of) more than seven (generations) on the paternal side and more than five (generations) on the maternal side.

—Agni Purana, Chapter 154

RISHIS WERE RESEARCH SCHOLARS/SCIENTISTS

1. Vishwamitra- visionary of Gayatri mantra & Mahamrityunjay mantra, 3rd Mandal of Rigved and first Missile man
2. Garg - Astrological treatise, wrote Garg Samhita
3. Bhrigu - Astrological treatise, compiled Bhrigu Samhita, married to Daksh daughter Khyati
4. Aryabhatt - Principles of Astrophysics, trigonometry, zero, value of pie, motion of planets, eclipse time, first to proclaim earth is round, rotates on its axis & orbits the Sun, wrote Aryabhattiyam
5. Kapil - Father of Cosmology, Principles of Duality, visionary of Sankhya Darshan
6. Sushrut - Principles of Surgery and medicine, described 300 surgical procedures & 125 surgical instruments, pioneered in the field of plastic surgery, wrote Sushrut Samhita
7. Varahmihir - Treatise on Astronomy, described planets reflect Sunlight to be lustrous & described large number of comets, predicted water on Mars, declared earth as spherical, gave cures for diseases of animals & plants, wrote Panch Siddhant
8. Bharadwaj - Inventor of Airplanes, aviation science, wrote Viman Shastra, father of Ayurved, Dhanurved, Neeti Shastra
9. Kanad - Principles of Atomic theory, visionary of Vaisheshik Darshan
10. Chanakya - Pioneer in economics & political science, Acharya in Takshashila University, wrote Arthashastra
11. Charak - Garbhgyan, principles of Ayurved, describing medicinal qualities of 100,000 herbal plants, wrote Charak Samhita
12. Nagarjun - science of Alchemy, turning base metals to Gold, wrote Rasendramangalam, Chancellor of Nalanda University
13. Madhav - Principles of calculus, wrote Mahajyanayan Prakar
14. Brahmagupta - Gravity, Area of cyclic quadrilateral, Mathematics, Astronomy , Algebra and related operations, introduced negative numbers, first to use mathematics to predict the positions of planets, timings of lunar/solar eclipses, wrote Brahmasphut Siddhant, director of Ujjain's centre of Astronomy
15. Bhaskaracharya - Principles of Differential calculus, Gravity, wrote Bij Ganit, Lilavati, Siddhant Shiromani, Goladhyay, GrihGanit
16. Patanjali - Principles of Yog, Ayurved, wrote Patanjali Yog Sutra

17. Katyayan- Pythagorean theory, value of sq root of 2, wrote Sulbha Sutr
18. Panini - Sanskrit 3959 rules of grammar and syntax, wrote Ashtadhyayi
19. Agastya - Tamraparniyam medicine, early grammar of Tamil language Agattiyam, wrote Agastya Gita, Agastya Samhita & Dwaidha-Nirnaya tantra, founder of Kalaripayattu, Silambam & Varmam science of healing.
20. Arundhati - wife of Vasishtha, considered to be epitome of chastity and purity, the couple is highly revered and now considered as stars revolving around each other, are shown to the newly weds as a marriage ritual
21. Anasuya - wife of Atri, gave a herbal medicine to Sita to maintain her beauty and clothes & ornaments which will never fade, mother of Dattatreya(avatar of Brahma, Vishnu, Mahesh), Durvasa, Chandra dev (Moon) and sister of Kapil
22. Atri - brought Godavari River in Nasik, which is called Ganga river of the south, wrote Atri Samhita
23. Chyavan - gave Chyavanprash, ayurvedic concoction to remain healthy
24. Vagbhatt- Sushruta, Charaka, and Vagbhata are considered to be “The Trinity” of Ayurvedic knowledge. He is the writer of the famous ayurvedic texts which are Ashtanga Hrudaya and Astanga Sangraha. There are about 7000 sutras written by him where he explains how to maintain your health and manage diseases.

DIFFERENCE BETWEEN DEVTAS & DEMONS

Ishwar, Bhagwan, Devta

Ishwar- the supreme nirakar Brahm, Brahman, Paramatma who has no shape.

For most people, it's difficult to understand the Nirakar, Nirgun Brahm. To relate to that Supreme being, they believe in Sagun form with whom they can connect with and feel loved & blessed. This being can be Vishnu, Sadashiv or Shakti.

Bhagwan: -When the Brahm comes down to the earth to save the human race , they are called Bhagwan-. Krishna, Ram, Durga, Ganesh and the other forms of Trimurti.

Dev/ Devta

The Gods who rule Devaloka. Devtas are manifestations of certain characters . For example, Indra is a manifestation of war, thunder, lightening. Surya is a manifestation of Sun, solar energy. They defend Devaloka and humans, fight with Asuras and are immortal eg Indra, Surya, Agni, Vayu, Varuna are some major Devas.

Asura, Daitya, Danav, Rakshas, Yaksha

According to Purans, Brahma had 14 children. Among them was Marichi and his son was Kashyap. Kashyap had eight wives who brought all the life forms on the earth. Two of them, Diti and Danu were sisters, and married to Maharishi Kashyapa.

Daityas are the sons of Diti and Danavas- the sons of Danu.

Asuras

These celestial beings were enemies of the Devas and lived in Patala Loka. Notable Asuras include Hiranyakashyapu, Mahishasura, Tarkasura, and Hayagreeva. Asuras are a far greater and more powerful race. They are counterparts to the Devas. Asuras dwell in the Patalas or Underworld realms. Many Asuras were greatly devoted to Gods like Shiva, Shakti, Vishnu, or others. Asura are further divided into Daityas, Danavs and Rakshas.

Daityas

These beings were a race of Asuras who descended from Kashyapa and his wife, Diti, eg Hiranyakashyap, famous Daitya king, Hiranyaksha, Mahishasura, Shumbha-Nishumbha

Danavas

These beings were a part of the Asura race and were the half-brothers of the Devas and Daityas. They are the sons of Danu and Kashyap. They were originally pious and moral, but later became sinful due to pride. Vritrasura, Ekaksha, Kalakeyas are some famous Danavas.

Rakshasas

Rakshasas trace their lineage to Pulastya, one of Brahma's mind-born sons.

These beings were born from the union of Asuras and humans. Rakshasas like Praheti, Heti, Sukesh, and Vidyutkesh were the older generations of Rakshasas. Rakshasas became incredibly corrupt when

the 3 brothers **Malyavan/Malyavant, Mali, and Sumali** became the rulers and heads of the Rakshasa Kula. They attacked Swarga Loka. Vishnu told them to go away to their kingdom. But they refused and attacked Vishnu Instead. Vishnu killed Mali, severely wounded the other 2 brothers, and destroyed their entire army. It was then that the brothers ran away from Swarga. Eg. Bakasur, Ravan was a king- 'Rakshasraj'; Hidimba and Ghatotkach were the pious ones.

Yaksha

These are a class of half-divine beings that are often depicted as the custodians of treasures hidden in the earth and in the roots of trees. They are generally benevolent to humans. The female Yaksha, or Yakshi, is often depicted as a heavily jewelled and extremely attractive.

FAMOUS RISHIS

Atri- A' means without and tri means three. Rishi Atri was devoid of three gates of hell; Kama, Krodh, Lobh. The name Atri means the one who is free from the predominance of the triple impurities namely Sattva, Rajas and Tamas or one in whom the triple entities are in perfect equilibrium. The fifth mandala (divison) of the Rigveda which goes by the name Atrimandala contains 87 hymns which are addressed to various gods such as Indra, Agni, Visvadevas, Maruts, etc. Atri was married to Sati Anasuya and had three children through her namely Dattatreya, Durvasas and Chandra.

The lineage of Atri through his third son Chandra consists of many legendary warriors, kings and deities. The lunar dynasty (Chandravansh) is traced to Atri through his son Chandra and grandson Budha. King Soma was the first king of the lunar dynasty, who ruled over Prayag. Other prominent kings of this dynastic lineage were Purava, Aayu, Nahush, Yathi, Yayati, Samyati, Aayati, Viyati and Kriti.

Yati and Yayati were the children of Nahush. Yayati had two wives, Devayani and Sharmistha. Through them he had five children, Yadu, Turvasu, Drhyu, Anu and Puru. Yadu is the progenitor of the Yadavas, Turvasu was of the Yavanas (Greeks), Drhyu of Bhojas, Anu of Mlecchas and Puru of the Pauravas. They represent the ancient warrior clans who ruled different parts of the land known as Aryavarta, the land of the Aryas. Atri's lineage also consists of the names of a few seers and sages such as Sāvāsva, Avistir, and Pūrvātithi, Mudgala, Uddālaki, Shākalāyani, Chāndogya, etc.

Atharvan-Atharvan is considered Brahma's eldest son and contemporary of Angiras according to Mundaka Upanishad. Atharvan means fire priest, and still a common name in Bharat & Iran. He is also said to have first instituted Yajna (the fire-ritual). He is considered as the father of Agni, the fire-god as he was the one who first brought down fire from heaven and offered soma into it with the recitation of appropriate mantras learnt from his father.

He is the compiler of Atharvaved.

Atharvan. Wife Chitti ~ Dadhichi. Wife Suvarcas ~ Pippalad

Agastya- who destroys crookedness. Agastya was a revered Bharatiya sage of Hinduism. In the Bharatiya tradition, he is a noted recluse and an influential scholar in diverse languages of the Bharatiya subcontinent. He and his wife Lopamudra are the celebrated authors in the Sanskrit text Rigveda and other Vedic literature.

He is revered as one of the Tamil Siddhars in the Shaivite (worshippers of Shiva) tradition, who invented an early grammar of the Tamil language, Agattiyam, playing a pioneering role in the development of Tamraparniyan (originated at the banks of river Tamraparani) medicine and spirituality at Shaiva centers.

His miraculous rebirth follows a Yajna done by gods, Varuna and Mitra, where the celestial apsara, Urvashi appears resulting in their sweat falling into a mud pitcher, which was the womb in which the fetus of Agastya grew. He was born from this jar along with his twin Sage, Vashistha. This gave him the name 'Kumbhayoni,' which literally means 'he whose womb was a mud pot.'

Once, Rishi Agastya paid a visit to Swarglok (heaven). One the way, he found a group of people hanging upside down from a tree. When Rishi Agastya asked the reason, they replied that they were Agastya's ancestors and since Agastya was unmarried and childless, nobody offer them oblations. Rishi Agastya repented for their plight and later married the princess of kingdom of Vidarbha, Lopamudra.

Soon, a son named Dhirdyasu was born, and thus Rishi Agastya's ancestors were relieved from their states and ascended to the heavenly skies. Dhirdyasu is described in the Mahabharata as a boy who learns the Vedas listening to his parents while in the womb and is born into the world reciting the hymns.

Lopamudra also was a great Vedic scholar, and many hymns from the Rig Veda are given by her.

Sage Agastya ran a Vedic school (gurukul), as evidenced by hymn 1.179 of the Rigveda, which credits its author to be his wife Lopamudra and his students.

A Rigvedic theme, famous in Hinduism literature, is a discussion between his wife Lopamudra and him about the human life to choose between the solitary monastic pursuit of spirituality versus the responsibility of a householder's life and raising a family. Agastya argues that there are many ways to happiness and liberation, while Lopamudra presents her arguments about the nature of life, time, and the possibility of both.

Sage Agastya is mentioned in the Hindu epic Ramayana in several chapters, with his hermitage described to be on the banks of river Godavari.

In the epic Mahabharat, he is described as a Sage with enormous powers of ingestion and digestion. Agastya, stops the Vindhya mountains from growing and lowers them, and he also kills the demons Vatapi and Ilvala.

In the Vana Parv of Mahabharat, there is the story of a war between Indra and Vritra, where all the demons hid in the sea. When gods requested Rishi Agastya for help, he swallows the ocean, thereby revealing all the demons to the gods.

According to the Skanda Purana, the whole world visited the Himalayas when Shiva was about to wed Parvati. This caused the earth to tilt to one side. Shiva then requested Agastya to go to the southern region to restore the equilibrium. Thus, Agastya migrated south at Shiva's behest.

Sage Agastya is considered the Guru (master) of all Siddhar, and the Siddha medicine system is believed to have been handed over to him by Murugan(Kartikkeya), the son of the Hindu God Shiva and Goddess Parvathi. Siddhas are the followers of Shiva. Agastya is the first Siddha. His disciples and other Siddhas contributed thousands of texts on Siddha literature, including medicine, and were the propounders of this medical system in this world.

The great Sage Agastya has written several ancient texts and scriptures, including Agastya Gita mentioned in Varaha Purana, Agastya Samhita, a treatise on traditional medicine mentioned in Skanda Purana, Dvaidha-Nirnaya Tantra text. He also wrote on Astrology and Nadi Jyotisyam (Predictions using the print of thumb finger).

Agastya is attributed to be the author of Agastimata, a pre-10th century treatise about gems and diamonds, with chapters on the origins, qualities, testing, and making jewelry from them. Several other Sanskrit texts on gems and lapidary are also credited to Agastya in the Bharatiya traditions.

He invented the early grammar of the Tamil language, Agattiyam, playing a pioneering role in the development of Tamraparniyan (meaning created on the banks of river Tamraparani) medicine, and spirituality.

Agastya is also considered as one of the foremost exponents of the martial art Kalaripayattu, the mother of most of the oriental martial art forms

Rishi Agastya produced electricity- its generation requires an earthen pitcher, copperplate, copper sulfate, wet sawdust, and mercury amalgamated zinc sheet. The same principles scientists have used, to produce current.

Facing east, he penanced upon a rock at Kanyakumari immediately after the beginning of the Kali Yuga. Tradition holds that his final resting place is in Agastyarkoodam in Thiruvananthapuram.

The popular prayer to the Supreme Goddess, the Lalita Sahasranama, the thousand names of the Goddess, was composed by Sage Agastya. Another composition by Agastya is Saraswati Stotram, in praise of the Goddess of Learning. Agastya's prayer to Hanuman is called the Ekadasa Mukha Hanumantha Kavacham. Agastya taught Shri Ram the 'Aditya Hridayam'- a stotra in praise of the Sun God. He composed Shakti Tantras, in which he codified 64 types of external energies. He taught Nila, who was cursed by hermits, 'Sammohan Bhairava mantra' for liberation.

Ashtavakra: Kahoda was the best among other disciples of Sage Uddalaka. Uddalaka was so pleased with him for his dedication and devotion, that he had his daughter Sujata married to him. Sujata, eventually got pregnant, and with the desire of wanting the intellectual and spiritual growth of her child in the womb she began to sit in the classes taught by Uddalaka and Kahoda, listening to their chanting of Mantras. Sujata used to attend classes with such rapt attention that the babe in her womb heard and grew aware of each and every syllable of the Vedas so perfectly that he would get restless in the womb if someone makes a mistake in the recitation. Thus the babe in the womb of Sujata started growing with a perfect knowledge of the Vedas. It was one day, as Kahoda recited the Vedas, the child in the womb squirmed in distress. Sujata informed Kahoda that he had pronounced the syllable wrongly as indicated by the child in the womb. This happened on eight occasions. Kahoda perceived this as arrogance on the part of one who is yet to manifest itself in the world and he cursed the foetus with eight deformities. So, when the baby was born, it had eight bends, was crooked in eight places and was named Ashtavakra (the one with eight curves).

Sujata wanted more money to raise her child the best. So, around the time Ashtavakra was born, she asked her husband to go to king Janak who was then preparing for a Yajna (fire worship ceremony) hoping that the ceremony will bring money to the family.

When Kahoda approached Janak, the king received him respectfully but informed with regret that he is unable to perform the Yajna which he decided several years back as Sage Bandi had arrived asking to start the Yagna only after he is defeated in a debate with the sages participating in the Yagna. Also, the sages, if defeated, will be drowned. So far, he has already many learned sages.

Kahoda agreed to debate with Bandi but was defeated and drowned in the nearby river. Ashtavakra, after his birth was brought up by Uddalaka and his disciples and within a short time mastered everything that was expected of a 'Brahmin'. Uddalaka and his disciples took pains to see that Ashtavakra was always kept in the dark about the fate of his father. However, Ashtavakra came to know the truth when his young uncle, Shwetaketu inadvertently, blurted out that the person who Ashtavakra thought was his father, was, in fact, not his father. Ashtavakra then demanded the truth from his mother and decided to confront Bandi and defeat him in an argument.

Ashtavakra then made his way to the King's palace and presented himself as a challenger. The kind-hearted King could not bear the thought of someone so young losing to Bandi and meeting the same fate as countless other Brahmins and tried to dissuade the young boy. Ashtavakra was, however adamant, and after an initial test, Janaka decided to let him face Bandi. Ashtavakra won the argument and demanded that Bandi restore to life all the sages and Brahmins he had forced to be drowned. One of the conditions of the contest was that if Bandi loses, he would grant any wish of his vanquisher.

Bandi was supposedly the son of Varuna - the of all water bodies - and was sent incognito to land to get riches, or sages, to conduct a ritual that his father wanted to perform. By the time Ashtavakra met Bandi, Varuna's ritual was also complete, and he had rewarded all the sages and Brahmins and so when Bandi was defeated, he revealed his true identity and the reason behind the 'drowning' of his victims. At Bandi's request, Varuna bade the sages and Brahmins farewell and brought them to surface. Kahoda was extremely pleased to see his son. Bandi then asked Ashtavakra to take a dip in the river, with the blessings of his father, Varuna, which would make him normal. Ashtavakra did as he was told and came out of the river as a handsome young man. Janak rewarded Ashtavakra and Kahoda. They went back to their hermitage to be united with the family. Uddalaka was so happy to see his worthy grandson surpassing in knowledge to all the great sages of his time. Sujata rejoiced at seeing her handsome son and the husband.

Ashtavakra wanted to marry Suprabha who was the daughter of Rishi Vadanya. She was extremely beautiful. When Vadanya was approached for this, he first wanted to test the intensity of Ashtavakra's love towards Suprabha. Ashtavakra accepted all the conditions of Sage Vadanya, and was successful in doing all that the sage wanted. Sage Vadanya was very happy with Ashtavakra and gave him his daughter in marriage.

Later Ashtavakra grew into a spiritually advanced Rishi and realized Atman.

Dadhichi: Dadhichi's mother was 'Chitti' and father was 'Atharva', who gave Atharva Ved. According to Purana, he was the son of Atharva born from the womb of Shanti, the daughter of sage Kardam. Dadhichi was the ultimate ascetic, renowned Maharshi of ancient times and is great devotee of Shiv.

Dadhichi is believed to have written the "Nārāyaṇa Kavacham", a famous hymn in southern Bharat, sung for power and peace.

Indra, the King of the Devas, was once driven out of devaloka by an asura named Vritra. The asura was the recipient of a boon whereby he could not be killed by any weapon that was known till the date of his receiving the boon and that no weapon made of wood or metal could harm him. Indra and his devas waged war on Vritra and the asuras and were defeated. The devas went to seek the aid of Vishnu as Vritra took away all the water leaving all species to die. Vishnu revealed to Indra that only a weapon made from the thunder-containing bones of the sage Dadhichi could kill Vritra. Sage Dadhichi's bones had extraordinary powers which could be used for making a weapon to defeat the demon. Indra and Devs went to Dadhichi and asked for his bones to kill Vritrasur. Sage Dadhichi sacrificed his life, being a nobleman, and gave his bones to make the weapon required for defeating the demon. Devas made Vajrayudha (Thunderbolt) from his spine and made numerous other weapons. This weapon was then used to kill the asura, allowing Indra to reclaim his place as the king of devaloka and releasing the water for all living beings.

Dirghatamas: purohit or chief priest of King Bharat (Aitareya Brahmana VIII.23), one of the earliest kings of the land, **on whose name our country was called as Bharat.**

Dirghatamas was one of the Angirasa Rishis, the oldest of the Rishi families, and was the brother of Rishi Bharadwaj, the seer of the sixth Mandal of the Rig Veda. He is also the chief predecessor of the Gautam family of Rishis that includes Kakshivan, Gautam, Nodhas and Vamadeva (seer of the fourth Mandala of the Rig Veda). Vamadev along with Dirghatamas account for almost 150 of the 1000 hymns of the Rig Veda. His own verses occur frequently in many Vedic texts, a few even in the Upanishads.

The hymns of Dirghatamas speak clearly of a zodiac of 360 degrees, divided in various ways, including by three, six and twelve, as well as related numbers of five and seven.

Durvasa: The son of Atri and Anasuya, he was known for his extremely short temper.

Atri desired a son and so, did severe Tapa to appease the Supreme Being. He wanted his son to be just like the Divine One. Pleased with his Tapa, Brahma, Vishnu and Shiva blessed the sage with the sons, who would display aspects of all them. Soon, Anasuya gave birth to Soma (Brahma's incarnation), Dattatreya (Vishnu's incarnation) and Durvasa (Shiva's incarnation). That is how Durvasa was born to the couple.

Sage Durvasa considered Shiva's incarnation, used to get furious easily.

Sage Durvasa with his powers had made Surya/sun halt. Durvasa cursed Indra to be lost of all wealth resulting in Samudra Manthan, cursed his wife Kandali to be reduced to a heap of dust, cursed Shakuntala who was lost in thoughts of Dushyant, threatened Lakshman to curse Ayodhya if he didn't allow him to meet Ram resulting in Lakshman drowning himself in River Saryu. He cursed Shri Krishna that his feet will not remain impenetrable resulting in an arrow shot by a hunter which hurt his leg, cursed all the people in Badrinath listening to Nar-Narayan story.

He also gave a boon to Kunti to call any Devta, went to Pandavas along with many other sages to have food, whereas Pandavas had nothing left to eat while in exile. During this time, Shri Krishna came to

their rescue by eating a grain of rice from the divine bowl of Draupadi, making sages feel satiated and they moved on.

Dattatreya: He is the representative of the Absolute Reality that is beyond, and yet contains within It, the principles of creation, preservation and destruction. The teachings of Dattatreya have emphasised being natural, being unencumbered by ritual, tradition, and denomination, loving nature, and leading a life of ahimsa (non-violence) towards all creatures. The ultimate goal of the Dattatreya Tradition is the dissolution of the small self, the ego-self, and the absorption into the Divine essence of Reality Itself.

Once a king named Yadu asked Dattatreya about his Guru. Dattatreya replied that he has 24 Gurus from whom he got all the knowledge.

They are:

- | | | | |
|--------------------------|--------------------|------------|------------|
| 1. Earth | 2. Water | 3. Air | 4. Fire |
| 5. Sky | 6. Moon | 7. Sun | 8. Pigeon |
| 9. Python | 10. Ocean | 11. Moth | 12. Bee |
| 13. Honey-gatherer | 14. Elephant | 15. Deer | 16. Fish |
| 17. Dancing-girl Pingala | 18. Raven | 19. Child | 20. Maiden |
| 21. Serpent | 22. An arrow-maker | 23. Spider | 24. Beetle |

From earth, we can learn patience.

From air, we can learn non-attachment. From water, we can learn purity.

From fire, we can learn penance.

From the sky, we can learn to be all-pervading yet detached.

From the moon, we can learn manifestation changes (waxes and wanes) though the inner core remains same just as the soul or Self.

From the sun, we can learn multiple types of manifestation (in bodies) from the same source (Brahman).

From the pigeon, we can learn that attachment is the cause of bondage. From the python, we can learn contentment.

From the sea, we can learn to be unmoved amidst many temptations and difficulties. From the moth, we can learn to control the senses and fix the mind on the Self.

From the honeybee, we can learn to fulfill our needs without over—burdening anyone. From the elephant, we can learn to overcome lust.

From the honey thief, we can learn not to hoard.

From the deer, we can learn not to let our centeredness sway due to lewd music. From the fish, we can learn to overcome greed for food.

From the prostitute, we can learn to abandon hope to gain contentment.

From the bird, we can learn that pursuit of sensual pleasures leads to misery and dropping the pursuit leads to contentment.

From the child, we can learn to be cheerful and worry-free due to faith in your Guru.

From the young girl, we can learn that being in solitude is ideal for an ascetic.

From an arrow maker, we can learn to be one-pointed and intensely focussed on our work. From a serpent, we can learn that an ascetic must not build his own home.

From the spider, we can learn from not to get entangled in our own thoughts and ideas by abandoning worldly thoughts and contemplating on Brahman only.

From the wasp, we can learn that man becomes and takes the form what he thinks constantly about. So we can attain Moksha or liberation if we focus on our Self.

Gautam: There is a hymn called Bhadra in the Sama Veda which is ascribed to Gautama Maharishi. According to the Ramayana, Gautama's eldest son with Ahalya is Shatananda. But according to the Adi Parva of Mahabharata, he had two sons named Sharadvana and Cirakari. Sharadvana was also known as Gautama, hence his children Kripa and Kripa were called Gautama and Gautami respectively.

Jamdagani: means whose digestive fire (Jatharagni) is so strong that no germ can survive inside his stomach. The father of Parshurama, the sixth Visnu incarnation among the Dashavatara of Vishnu, Jamadagni was a descendant of Sage Bhrigu.

Jamadagni had five children with his wife Renuka, and Parashuram was the youngest among them.

Rishi Jamadagni's wife Renuka was the embodiment of great chastity. Such was her devotion to her husband that daily, she fetched water from the river in a pot made of unbaked clay, which held together only by the power of her devotion to Jamadagni.

One day while at the river, a group of Gandharvas passed overhead in their sky chariot. Filled with desire for only a moment, the unbaked pot that she was carrying dissolved into the river. Afraid to go back to her husband, she waited at the river bank. Waiting for his wife's return, Jamdagani used his yogic powers to see what had taken place with his wife, and he became very angry. One by one, the rishi ordered each of his sons to take up their weapon and end their mother's life. None would do the horrible task except Parashuram, who picked his axe and beheaded her.

Being pleased with his son's dutiful nature, Jamdagani Rishi offered two boons to Parshurama. The son first asked that his mother's head be restored and she be brought back to life; and second, that his brothers, who had been turned to stone by their father upon refusing his orders, also be returned to their bodies. All the family members were restored to life without having memory of experiencing their deaths. In this way, Jamadagni and Parashuram demonstrated dharma between son and father.

Once, Jamadagni was visited by the Haihaya king, Kartavirya Arjuna (also known as Sahasrabahu, as he is said to have innumerable hands), who was hungry after getting lost during hunting and came to Sage Jamadagni ashram, where he was served a feast using a divine cow, Kamdhenu. When the king saw the cow, he forcefully took the cow with him. When Parshuram, who had gone out of the ashram, came to know of the whole incident, he went to the king to get the cow back. But there he had to face a large army of the king to kill him. Enraged, Parashuram killed the king in turn. Parashuram then went on a campaign of killing the kshatriyas, who had become evil, all across Bharat and wiped away their twenty-one generations.

In the Buddhist text, Vinaya Pitaka, Mahavagga (I.245), the Buddha offers respects to Jamadagni by declaring that the Vedas in their true form were revealed to the original Vedic rishis, including Jamadagni.

Janmajeya: was the son of King Parikshit and Queen Madravati according to the Mahabharata . He was the grandson of great warrior Abhimanyu and the great-grandson of Arjuna, the valiant warrior hero of the Mahābhārata. He wanted to exterminate the race of nag(snake)Takshaka who was responsible for the death of his father Parikshit by performing a great Sarpa Satra – a Yajna that would destroy all living serpents. At that time, a learned sage named Astika, came and interfered. His mother Manasa was a Naga and his father a Brahmin. Janamejaya had to listen to the words of the learned Astika and he then set the then-imprisoned Takshaka free.

The Yajna was held on the banks of the river Arind at Bardan, now known as Parham, a corrupt form of Parikshitgarh, in Mainpuri district of Uttar Pradesh.

His disciples were Charak and Yagnavalkya.

Katyayan: Katyayana is recognized for his two major works which were 'Varttika' and 'Sulbasutras'. Varttika is the most important book for grammar and vyakarana and this book is based on Panini's grammar's explanation.

Shaunak: According to the Vedic texts, Shaunaka Rishi's full name was Indrotdaivaya Shaunaka. He was a Vedic teacher and the son of the sage Bhṛiguvaṁshi Shunak. Shaunaka Rishi was running a Gurukul having ten thousand students and he was honoured as kulapati (chancellor). It is said that before him no other sage had received such an honour. The famous Āśvalāyanācārya was Śaunaka's disciple. Ācāryas like Kātyāyana, Patañjali and Vyāsa belonged to his class.

Śaunaka's real name was "Gr̥tsamada". It was because he was the son of Śunaka that he got the name "Śaunaka". Kātyāyana, was the disciple of Āśvalāyan.

Sage Shaunaka, is well known for being an active listener of the Mahabharata which was narrated by Sage Suta. Sage Suta, is well known for narrating most of the Puranas and the Mahabharata, in the forest of Naimish called Naimisharanya in Puranas

Kanva: Born in the dynasty of Brahma's son Kashyapa, Kanva is also known as Kashyap. As per Mahabharata Shantiparva Chapter 208 verse 27, Kanva's father was Medhadhiti. Kanva built a hermitage on the banks of river Malini and lived there with many students. He was the father of Shakuntala who did 'Gandharva vivah' with king Dushyant.

Kanva was among the sages who arrived from the east to visit Ram after his return from Lanka. Vasishta, Atri, Vishwamitra, Gautama, Jamadagni, Bharadwaja, Sanakas, Sharabhanga, Durvasa, Matanga, Vibhandaka, Tumburu were the others in this group.

The Rigveda has 10 mandalas. Mandalas 2-7 have been created in separate rishikulas, seen by 2 – Bhargava, 3 – Vishwamitra, 4 – Vamadeva, 5- Atri, 6 – Bharadwaja, 7 – Vasishta. The 8th mandala and 50 suktas of the 1st mandala have been made by Kanva's kula.

Markandey: Sage Mrikandu and his wife, Marudhvathi, lived an ascetic life in a forest but were childless for a long time. Mrikandu performed intense tapas for several years. Shiva appeared before him, pleased by his devotion.

Shiva offered Mrikandu a boon, asking if he desired a virtuous, wise, and pious son who would live up to sixteen years, or a dull-witted, evil-natured son who would live long. Without hesitation, Mrikandu chose the short-lived but virtuous son. Shiva granted his request and departed.

In due course, Marudhvathi gave birth to a son named Markandeya. The parents were extremely happy with their son, who, even as a child, mastered all the Vedas and Shastras. He was liked by all for his pleasing ways and mastered his studies quickly. When Markandeya was twelve, his parents performed his Upanayana, initiating him into chanting the mystic Gayatri Mantra.

As Markandeya's sixteenth year approached, seeing his parents unable to hide their grief, eventually Markandeya came to know about his fate. The boy consoled his parents, stating that death was as natural as birth and should not be dreaded.

Determined to win over death, Markandeya sought his parent's blessings to perform severe penance to please Shiva. His parents blessed him, and he began his penance with great devotion. On the day of his sixteenth year, Yama, the God of Death, came to take his life. As Yama threw his noose to capture Markandeya's soul, it encircled both Markandeya and the Shiva Linga, he was worshipping.

At that moment, the Shiva Linga split into two, and Shiva emerged with his Trishul, asking Yama to leave Markandeya. Pleased with Markandeya's devotion, Shiva blessed him with immortality, ensuring that he would never age, remain virtuous, and be famous until the end of the world. Markandeya came to be known as Mrityunjaya (Conqueror of Death) and Kalakala (the one who conquered time). To this day, Markandeya is revered as one of the immortals, known for his youthful and saintly appearance due to his yogic powers.

Markandeya Purana, the sacred Sanskrit text of Hinduism, is named after Sage Markandeya. It is famous for including the Devi Mahatmya within it, the oldest known treatise on Devi (Goddess) as the Supreme Truth and Creator Of the Universe.

Patanjali: He is known as the father of modern yoga. He did not invent yoga. Yoga was already there in various forms, which he assimilated into a system. Shiva, the Adiyogi or first yogi, transmitted yoga to the Sapta Rishis or the seven sages many thousands of years ago. These became the seven basic forms of yoga. Sage Patanjali, a scholar of the Hindu belief system, elaborated the transcendental aspects of yogic theory in his Yoga Sutras. His work, the Yoga Sutras, is widely known for the information they contain about asanas, or the physical component of yoga centred around postures.

Sutji: Ugasrava Sauti or Sutji is the disciple of the great Ved Vyas. He is the closest and favourite of Ved Vyas. He gained all the knowledge of universe from Ved Vyas himself. Ved Vyas is the incarnation of Shiva. Sutji appears in several Puranas, including the Bhagavata Purana and the Padma Purana, where he plays a crucial role in the transmission of knowledge and wisdom.

Ved Vyas composed the Bhagavat Puran and passed it on to his son Shukadev for the welfare of the souls. Shukadevji further narrated it to King Parikshit. When Shree Shukadev Maharaj was narrating the Bhagavat Puran to Parikshit, Sutji was also sitting there. It was there that Sutji studied it with his gracious permission.

Once sages asked Sutji on the meaning of salvation from the bondages of life. Sutji explains that there are eight bondages on the soul.

According to Sutji, the eight bondages are nature, intelligence, ego and the five senses - sound, touch, appearance, taste and smell.

The soul or 'jeeva' is liberated only after becoming free from these eight bondages. Sutji further elaborates that the action performed by a person due to these eight bondages are called karma which determines his fate.

To be free from these bondages, Sutji recommends worshipping the Shiva Linga among which the Parthiva Linga is considered the most supreme.

Vasishtha: One of the seven stars in the constellation Saptarishi is the sage Vasishtha. Vasishtha refers to an unparalleled brightness. He has overcome all negative traits like desire, rage, meekness, pride, and anger, as evidenced by his name. He was regarded as Harischandra's and Ram's teacher. He was one of the authors of the ancient and significant Hindu scripture known as the "Rig Veda."

Vaishampayan: The Mahabharat epic was first recited at Takshashila by the sage Vaisampayana, a disciple of Vyasa, to the King Janamejaya who was the great-grandson of the Pandava prince Arjuna. Vyas regarded to have taught the Mahabharata of 100,000 verses to Vaishampayana. The Ashvalayana Grihya Sutra mentions him as Mahabharatacharya. He is regarded to have recited the epic to King Janamejaya at his sarpa satra (snake sacrifice in fire ritual). The Harivamsha Purana was also recited by Vaishampayan. Vaishampayana is a renowned sage who is stated to be the original teacher of the Shri Krishna Yajur-Veda: A great man of intellect Vaisampāyana, divided the tree of Yajurveda into seven branches. The Ashvalayana Grihya Sutra mentions him as Mahabharatacharya.

Ved Vyas: the avatar of God, was born from Satyawati's womb by Maharishi Parashar. One day, bathed in the holy water of the Saraswati River at sunrise, he sits alone. Possessing knowledge of the past and future, he saw that with the decline of dharma in each Yug, the power of the human intellect falters, and lifespans shrink. In this situation, contemplating everyone's welfare, he divides the Ved into four parts. He then composed the Itihasas and Puranas, also known as the fifth Ved. Further, he made his disciples graduates of:

- Rigveda- Pail
- Samaveda- Jaimini
- Yajurveda- Vaishampayana
- Atharvaveda- Sumantu Muni
- Itihasas and Puranas- Romaharsha

All these sages further divided their respective branches, creating many branches of the Vedas.

Vishwamitra: The name "Vishwamitra" means "friend of the world". He is a renowned sage who was initially a King named Kaushika of Amavasyu dynasty. Later, after doing Tapasya (meditation), he was given the title of "Rajarshi". He is revered in other Southeast Asian cultures as well. There, he is referred by other names such as Swamil (in Thailand), Bodaw (in Myanmar), Wiswamitra (in Java) and Nila Purba (in Malaysia).

Sage Atri's son was Chandra. Chandra and Tara's son was Buddh. Buddh's and Ila's son was Pururavas, the founder of Chandravansha (dynasty). He was given the name as he was born on Mount Puru. Pururavas married Urvashi apsara and they had six sons. The names of these sons are: Ayu (or Ayus), Amavas, Vishvayu, Shrutayu, Shatayu (or Satayu), and Dridhayu. Nahusha, the son of Ayu

and Prabha, is a well-known name in the Rigveda. According to the Padma Purana, Nahusha married Ashokasundari, the daughter of Shiva and Parvati; she is said to have given birth to Yayati and a hundred daughters of Nahusha.

Amavasū was the youngest son of Pururavas and Urvashi. He was also called Vijaya. His son was Kanyakubja who is regarded as the founder of Kannauj. Among his descendants was a king Kush, father of Rajarshi Kushnabh (Kaushik). Kushnabh married Ghritachi of the Purukutsa dynasty who were the descendants of the Ikshvaku king Trasadasyu. Kushnabh and Ghritachi's son was Gadhi (an incarnation of Indra) whose son was Vishwamitra. Kushnabh also had a daughter named Satyavati who became wife of King Rchika.

Vishwamitra was one of the most prominent Rishis. He is stated to have written most of the Mandala 3 of the Rigveda, including the Gayatri Mantra (3.62.10). The Puranas mention that only 24 rishis since antiquity have understood the whole meaning and thus wielding the whole power of — the Gayatri Mantra. Vishwamitra is supposed to have been the first, and Yajnavalkya the last. When Dasrajayagya happened, he was the purohita of the Bharata tribal king Sudās, until he was replaced by Vasiṣṭha. He aided the Bharatas in crossing the Vipāśā(Beas) and Śutudrī (Sutlej) rivers.

The famous Gayā teerth in present day Bihar was founded by Gayā, the son of Amrutyasa (brother of Gaadhi) and cousin of Vishwamitra.

When the Devas denied taking Trishanku to heaven, angered Vishwamitra commenced the creation of another Universe (including another Brahma) for him. Trishanku, however, did not fully transcend through Trishanku Svarga and remained fixed and upside-down in the sky and was transformed into a constellation, now known as Crux.

He again started the Tapa. Indra sent Rambha to destroy Vishwamitra's tapa as he thought he might be dethroned by Vishwamitra. But she was cursed by Vishwamitra to be a statue for Ten Thousand years, for her intention of disturbing him. Indra then sent Menaka and once when Vishwamitra saw Menaka, the Apsara sent by Indra, he spent ten years with her and also had a daughter who was named Shakuntala. He again started a severe tapa and became Maharshi.

Vishwamitra would constantly have clashes with sage Vasishtha. He realized that spiritual power is always far greater than physical might. Seeking to become a greater spiritual force than Vasishtha, he renounced his kingdom and took up sannyasa.

The journey from King Kaushika to Raja-rishi to Mah-rishi to Brahma-rishi had lots of hardships. Mahamrityunjaya mantra from Yajurveda 'triambakam yajamahe', was authored by Vishwamitra. He has also composed 29 suktas of Atharva Veda. He created a parallel heaven for Trishanku. He ended up as Brahma-rishi having lost and regained his yogic powers multiple times. Maharshi Sushrut was the son of Vishwamitra and grandson of King Gadi. He was one of the seven disciples of Dhanvantari (emerged during Samudra Manthan)

Yajnavalkya - Yajnavalkya was a pupil of sage Vaisampayana and the compiler of the Shukla Yajurveda Samhita. Yajnavalkya was the pupil of Uddālaka Āruṇi, whom he defeated in debate. Yajnavalkya would defeat the philosophers from all around the country. Once in a debate with Gargi, a female scholar and one of the nine gems of King Janaka's court, he defeated Gargi.

Yajnavalkya was then accepted as the most superior brahmin. Yajnavalkya had two wives, Maitreyi and Katyayani. Maitreyi, as opposed to Katyayani, was more intrigued to gain spiritual knowledge. Maitreyi was known as a brahmavadini, the one with the knowledge of Brahman. Katyayani is merely described as "striprajna," which translates to "woman-like knowledge;"

PANCHKANYA

In Hindu Dharma, the world started with Adi Shakti, the one true pure form of energy and femininity has evolved since. Hindus worship Shakti, and Devi and idolize her presence. One such group of five amazing femininity is the Panchakanya.

"अहल्या, द्रौपदी, कुं ती, तारा, मंदोदरी तथा पञ्चकन्या स्मरणं नित्यं महापातक नाशकं "

"Ahalya Draupadi Kunti Tara Mandodari tatha panchakanya svaranityam mahapataka nashaka"

Which means- Always remembering the five virgins Ahalya, Draupadi, Kunti, Tara and Mandodari destroys the greatest sins.

It is believed that nature manifests itself in five forms: earth, water, fire, wind, and sky. Each Kanya is born of one of these elements, and these five elements of nature formed the essence of their characters.

Panchkanyas were born in Kanya Rashi or the constellation of Virgo. The word 'Kanya' is used to denote a woman who is a 'Virgin'. So these 5 women are considered as the group of Eternal Virgins despite being married. Virgin women were supposed to have the great powers of 'Tapa'. So all these women, despite being married had the power of Tapa.

Panchakanya is the one who owned their virginity and could revive it. This power owing to their Chastity among them was majorly the result of leading a pious, rightful, and responsible life in thought, in word, and in action.

- Ahilya - Brahma created Ahilya out of the water as the most beautiful woman who later became Maharshi Gautam's wife.
- Tara - came out during Samudra Manthan (churning of the Milky Ocean) and was the daughter of physician Sushen and wife of Vaanar King Bali
- Mandodari - was the daughter of Apsara (Nymph) Hema of Swarg (heaven) Mayasur rescued this beautiful girl child from the well who later became Ravan's wife
- Draupadi - was the one born from a Yajna or fire. She was the daughter of King Drupad and married the five Pandavs
- Kunti - was the daughter of King Shursen and she was married to Pandu, father of Pandavs

SHRI RAM AND SHRI KRISHNA LINEAGE

Shri Ram was born in the 81st generation of Ikshvaku Dynasty of Surya Vansh or Solar Dynasty. Ikshvaku dynasty was a dynasty founded by the legendary king Ikshvaku.

22 out of 24 Jain Tirthankara belonged to this dynasty. Rishabha (Ikshvaku) is present in both Hindu as well as Jain texts. His name originally was Rishabha.

When he was exhausted while hunting and was about to die, a Rishi saved him by providing Ikshu (Sugar cane) Rasa (Juice).

His voice became sweet and he was named Ikshvaku (one who speaks sweetly).

He ruled the Kingdom of Kosala in ancient Bharat. According to the Vishnu Purana, he had a hundred sons, among whom the eldest was Vikukshi.

Ikshvaku's another son, named Nimi, founded the Videha dynasty.

Ikshvaku vansh:

1. Vivasvan (vaivashvat) Manu (wife: - Shraddha)
2. Ikshvaku (originally Rishabha, became Ikshvaku after surviving with SugarCane juice)
3. Bharat: He is the son of King Rishabh and founder of the Sun Dynasty (Suryavansha). Among the hundred sons of king Ikshvaku, Bharat is the eldest one. Because he has very broad chest of a warrior, he was also called as Kushki.
4. Vikukshi (Shashad) (he who eats the meat of a rabbit so he named Shashad) (contemporary to King Pururava who was founder of Chandravansh)
5. Baan (contemporary to 2nd Chandravanshi King Aayu and Vijaya-1)
6. Kakutstha (Puranjaya or Indrahomi or Indravahu) ruled 10,900 years (contemporary to 2nd Chandravanshi King Aayu)
7. Anena (Anaranya or Suyodhana) (contemporary to 3rd Chandravanshi King Nahusha)
8. Prithu (contemporary to 4th Chandravanshi King Yayati and demon king Vrushaparva)
9. Vishvarandhri (Vishvagandhi or Vishvamshaha) (contemporary to 5th Chandravanshi King Yadu, Puru, Suhotra)
10. Chandra (Aayu in Agni Puran or Indu in Matsya Puran or Aadra in Vishnu Puran)
11. Yuvanashva-1
12. Shashvat (Shravant of Vishnu Puran, Harivansh Puran, Agni Puran) who built town Saraswati.
13. Brihadasva
14. Kuvalayasva (or) Dubdhunara (21,000 sons and Here time duration is many years long)
15. Dridhasva, Kapilashva, Bhadrashva (Dand in Agni Puran and Matsya Puran, Chandrashva in Vishnu Puran and Harivansh Puran)
16. Pramod

17. Haryasva (Pramodak or Vayarshvah in Vishnu Puran)
18. Nikumbha
19. Baharnashva (Shanhatashva in Agni Puran, Matsya Puran, Harivasnh Puran)
20. Giritashva
21. Krisasva (Akrutashva in Agni Puran, Matsya Puran)
22. Prasenajit-1 (Seinya Jeet, Ranashva in Agni Puran)
23. Yuvanashva(2) (who was contemporary to Chandravanshi King Gandhara who was founder of Gandhara Kingdom, Shakuni born 95 generation after King Gandhara)
24. Mandhata (Chakravarti Samrat) killed by Lavanasura in Mathura (He defeated Ravana). Conquered the Druhyus and vanquished Nriga, Marutta, Jaya, Suna, Sudhanwan, Angara, Gaya and Asita.
25. Purukutsha (married with Narmada), Ambarisha (adopted by Yuvanashva), Muchukunda (helped Deva in Deva-Asur War and later in he killed Kaal Yavan using fire from his eyes at the time of Shri Krishna Avatara at the end of Dwaparayuga) (Contemporary to Chandravanshi King Sibi who was founder of Keikaya and Madra Kingdom)
26. Vasud
27. Trayadasyu (Sambhuti in Agni Puran)
28. Sambhrut (Vishnu Puran, Agni Puran, Matsya Puran)
29. Anaranya-1 (killed by Ravana, Anaranya cursed Ravana that one day one king of Ikshvaku line age will kill Ravana and Shri Ram killed Ravana)
30. Pushadashva (Vishnu Purana)
31. Haryasva(2)
32. Sumana (Sudhanava in Harivansh Purana, Vasuman, Paarjitar)
33. Tridhanva (Vishvamitra was chief minister in his court, contemporary to God Parshurama)
34. Thrayaruni
35. Tribandhan
36. Satyavrata (or) Trishanku (for whom Viswamitra created a separate heaven)
37. Harishchandra (contemporary to Sahastra Bahu Kritvirya Arjuna)
38. Rohit (Rohitashva) (Kanyakubj or Kannauj dynasty ended during Rohitashva's reigned)
39. Harita (Haritashva) (Contemporary to Chandravanshi King Dushyant)
40. Champ (Chunchu) (Contemporary of Chakravarti Samrat Bharata of Chandravansh in line age of Puru)
41. Sudeva (Chakshu in Vishnu Purana, Agni Purana)
42. Vijaya (Valmiki lived during reign of this king – contemporary to Maharshi Bharadwaja)
43. Bharuk (Ruruk in Vishnu Purana, Harivansh Purana)
44. Pratapendra
45. Bruk
46. Sushandhi
47. Bahuk
48. Bharat (mentioned in Ramayana)

49. Asit (Kalinda in Ramayana)
50. Sagara (Chakravartin Samrat) he ended Haihaya Dynasty. Sagara had many sons but only Asamanjash lived (Contemporary to Chandravanshi King Hasti who founded Hastinapura)
51. Asamanjash (Contemporary to Chandravanshi King Ajaamidha who was founder of Panchala Kingdom)
52. Anshumaan
53. Dilipa
54. Bhagiratha (He brought Ganga to earth)
55. Srutha
56. Kukutsa-2
57. Raghu-1
58. Naabh (Nabag in Matsya Puran, Harivansh Puran)
59. Ambarisha (2) (great devotee of God Maha Vishnu)
60. Sindhudwip
61. Avyutayu (Shrutayu in Agni Puran)
62. Rituparna
63. Sarvakama (Sarvakarma, Aartupani in Harivansha Puran)
64. Sudas (contemporary to King Kuru-1 of Chandravansh who founded Magadha Kingdom)
65. Saudas (or) Kalmashapad (married to Madayanti)
66. Ashmak
67. Mulaka (Naari Kavacha) (Contemporary to Yadava King Shakuni who was father of Rakshas "Bhasmasur")
68. Dashrath-1
69. Adwil (Ilabil in Vishnu Puran)
70. Vishvamashaha
71. Anaranya-2
72. Nidhn
73. Animitra
74. Dululaha (Harivansh Puran)
75. Krisakarma
76. Dilipa (2) (or) Khatvanga (in Vishnu Puran, Harivansh Puran)
77. Deerghabahu
78. Raghu-2 (Chakravartin Samrat) (Raghuvansh, Raghava, Raghuvir word use in honour of this king)
79. Aja (married to Indumati)
80. Dasharath, to whom Shri Ram was born as mentioned in Valmiki Ramayana (contemporary to Videha King Siradwaj (Janaka-2) father of Seeta)
81. SHRI RAM ruled for many years as mentioned in Valmiki Ramayana, Vishnu Purana, Harivansha Puran, Agni Puran, Srimad Bhagavat Maha Puran (Lakshmana, Bharata and Shatrughna are his siblings and they are also avatar of Vishnu)

82. In the Ramayana, we find that, Lava and Kusha were the sons of Shri Ram. 82.Kusha
83. Atithi
84. Nishad
85. Nala (who went to tirunallar to get rid of his dwarfness)
86. Nabhas
87. Pundarika
88. Kshemadhanvan
89. Devanika
90. Ahinagu
91. Roop
92. Rooroo
93. Paripatra
94. Dala (or Balasthala)
95. Chhal (or Anal)
96. Ukya
97. Vajranabha
98. Khagan (or Shankhanaad)
99. Vighruti (or Vyushitashva)
100. Vishvasaha-2
101. Hiranyanabha (He was student of Sage Jaimini, Yagnyavalkya has accepted him as his teacher)
102. Pushya
103. Dhruvasandhi
104. Sudarshana-2
105. Agnivatna-2
106. Shighra
107. Maru-2
108. Prasushruta
109. Susandhi (or Sugandhi)
110. Amarshan and Sahasvanta, the sons of Susandhi
111. Mahasvan
112. Vishwasahav
113. Prasenjit-1
114. Takshaka
115. Brihadbala (at Mahabharata time, Abhimanyu killed Brihadbala at age 125 years in Mahabharata War).
116. Brihadkshana
117. Urn yaksha
118. Vatsa vyuha
119. Prativyoma

120. Divakara
121. Sahadev
122. Brihadasv
123. Bhanurath
124. Pratitasya
125. Supratik
126. Marudev
127. Sunakshatra
128. Kinnara
129. Anadharaksha
130. Suprana
131. Amitrajit
132. Brihadbhaja
133. Dharmi
134. Kritanjay or Dhananjay
135. Rananjay
136. Sanjay
137. Sakya
138. Suddhodan
139. Siddharth (Gautama Buddha) [We may not consider Siddharth in kings list as he kingdom at young age and Suddhodhana's grandson Rahula became next king]
140. Rahula(Son of Siddhardha)
141. Prasenajit
142. Kahudrak
143. Kumdak
144. Suratha
145. Sumitra

These 30 kings reigned for 1504 years (between 3138 BCE – 1634 BCE) Last king Sumitra was killed by Mahapadma Nanda in 1634 BCE.

Chanakya was contemporary to this Mahapadma Nanda (Dhana Nanda), who placed Mahapadmananda's protege Chandragupta, son of Mahapadma Nanda by his wife 'Mura' on the throne of his father.

SHRI KRISHNA'S LINEAGE:

Dr. Nirbhayram, a resident of Dwarka and a temple priest is a devotee of the Dwarkadhish Shri Krishna and a scholar. His depiction of Shri Krishna's lineage consists of seventy-one generations:

- | | | |
|-----------------|-------------|-----------------|
| 1. BrahmaDaksha | 5. Pururava | 9. Yadu |
| 2. Vaivashvat | 6. Aayu | 10. Kroshtu |
| 3. Manu | 7. Nahush | 11. Vrujinvanta |
| 4. Chandra | 8. Yayati | 12. Swahi |

13. Swati
14. Rasadu
15. Chitrarath
16. Shashabindu
17. Pruthusravas
18. Antar
19. Suyajna
20. Ushanas
21. Shineyu
22. Maruta
23. Kambalbarhis
24. Rukmakavach
26. Paravrushta
27. Jayamadh
28. Vidarbha
29. Kray
30. Kunti
31. Dhashti
32. Nivrutti
33. Dashai

34. Vyom
35. Jimut
36. Vikruti
37. Bhimrath
38. Rathvar
39. Navrath
40. Dashrath
41. Ekadashrath
42. Shakuni
43. Kurambhi
44. Devrat
45. Devkshetra
46. Devan
47. Madhu
48. Puruvash
49. Puruhotra
50. Anshu
51. Satvat
52. Bhim
53. Bhajman

54. Chitrarath
55. Vidurath
56. Shoor
57. Sharman
58. Pratikshatra
59. Swayambhoj
60. Hridik
61. Devbhithush
62. Shoor
63. Vasudev
64. KRISHNA
65. Pradyumna
66. Aniruddha
67. Vajranabha
68. Pratibahu
69. Subahu
70. Shantasen
71. Shatasen

Krishna, the Dwarkadheesh, the son of Vasudev, had 80 sons. Here's the list of the 80 sons. Shri Krishna-Rukminiji's Sons:

1. Pradyumna
2. Charu Deshna
3. Sudeshna
4. Charudeha
5. Sucharu

6. Charugupta
7. Bhadracharu
8. Charuchandra
9. Vicharu
10. Charu

Shri Krishna-Satyabhama 's Sons:

11. Bhanu
12. Subhanu
13. Swabhanu
14. Prabhanu
15. Bhanumaan

16. Chandrabhanu
17. Bruhadbhanu
18. Atibhanu
19. Shribhanu
20. Pratibhanu

Krishna-Jambavati's Sons:

21. Samba
22. Sumitra
23. Purujit

24. Shatajit
25. Sahasrajit
26. Vijay

- 27. Chitraketu
- 28. Vasumaan

- 29. Dravin
- 30. Kratu

Shri Krishna-Nagnajiti alias Satya's Sons:

- 31. Veer
- 32. Chandra
- 33. Ashwasen
- 34. Chitragu
- 35. Vegavaan

- 36. Vrush
- 37. Aam
- 38. Shanku
- 39. Vasu
- 40. Kunti

Shri Krishna-Kalindi's Sons:

- 41. Shrut
- 42. Kavi
- 43. Vrush
- 44. Veer
- 45. Subahu

- 46. Bhadra
- 47. Shanti
- 48. Darsh
- 49. Purnamas
- 50. Somak

Shri Krishna-Lakshmana's Sons:

- 51. Prabodh
- 52. Gatravaan
- 53. Simha
- 54. Bal
- 55. Prabal

- 56. Urdhvag
- 57. Mahashakti
- 58. Sah
- 59. Oja
- 60. Aprajit

Shri Krishna-Mitravinda's Sons:

- 61. Vruk
- 62. Harsh
- 63. Anil
- 64. Grudhra
- 65. Varddhan

- 66. Annad
- 67. Mahash
- 68. Paavan
- 69. Vanhi
- 70. Kshudhi

Shri Krishna-Bhadra alias Shaibya's Sons:

- 71. Sangramjit
- 72. Bruhatsen
- 73. Shoor
- 74. Praharan
- 75. Arijit

- 76. Jay
- 77. Subhadra
- 78. Vaam
- 79. Aayu
- 80. Satyak

Different Names of Krishna:

Krishna, the beloved deity of Hinduism, is known by many names, each reflecting a specific aspect of his divine persona and cosmic role. These names, drawn from ancient scriptures and religious texts, serve as epithets that capture the essence of Krishna's multifaceted nature and universal significance.

1. Krishna: The most commonly known name, "Krishna," originates from Sanskrit, meaning "dark" or "black." It symbolizes Krishna's dark blue complexion, which represents the primordial cosmic ocean and signifies his transcendental nature beyond the material world.
2. Govinda: This name translates to "the one who gives pleasure to cows." It emphasizes Krishna's pastoral aspect, highlighting his role as a cowherd in the idyllic landscapes of Vrindavan, where he frolicked with the cows and engaged in playful antics with the cowherd boys (gopas).
3. Gopala: Derived from the Sanskrit words "go" (cow) and "pala" (protector), "Gopala" signifies Krishna's role as the protector and nurturer of all beings, particularly the cows. It underscores the intimate bond between Shri Krishna and the natural world, emphasizing his compassionate and caring nature.
4. Kanha: A popular name among devotees, "Kanha" means "dark" or "attractive." It highlights Krishna's captivating charm and irresistible allure, symbolizing the enchanting beauty that captivates the hearts of devotees and celestial beings.
5. Madhava: This name translates to "the consort of the goddess of fortune." It underscores Krishna's association with wealth, prosperity, and abundance, symbolizing his role as the bestower of divine grace and material blessings.
6. Nandalal: Meaning "the beloved son of Nanda," Shri Krishna is often called "Nandalal" to emphasize his familial ties with his foster father, Nanda Maharaja. It reflects the intimate bond between Shri Krishna and the residents of Vrindavan, who lovingly raised him as their own.
7. Murari: Derived from the Sanskrit words "mura" (demon) and "hari" (destroyer), "Murari" signifies Krishna's role as the vanquisher of demons. It underscores his divine prowess and courage in protecting devotees from evil forces and restoring cosmic order.
8. Vasudeva: This name denotes Krishna's lineage as the son of Vasudeva and Devaki. It emphasizes his royal ancestry and divine heritage, underscoring his status as the Supreme Being (Svayam Bhagavan) descended to earth for the welfare of humanity.
9. Hari: Translating to "the remover of sins" or "the one who bestows liberation," "Hari" signifies Krishna's role as the redeemer and liberator of souls. It highlights his ability to dispel ignorance, purify hearts, and guide devotees towards spiritual enlightenment.
10. Jagannatha: Meaning "the lord of the universe," "Jagannatha" underscores Krishna's cosmic sovereignty and omnipresence. It symbolizes his omnipotent and omniscient nature, transcending all limitations and encompassing creation.

MODERN SCIENCE ON CREATION OF THE UNIVERSE

Fritjof Capra in his bestseller book "The Tao of Physics", (First published in July 11, 2012) mentions: "Modern physics has also shown that the rhythm of creation and destruction is not only manifest in the turn of the seasons and in the birth and death of living creatures but is also the very essence of inorganic matter. For modern physicists, Shiva's dance is the dance of subatomic matter."

Physicists now know that every type of subatomic particle has a corresponding subatomic antiparticle. The processes of creation and destruction continue to occur in the world of particles in a very complicated way. This is testimony of continual rhythm of creation and destruction which is parallel to the divine dance of Nataraja.

Modern Science discovered that the universe is made of matter. The smallest unit of the matter is atom. Atom is composed of 5 fundamental particles (protons, neutrons, electrons, photons and neutrino) and 4 fundamental forces (electromagnetism, gravity, and the strong and weak nuclear forces). Sixth subatomic particle was discovered after 50 years of search in 21st century and named as "Higgs Boson". The Higgs boson, or "God particle," is believed to be the particle which gives mass to matter.

Photons are the most well-known; they carry the electromagnetic force. "Gluons carry the strong nuclear force and reside with quarks inside of protons and neutrons. The weak force, which mediates certain nuclear reactions, is carried by two fundamental particles, the W and Z bosons. Protons and neutrons are made up of fundamental particles of matter called quarks. Electrons are another type of fundamental particles of matter called leptons. Bosons are fundamental particles that carry forces between fundamental particles of matter. As per modern science, mass is nothing but a form of energy.

Western scientists about Vedas

1) **J. Robert Oppenheimer**, called the "father of the atomic bomb", said,

"Access to the Vedas is the greatest privilege this century may claim over all previous centuries."

Oppenheimer learned Sanskrit in the early 1930s and took lessons from Arthur W. Ryder, an expert in the language. He nicknamed his Chrysler car Garuda, the mount (vahan) of the Hindu god Vishnu. One of his favourite Sanskrit texts was the Meghaduta, a lyric poem written by Kalidasa.

Oppenheimer described the atomic bomb as being "as bright as a thousand suns". He also said, "Now I am become Death, the Destroyer of Worlds".

"If the radiance of a thousand suns
Were to burst at once into the sky
That would be like the splendour of the Mighty One... I am become Death,
The shatterer of worlds.

[Quoted from the Shrimad Bhagavad Gita, chapter 11: verse 12 & verse 32, after the bombing of Hiroshima and Nagasaki.]"

दिवि सूर्यसहस्रस्य भवेद्युगपदुत्थिता ।

यदि भाः सदृशी सा स्याद्भासस्तस्य महात्मनः ॥ ॥ 12॥

कालोऽस्मि लोकक्षयकृत् प्रवृद्धो लोकान्समाहर्तुमिह प्रवृत्तः ।

ऋतेऽपि त्वां न भविष्यन्ति सर्वे येऽवस्थिताः प्रत्यनीकेषु योधाः ॥ ॥ 32॥

2) Albert Einstein, the physicist who gave the theories of relativity, is quoted as saying, "When I read the Bhagavad Gita and reflect about how God created this universe, everything else seems so superfluous".

He also mentioned: "I have made the Bhagavad-gita as the main source of my inspiration and guide for the purpose of scientific investigations and formation of my theories."

Einstein is said to have found deep wisdom in the Bhagavad Gita's timeless verses. He is also said to have found comfort in the Bhagavad Gita when he was faced with doubts and disappointments.

3) Werner Heisenberg- was German theoretical physicist, one of the main pioneers of the theory of Quantum Mechanics.

"After the conversations about Hindu philosophy, some of the ideas of quantum physics that had seemed so crazy suddenly made much more sense"

- Werner Heisenberg.

4) Nicola Tesla- Inventor of Alternating Current (AC) power system(electricity). He was a pioneer of AC electricity, induction motor, X-rays, and contributed to the development of radio and television. Swami Vivekananda said in a letter dated February 13, 1896:

Mr. Tesla was charmed to hear about the Vedantic prana and Akash and the kalpas.

In an article, Man's Greatest Achievement, which was written in 1907, Tesla wrote about the use of akasha and prana thus:

Long ago... [mankind] recognized that all perceptible matter comes from a primary substance, or tenuity beyond conception, filling all space, the Akasha or luminiferous ether, which is acted upon by the life giving Prana or creative force, calling into existence, in never ending cycles all things and phenomena. The primary substance, thrown into infinitesimal whirls of prodigious velocity, becomes gross matter; the force subsiding, the motion ceases and matter disappears, reverting to the primary substance.

5) Erwin Schrödinger is best known for the Schrödinger equation, a differential equation used in Chemistry and Physics to solve problems based on the atomic structure of matter.

Schrödinger believed that consciousness is fundamental and cannot be explained in physical terms. He supported the Upanishad's idea that consciousness exists by itself and that the physical world depends on it. He quoted:

"Hence this life of yours which you are living is not merely a piece of the entire existence, but is in a certain sense the whole; only this whole is not so constituted that it can be surveyed in one single glance. This, as we know, is what the Brahmins express in that sacred, mystic formula which is yet really so simple and so clear: *Tat tvam asi*, this is you. Or, again, in such words as 'I am in the east and in the west, I am below and above, I am this whole world'.

Schrödinger was first exposed to Indian philosophy around 1918, through the writings of the German philosopher Arthur Schopenhauer. An ardent student of the Upanishads, Schopenhauer had declared, "In the whole world there is no study so beneficial and so elevating as that of the Upanishads. It has been the solace of my life. It will be the solace of my death."

Schrödinger was not making passing references to the Upanishads; instead, he had wholly internalised their core message. "Myriads of suns, surrounded by possibly inhabited planets, multiplicity of galaxies, each one with its myriads of suns... According to me, all these things are Maya."

He wrote in his book *Meine Weltansicht* that the Upanishads were the greatest privilege of the 1800s.

7) Niels Bohr is known as the Father of Atomic Physics due to his groundbreaking contributions to our understanding of atomic structure and behavior.

Niels Bohr had famously said, "I go to the Upanishad to ask questions."

Bohr was a follower of the Vedas and believed that his experiments in quantum physics were consistent with what he read in the Vedas.

8) Carl Edward Sagan was an American astronomer, known for his research on the possibility of extraterrestrial life, including experimental demonstration of the production of amino acids (the biomolecules considered to be building blocks of proteins, involved in several biological and chemical functions) from basic chemicals by exposure to light. He also wrote and narrated in the television series *Cosmos: A Personal Voyage* and contributed to the Voyager 1 mission - the first man-made object to venture beyond the solar system. Sagan highlighted the cyclic nature of the universe. Hinduism portrays the universe as existing in an constant cycle of creation, preservation, and destruction, symbolized by the concepts of *Srishti* (creation), *Sthiti* (preservation), and *Samhara* (destruction) which mirrors modern scientific theories such as the Big Bang and Big Crunch theories, where the universe undergoes cycles of expansion and contraction.

He quoted, "The Hindu religion is the only one of the world's great faiths dedicated to the idea that the Cosmos itself undergoes an immense, indeed an infinite, number of deaths and rebirths. It is the only religion in which the time scales correspond to those of modern scientific cosmology. Its cycles run from our ordinary day and night to a day and night of Brahma, 8.64 billion years long. Longer than the age of the Earth or the Sun and about half the time since the Big Bang."

TIME CONCEPT IN HINDUISM

Various scriptures describe the time calculation in different ways, creating different units of time which are still used, but only in our day-today vocabulary. Let's find out:

In Shatapatha Brahmana (12/3/2/5), we can find a description of a very small unit of time called Nimesha. Prana and Ana are synonyms of Nimesha.

One Ahoratram(day) = 24 Hora (60 minutes) = 8 prahar = 30 Muhurat

1 Prahar = 3 hora

1 Muhurat(48 minutes) = 2 ghadi

1 ghadi = 30 kala

1 kala = 30 Kashtha

1 kashtha = 18 Nimesh

1 nimesh = 30 Tatpara

1 tatpara = 100 trutya

1 trutih = 29.6 microseconds

29th Muhurat is called Brahm Muhurat.

Another way of measuring time was: Vipal, Pala, Gadi, Hora, and Din.

Sixty Vipala makes one pala.

Sixty pala makes one ghati.

150 Pala makes one Hora.

24 Hora (Hours) makes one Din (a day)

In Kautilya's Arthashastra (2/20), units of time are described as– “Then with regard to the units of time: (The divisions of time are) a Tuta(Truti), Lava, Nimesha, Kashtha, Kala, Nalika (Nadika), Muhúrta, forenoon, afternoon, day, night, Paksha, month, Ritu (season), Ayana ; Samvatsara (year), and Yuga.

Two Trutis are equal to 1 Lava, 2 Lavas are equal to 1 Nimesha, 5 Nimeshas are equal to 1 Kashtha. 30 Kashthas are equal to 1 Kala and 40 Kalas are equal to 1 Nadika. A Nadika also is equal to the time during which one Adhaka of water passes out of a pot through an aperture of the same diameter as that of a wire of 4 Angulas in length and made of 4 Mashas of gold. Two Nadikas are equal to 1 Muhúrta. 15 Muhúrtas are equal to 1 day or 1 night. Such day and night happen in the months of Chaitra and Ashvina. Then after the period of six months it increases or diminishes by three Muhúrtas.

Also, in Kautilya's Arthashastra detailed description of shadow length for identifying time has been given: “When the length of shadow is eight paurushas (96 angulas), it is 1/18th part of the day. When it is 6 paurushas (72 angulas), it is 1/14th part of the day; when 4 paurushas, 1/8th part; when 2 paurushas, 1/6th part; when 1 paurusha, 1/4th part; when it is 8 angulas, 3/10th part (trayodasabhagah);

when 4 angulas, 3/8th part; and when no shadow is cast, it is to be considered midday. Likewise, when the day declines, the same process in reverse order shall be observed.

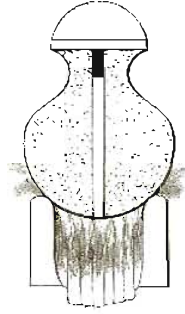
“It is in the month of Ashadha that no shadow is cast in midday. After Ashadha, during the six months from Sravana upwards, the length of shadow successively increases by two angulas and during the next six months from Magha upwards, it successively decreases by two angulas.”

Various types of water clocks, such as the Nālikā Yantra and the Ghaṭikā Yantra were in use from the very ancient times.

Two major types of water clocks:

NALIKAYANTRA AND GHATIKAYANTRA

Nālikā means a tube. The Nālikā Yantra tells time based on the outflow of water from the tube through a narrow outlet near its bottom. A tall jar/pot with an outflow orifice at the bottom. The device when filled up with water at sunrise (prataḥ) would get emptied at the next sunrise representing 60 naḍika.



-wikisource

Ghaṭikā means a small pot or a bowl. The Ghaṭikā Yantra consists of a vessel of water in which floats a small bowl with a hole in the bottom. Time measurement is based on when the bowl gets filled up enough to sink.



A unit of time of 24 minutes duration (one-sixtieth of a day) is called both “nālikā” and “ghaṭikā” after the instrument used for measuring it.

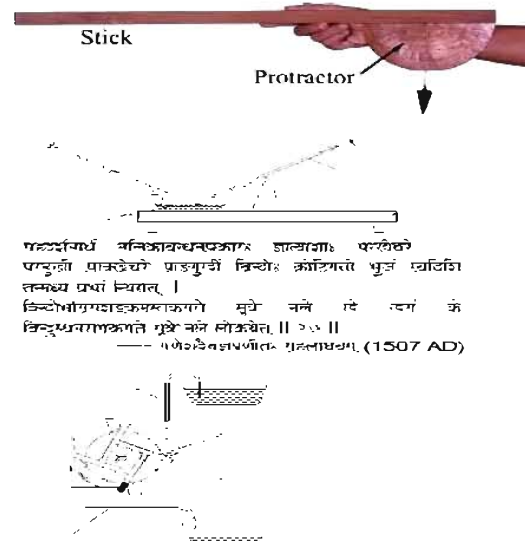
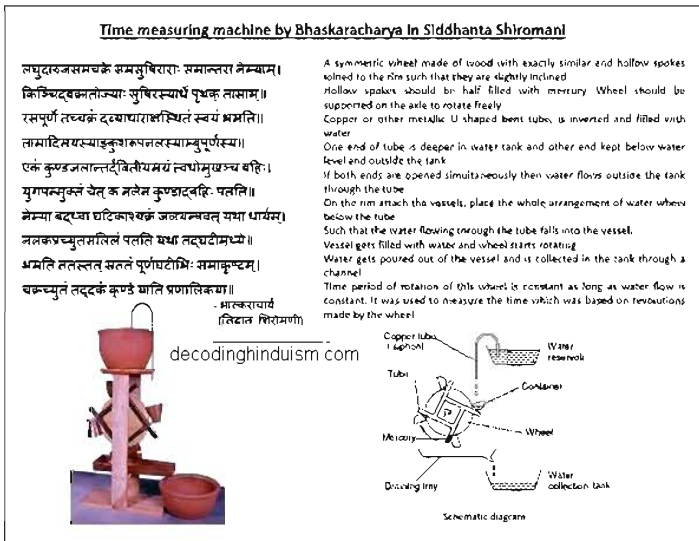
Use of water clock (Nadika Yantra) is very ancient. In Vedang Jyotish itself, the water clock (Nadika Yantra) is described for keeping time in verse no 24. It states:

“A pot which holds 50 Pala of water is said to be holding an Adhaka (i.e. 50 Pala = 1 Adhaka). This Adhaka is used to measure a Drona (4 such Adhaka make one Drona). A Drona minus 3 Kudava is the volume of water that enters (or comes out) of specified hole (from the water clock) in one Nadika. (This is the definition of this unit of time).”

Such a description of water clock can be found in various Puranas as well with similar parameters. The 15 divisions of a day called Muhurtas were also used to be determined by measuring the length of the shadows as described in the next section.

TIME MEASURING MACHINE OF BHASKARACHARYA:

This machine was known as 'Jala chakra yantra'. It means water wheel machine. It is a time measuring machine and is described in the book Siddhantsiromani. Schematic diagram is shown in fig. This mechanism operates with a balance between mercury in the tubes and the water in the vessels. This mechanism uses water head as a potential. In the initial position, containers are empty and mercury is in lower position on the wheel. As the water gets collected into one of the container, the wheel starts rotating. A stage comes when mercury slides from one end of the tube to the other end of tube and causes an imbalance, due to which the wheel rotates further. Because of mercury, wheel rotates in jerks. If four containers are used, then each container rotates the wheel by 90 degrees.



DAY

Aryabhata determined that a day consisted of 23 hours, 56 minutes, and 4.1 seconds. This calculation is close to the modern value of 23 hours, 56 minutes, and 4.091 seconds.

According to ancient Vedic texts, when Vishnu takes a breath, multiple Universes are created and destroyed. Each Universe has its own Brahma. Brahma lives for 100 years and each year of Brahma has 360 days. And we are currently in the first day of 51st year of his life. During the day, life is created and at night, all life is destroyed.

S. No.	Yuga Name	Ratio	Duration (in dev years)	Duration (in human years)	No. of Avatars of Vishnu	Incarnation Name
1.	Sat Yuga	4	4,800	17,28,000	4	Matsya, Kurma, Varaha & Narsimha
2.	Treta Yuga	3	3,600	12,96,000	3	Vamana, Parashurama & Rama
3.	Dwapar Yuga	2	2,400	8,64,000	2	Krishna & Gautam Buddha
4.	Kal Yuga	1	1,200	4,32,000	1	Kalki (yet to happen)

Note:- 1 Dev Year = 360 Human Years

BRAHMA'S LIFE

There are 2 Kalpas in Brahma's full day of 24 hours not 1 as some believe, 1 kalpa for his 12 hour day and 1 kalpa for his 12-hour night.

So, there are two kalpas in a 24-hour day-night and 28 Manvantar in Brahma's life, where each Manvantar is of 71 years of Mahayuga.

One Mahayuga contains four ChaturYuga(s).

1. Satya/ Krita Yuga - 4 Charanas (1,728,000 solar years = 4x)
2. Treta Yuga - 3 Charanas (1,296,000 solar years = 3x)
3. Dwapara Yuga - 2 Charanas (864,000 solar years = 2x)
4. Kali Yuga - 1 Charanas (432,000 solar years = x)

Total of all these years is one cycle of the above four Yugas which is one Mahayug(4.32 million solar years)

One Manvantara (1 life span of Manu) lasts 71 years of the Mahayug.

1 Manvantar = 71 * 4.32 = 306.72 million years (Manu rules for one Manvantar)

Then, Pralay (mass extinction) happens.

After each Manvantar, there is a period of recovery (lasting for one Satya Yug time period = 1.728 million years) called Sandhi Kal.

According to scientific discoveries, around 252 million years ago, the Earth experienced a large mass extinction (Permian-Triassic extinction event).

One Kalpa (half day of Brahma) = 14 Manvantar+15 Sandhi Kal = (14*71*4.32) + (15*1.728) million yrs

= 14 * 306.72 + 15 * 1.728 = 4.32 billion years

1 full day of Brahma = 2 Kalpa = 4.32 * 2 = 8.64 billion years of creation and destruction.

According to latest discoveries in science, the oldest life form found on Earth is 4.28 billion years old, which is in accordance with the above timeline.

Mahakalpa (Lifespan of Brahma) is 100 years = 100 * 8.64 * 30 * 12 = 311.04 trillion years.

[On Universal scale a month is of 30 days and an year is 12 months. 100 years is the lifespan of a universe and is called a Maha Kalpa.]

Currently, 50 years of Brahma have elapsed and we are in the first Day of the 51st year.

Age of this Universe/ Brahma = 50 Universal years + 6 Manvantar + 7 Sandhi Kal + 28 Mahayug
= 155,520 billion + 1840.32 million + 12.096 million + 120.96 million Years
= 157.49 trillion Years

Science says age of Universe is 13.799 billion years old while our ancient texts say it is 311 trillion Years old.

This Brahma's Day, is named as SHVETA-VARAHA KALPA. Within this Day of Brahma, 6 Manvantara(s) have already elapsed and we are in the 7th Manvantara/28th Mahayug named as - VAIVASVATA MANVANTARA

There are 14 Manavantarās in Kalpa. The Manavantarās of our Kalpa are:

1. Swayambhava Manvantara
2. Swarochisa Manvantara
3. Uttama Manvantara
4. Tamasa/Tapasa Manvantara
5. Raivata Manvantara
6. Chakshusa Manvantara
7. Vaivasvata/Shraddhadeva Manvantara (current)
8. Savarni Manvantara
9. Daksha Savarni Manvantara
10. Brahma Savarni Manvantara
11. Dharma Savarni Manvantara
12. Rudra Savarni Manvantara
13. Rauchya/Deva Savarni Manvantara
14. Indra Savarni Manvantara

SAMVATSAR

Samvatsara means Year in Sanskrit. It is a cycle of 60 Samvatsaras in Hindu Panchang which is of 60 years (not 100 as in Gregorian calendar which is a century) . There are different types of Samvatsaras based on the point which is considered as their starting point. Saka Samvatsara, the epoch of which corresponds to Julian year 78 and Vikram Samvatsara which is ahead of Saka Samvatsara by 135 years are some of the commonly used calendar systems.

Vikram samvat - Hindu calendar is named after the legendary king Vikramaditya of Ujjain. A lot of Stories like Simhasan Battisi and Baital Pachchisi are based on him.

Vikramaditya started the "Vikram samvat" calender after defeating shakas.

Many later kings adopted his name on their title. Like, Gupta king, Chandragupta II adopted the title and he was called as Chandragupta Vikramaditya.

The Vikram Samvat has 12 months with each month divided into two phases:

- Shukla paksha (15 days) – begins with the new moon and ends with a full moon.

- Krishna Paksha (15 days) – begins with a full moon and ends with the new moon.

The first day of the Vikram Samvat calendar is celebrated after Diwali in Gujarat and Maharashtra.

Shaka Samvat -The Saka Era marked the beginning of the Shaka Samvat, a historic Hindu calendar which was later introduced as ‘Indian National Calendar’ in 1957. The Saka Era is believed to be founded by King Shalivahan of Satavahana dynasty. The Saka calendar consists of 365 days and 12 months, which is similar to the structure of the Gregorian Calendar. The first month of the Saka Samvat is Chaitra which begins on March 22 which corresponds with March 21 during the leap year.

The Saka calendar is used also by the Indonesian Hindus in Bali and Java. The **Gazette of India** uses this calendar along with the Gregorian Calendar.

The sixty years are:

- | | | |
|-----------------------------|---------------------------------|---------------------------|
| 1. Prabhava; | 22. Sarvadhārin; | 42. Kīlaka; |
| 2. Vibhava; | 23. Virodhin; | 43. Saumya; |
| 3. Śukla; | 24. Vikṛti; | 44. Sādhāraṇa; |
| 4. Pramodūta; | 25. Khara; | 45. Virodhikṛt; |
| 5. Prajotpatti (Prajāpati); | 26. Nandana; | 46. Parī-dhāvin; |
| 6. Aṅgiras; | 27. Vijaya; | 47. Pramādin; |
| 7. Śrīmukha; | 28. Jaya; | 48. Ānanda; |
| 8. Bhāva; | 29. Manmatha; | 49. Rākṣasa; |
| 9. Yuvan; | 30. Durmukha; | 50. Anala; |
| 10. Dhātṛ (Dhātu); | 31. Hevilambin
(Hemalambin); | 51. Piṅgala; |
| 11. Īśvara; | 32. Vilambin; | 52. Kālayukta; |
| 12. Bahudhānya; | 33. Vikārin; | 53. Siddhārtha; |
| 13. Pramāthin; | 34. Śārvarin; | 54. Raudra; |
| 14. Vikram; | 35. Plava; | 55. Durmati; |
| 15. Vṛṣan (Viṣu); | 36. Śubhakṛt; | 56. Dundubhi; |
| 16. Citrabhānu; | 37. Śobhakṛt; (Śobhana); | 57. Rudhirodgāra; |
| 17. Subhānu (Svabhānu); | 38. Krodhin; | 58. Raktākṣa (Raktākṣin); |
| 18. Tāraṇa; | 39. Viśvāvasu; | 59. Krodhana; |
| 19. Pārthiva; | 40. Parābhava; | 60. Kṣaya. |
| 20. Vyaya; | 41. Plavaṅga; | |
| 21. Sarvajit; | | |

MASA

Masa is the lunar month in the Vedic calendar system. The year as per the Hindu calendar starts from Chaitra masa and ends with Phalguna masa. Every masa has a fixed number of Tithis. A Masa has 2 Pakshas (Krishna Paksha and Shukla paksha) - 30 Tithis in total. A lunar month which ends on new moon day is called Amant (Amavasya+anta) and the one which ends on full moon day is called Purnimant (Purnima+anta). An intercalary month is added every 32.5 months. The Hindu lunar calendar adds one extra month every third year. This extra month is known by various names; adhik

mass, mal mass, purushottam mass, malimmacha. There are no adhika māsa falling during Kārtika to Māgh.

When there is a lunar year with a diminished or reduced month, with only eleven months, which occurs once in 140 years or once in 190 years, it is called Kshaya Masa or Lost Month. If the sun transits into two rāshis within a lunar month, then the month will have to be labeled by both transits and will take the epithet Kshaya or “loss”. The last Kshaya maasa was in 1983 when the month of Magh was lost. The next will be in 2124.

12 Hindi months names – Chaitra, Vaisakha, Jyeshtha, Ashadha, Shravana, Bhadrapada, Ashwin, Kartika, Agrahayana, Pausha, Magha and Phalguna.

RITU

Ritu means season. There are 6 Ritus which represent the 6 seasons. The year starts from Vasanta ritu which is the spring season and ends with Shishir Ritu which is the winter season. The following are the Ritus , seasons they represent and their respective Masas -

1. Vasant – Spring (Chaitra and Vaishakh)
2. Grishma – Summer (Jyeshtha and Ashadha)
3. Varsha – Monsoon (Shravan and Bhadrapad)
4. Sharad – Autumn (Ashwin and Kartika)
5. Hemant – Prewinter (Margashirsh and Paush)
6. Shishir – Winter (Magha and Phalgun)

PANCHANG

Hindu Panchanga is a Bharatiya almanac that gives detailed information about the various festivals, rituals, and planetary combinations and has been in use since time immemorial in the Bharatiya subcontinent. Panchanga which means ‘five arms’ consists of the five most important parts - Tithi, Vaara, Nakshatra, Yoga, and Karana. The Vaara or the day of the week is based on Sun alone; Tithi and Karana are based on Moon alone; Nakshatra and Yoga are based upon both Moon and Sun. This makes the Hindu calendar a true lunisolar calendar.

TITHI

Tithi can be called as a lunar day. When the moon traverses 12° in longitude relative to the sun, a tithi is completed. There are fifteen tithis in the waxing phase (Shukla paksha) with end tithi as full moon day (Purnima) and other fifteen tithis in the waning phase (Krishna Paksha) with end tithi as new moon day (Amavasya). These phases together constitute a lunar month which is of thirty tithis.

VAARA

Vaara is the day of the week. There are 7 Vaars. Ravivar, Somvar, Mangalwar, Budhwar, Guruwar, Shukrawar, Shaniwar.

“The seven days of the week have the seven Grahas (planet) from the Sun to Saturn as their Horas.”

सप्तैते हरेशाः शनैश्चराद्या यथाक्रमं शीघ्राः।
शीघ्रक्रमाच्चतुर्थार् भवन्ति सूर्योर्दयाद् दिनपाः ॥

The seven grahas (planets) beginning with Saturn, arranged in the order of increasing velocity, are the horas of the successive hours.

The order of the planetary rulership of horas(hour) is as follows.

- 1) Surya (Sun) followed by
- 2) Shukra (Venus) followed by
- 3) Budh (Mercury) followed by
- 4) Soma (Moon) followed by
- 5) Shani (Saturn) followed by
- 6) Guru (Jupiter) followed by
- 7) Mangal (Mars).

The planet that rules the hora at the time of sunrise is assigned the rulership of the whole day. And hence,

The day Ravi-var (or Sunday) is named after Ravi/Sun who is assigned rulership of the day because he rules the hora at the time of sunrise of that day. Now, following Sun, the next hour after sunrise is ruled by Shukra followed by the rest. In the above-mentioned order of rulership of horas, let's calculate the next ruling planet that comes after 24 horas, i.e

1st hour by Ravi, 2nd hour by Shukra, 3rd hour by Budh, 4th hour by Soma, 5th hour by Shani, 6th hour by Guru, 7th hour by Mangal, 8th hour by Ravi, 9th hour by Shukra, 10th hour by Buddh, 11th hour by Soma, 12th hour by Shani, 13th hour by Guru, 14th hour by Mangal, 15th hour by Ravi, 16th hour by Shukra, 17th hour by Budh, 18th hour by Soma, 19th hour by Shani, 20th hour by Guru, 21st hour by Mangal, 22nd hour by Ravi, 23rd hour by Shukra, 24th hour by Buddh and End of a day- 25th hour by Soma

It turns out that Soma (Chandra/Moon) is the ruler of the next day's sun rise. And hence, the next day Soma-var (or Mon-day) is named after Chandra/Moon who is assigned rulership of the day because he rules the hora at the time of that day's sunrise. In the same order,

Mangal-var (Tuesday) for Mangal/Mars being the hora ruler at sunrise, Budh-var (Wednesday) for Budha/Mercury being the hora ruler at sunrise, Guru-var (Thursday) for Deva Guru Brihaspathi/Jupiter being the hora ruler at sunrise, Shukra-var (Friday) for Shukra/Venus being the hora ruler at sunrise, Shani-var (Saturday) for Shani/Saturn being the hora ruler at sunrise.

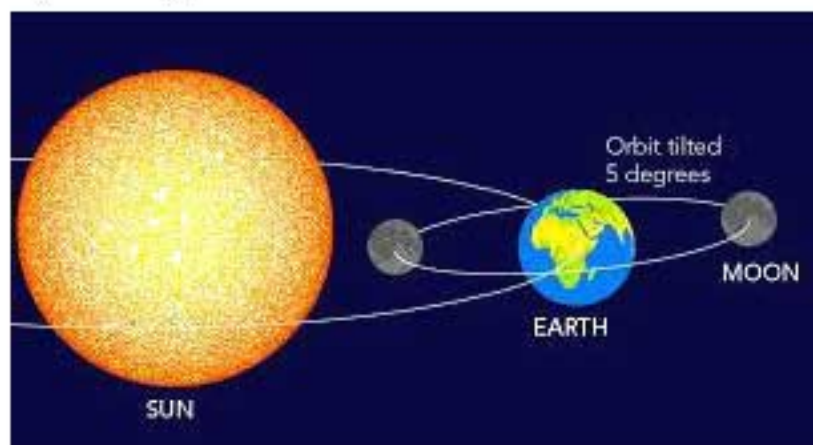
Now after Saturday, the cycle reverts to 1) with Surya being the ruler of the hora at the time of next day's sunrise. This is the reason why there are only 7 days in a week based on these calculations of hora and their planetary rulership as mentioned in the vedic texts.

Over lengthy periods in orbit, the Moon, Mercury, Venus, Mars, Jupiter, Saturn could come in line with respect to Earth & Sun. All these fall within the same orbital plane as the Earth-Sun couple.

Hence these 6 objects - Moon, Mercury, Venus, Mars, Jupiter, Saturn - are GRAHAS along with 1 Sun ($6+1 = 7$ days in week). Neptune, Uranus, Pluto are not GRAHAS as these cannot cause eclipses.

Hindu astronomy adds the lunar nodes of Rahu & Ketu (North & South nodes of the lunar orbits intersection) and hence arrives at the Nava Grahas (9 Grahas) described in detail:

The points of intersection between the sun's apparent (in reality earth's) orbital path around the earth, the ecliptic, and the moon's orbital path around the earth are the lunar nodes. These points of intersection occur because the plane of the moon's orbital path is inclined to the sun's (in reality the earth's) orbit at an angle of 5 degrees and 9 minutes.



Hence, Rahu & Ketu are not considered for week day calculation (as these are non-physical nodes) but are mathematical nodal points for predicting Eclipses (Grahana).

Modern scientists claim that ancients did not know of 9 planets. Fact is that the ancients did indeed know about Uranus(Shweta/Arun), Neptune(Shyama/Varun), Pluto(Yam/Teevra – Teevr means extreme – aptly named as Pluto is the extreme planet) but these 3 are not Grahas as they don't cause Grahana.

The nava(nine) grahas are

1. Surya - Sun
2. Chandru - Moon
3. Mangala - Mars
4. Budha - Mercury
5. Guru/Brihaspati - Jupiter
6. Shukra - Venus
7. Shani - Saturn
8. Rahu - Northern lunar node
9. Ketu - Southern lunar node

NAKSHATRA

A Nakshatra is a belt or a path in the sky, 18 degrees in width, running around the earth in an east-west direction. Groups of stars, to all appearing fixed, are studded along this imaginary belt. Twenty seven (or twenty-eight!) groups of stars are recognised in Vedic astrology. Because of lack of apparent

motion, these are called Nakshatras. This imaginary belt, with nakshatras studded on it, is called the zodiac. The zodiac forms the reference point for fixing up the position of any planet or star in the sky. Since it encircles the earth, it is comprised of 360 degrees. The twenty-seven nakshatras being evenly placed on it each have a span of $13^{\circ}20'$ arc. The various nakshatras are numbered from one to twenty-seven: Ashwini, Bharani, Krittika, Rohini, Mrighasira, Ardra, Punarvasu, Pushya, Ashlesha, Magha, Purva Phalguni, Uttara Phalguni, Hasta, Chitra, Swati, Vishaka, Anuradha, Jyestha, Moola, Purvashada, Uttarashada, Sharavan, Dhanishta, Shatabisha, Purvabhadra, Uttarabhadra, and Revati.

YOG

A yog is a specific disposition of a planet or planets which is productive of specific results. There are hundreds of thousands of yogs described in astrological texts. Their presence or absence in a horoscope, as also their strength and placement, determines the nature and stature of a native.

There are 27 Yogas, each measuring $13^{\circ}20'$ of the arc. Yog is the sum of sidereal (Nirayana) longitudes of sun and moon in the multiples of $13^{\circ}20'$. When the sidereal longitudes of sun and moon are added and they are divided by $13^{\circ}20'$, the quotient plus one gives the number which denotes the respective Yoga.

1. VISHAKUMBHA

Triumphant - (achievements over others, victorious over enemies, gets the property, wealthy)

2. PREETI:

Happy- (well liked, fascinated to the opposite gender, enjoys life with serenity.)

3. AAYUSHMAN:

well-rooted-(good well-being and long life, enthusiastic.)

4. SAUBHAGYA:

Good Wealth-(enjoys a contented life full of prospects, happy)

5. SHOBHANA

Beautiful-(radiant body and behavior sensualist, passionate with sex.)

6. ATIGANDA:

Danger-(problematic life due to many difficulties and accidents; unforgiving and annoyed)

7. SUKARMA:

Plentiful-(performs honorable activities, generous and benevolent, prosperous.)

8. DHRITI:

Enjoyment-(enjoys the prosperity, goods and life-partners of others; pampers in the friendliness of others.)

9. SHOOLA:

Argumentative-(argumentative and conflicting, argumentative, angry.)

10. GANDA:

Worrying-(imperfect ethics or principles, worrying personality)

11. VRIDDHI:

Perspicacity-(intellectual, unscrupulous and discriminating; life constantly progresses with age.)

12. DHARUVA:

Persistent, Dependable-(stable personality, able to focus and persevere, rich)

13. VYAGHAATA:

Violent-(unkind, determined by hurting others)

14. HARSHANA:

Pleasure, Blissful-(intellectual, pleasures in cheerfulness and funniness.)

15. VAJRA:

Power Burst-(wealthy, lascivious, changeable, forceful.)

16. SIDDHI:

Victory-(clever and talented in several areas; defender and follower of others.)

17. VYATIPAATA:

Difficulty-(inclined to unexpected mishaps and setbacks, fickle and untrustworthy.)

18. VARIYAANA:

luxurious comfort-(loves comfort and amenity, lazy, lascivious.)

19. PARIGHA:

Hindrance-(encounters many problems to develop in life; short-tempered and interfering.)

20. SHIVA:

Benevolent-(pleased by seniors and government, calm, learned and spiritual, wealthy)

21. SIDDHA:

Talented-(helpful personality, pleasing nature, interest in customary and holiness)

22. SAADDHYA:

Mediation-(well conduct yourself, accomplished manners and politeness.)

23. SHUBHA:

Favorable-(lustrous body and character, but difficulties with health; well-off, short-tempered.)

24. SHUKLA:

Bright focus-(talkative and unreliable, annoyed and thoughtless; tottering and changeable mind)

25. BRAHMA:

Responsible-(truthful and stable, ambitious, good perspicacity and judgment.)

26. INDRA:

Headship-(curiosity in training and knowledge; obliging, well off.)

27. VAIDHRITI:

Divisive-(dangerous, conniving nature; influential and irresistible mentally or physically.)

As one can see, the result of Yogas are in accordance to the name given to them. Vaidhriti and Vyatipaata Yogas are to be avoided in all auspicious acts. Out of remaining Yogas, first three Ghatas of Vajra and Vishkumbha, first half of Parigha, first five ghatas of Shool, first nine ghatas of Vyaghat, and first nine ghatas of Gand and Atigand are to be discarded for all the auspicious acts.

(Ghati which represents '24 minutes' was the primary measurement unit of time, and 60-ghatis instead of 24 hours have been in use since ancient times in Bharat to indicate the time of the day.)

KARAN

A Karana is half of a tithi or when the moon traverses 6° in longitude relative to the sun. In 30 tithis of a lunar month, there are 60 Karanas or half-tithis.

There are 4 Karanas that occur only once in a lunar month. They are fixed Karanas and called as:

- 1.Shakuni: assigned to the latter half of the 14th day of Krishna-paksha.
- 2.Chatuspada: assigned to the first half of the Amavasya (15th day of Krishna-paksha).
- 3.Naga: assigned to the latter half of the Amavasya.
- 4.Kimstughna: assigned to the first half of the first day of the Shukla-paksha.

The remaining 7 Karanas occur 8 times during the rest of the lunar month. Their names are:

1. Bava
2. Balava
3. Kanlava
4. Taitila
5. Gara
6. Vanija
7. Visht

These Karanas reoccur in regular order starting from the second half of the first day of Shukla- paksha (waxing moon) until the first half of the 14th day of the Krishna-paksha (waning moon).

RASHI

Rashi (moon sign) represents the position of the moon on the zodiac at a given time.

The zodiac is divided into 12 parts -Mesha, Vrishabha, Mithuna, Karka, Simha, Kanya, Tula, Vrishchika, Dhanu, Makara, Kumbha, and Meena;

Aries (Mesha), Taurus (Vrishabha), Gemini (Mithuna), Cancer (Karka), Leo (Simha), Virgo (Kanya), Libra (Tula), Scorpio (Vruchika), Sagittarius (Dhanu), Capricorn (Makara), Aquarius (Kumbha), and Pisces (Meena).

When the zodiac is divided into twelve equal parts, each such part has an extension of 30 degrees of the arc. Such a division is called a Sign or Rashi. A sign consists of two and a quarter nakshatras. A particular group of stars in the zodiac is considered as the starting point of the zodiac. From this point, the twenty-seven nakshatras or the twelve signs begin.

A planet located anywhere along the zodiac may be considered as located in a particular sign, depending upon which twelfth division of the zodiac it is in; it may be considered as being located in a particular nakshatra too, depending upon which twenty seventh division of the zodiac it is in.

LAGNA

Lagna (sun sign) represents the position of the sun on the zodiac at a given time.

From a Bharatiya astronomical perspective, the twelve houses of a horoscope deal with all conceivable aspects of life. The most important of all houses is the lagna or the first house. The remaining houses are basically related to the first house only. The planets in the horoscopic chart are subservient to the lagna, and their original nature undergoes modifications depending upon the lagna. Their names are same as those of Rashi.

[Lagna can be considered to affect the external aspects of a person while Rashi affects the internal aspects of a person. Lagna determines an individual's mental capacity, character and temperament. Rashi determines the emotional nature of the individual. Lagna is determined by the time and place of birth of the person, while Rashi is the sign where the Moon is situated at the time of birth.]

CONCEPT OF SIDEREAL YEAR & PRECESSION OF THE EARTH

Hindu calendar or PANCHANG follows the underlying concept for timekeeping based on sidereal year for solar cycle and adjustment of lunar cycles in every three years. Twelve Hindu mas (masa, lunar month) are equal to approximately 354 days, while the length of a sidereal (solar) year is about 365 days.

This creates a difference of about eleven days, which is offset every $(29.53/10.63) = 2.71$ years, or approximately every 32.5 months. To account for the mismatch between lunar and solar calendar, the Hindu scholars adopted intercalary months, where a particular month is just repeated. Purushottam Maas or Adhik Maas is an extra month which is inserted to keep the lunar and solar calendars aligned. A day can only be completed by combining day and night. The day begins with sunrise and continues till the following sunrise. Sunset is regarded the transition point between day and night.

Summer solstice - June 21

Winter solstice - December 22

Vernal Equinox - March 21

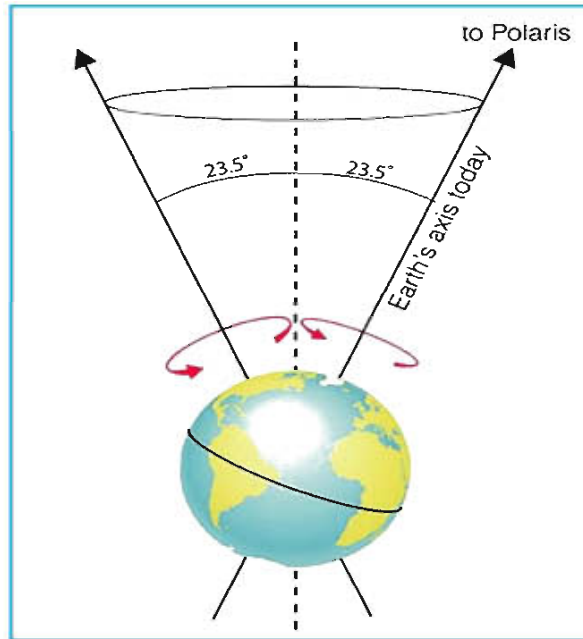
Autumnal Equinox - September 23

The earth's axis around which it rotates is 23.5 degrees from the vertical. On the day of summer solstice, the earth is tilted maximum towards the sun while on winter solstice its maximum away from the sun. Equinoxes fall between the solstices. The time between the equinoxes is known as a tropical year.

A sidereal year is the time to complete one revolution of the earth around the sun.

The Earth orbits the Sun roughly once a year. The Earth's orbit about the Sun defines the ecliptic plane, in which all the other planets orbit as well. 12 constellations lie on the ecliptic plane and define the Zodiac. From Earth's perspective, the Sun passes one Zodiac constellation per month and cycles through all 12 once a year.

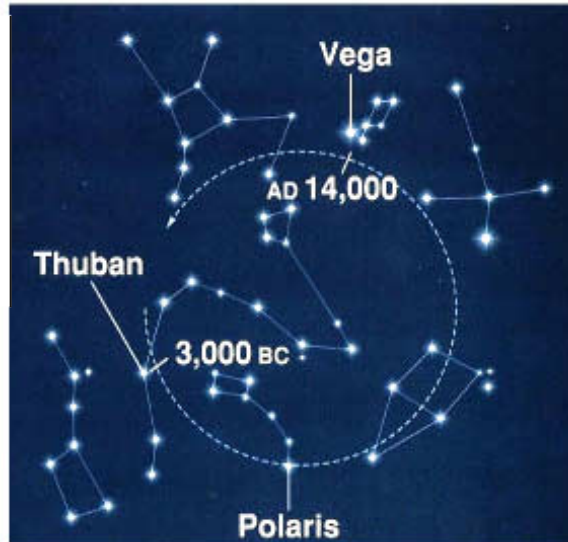
The earth's axis (the tilt) also makes a complete circle in space which takes 26000 years, just as a spinning top sometimes wobbles during its rotation.



-courtesy: research gate

This circle is called precession. During the precession, the Earth's axis traces out an imaginary conical surface in space and a circle on the celestial sphere.

- The Celestial North Pole or CNP (i.e., the projection of the Earth's axis onto the northern sky) moves about 1° along this circle every 72 years ($360 \times 72 = 26,000$).
- Stars that happen to lie at or near this circle would represent the North Star at the time.
- Polaris is the North Star (Dhruv tara) today.
- Vega was North Star 13,000 years (i.e., half a precession cycle) ago and will be again 13,000 years from now.
- Thuban was the North Star about 5,000 years ago and will be again in about 21,000 years from now.
- Our Sun orbits the center of the Milky Way with a period of 230 million years.
- Because of the precession of the Earth's axis, the vernal equinox moves through all the constellations of the Zodiac over the 26,000 year precession period. This phenomenon is known as the precession of equinoxes.
- The period during which the vernal equinox remains in a particular Zodiac sign is known as an Astrological age and each age lasts about 2150 years (one-twelfth of 26,000 years).



-courtesy: Medium.com

Sidereal year is 365.2564 days long Tropical year is 365.2422 days long

So, a calendar year based on sidereal year will begin to err with respect to season. The real equinox and solstice will shift away from the calendar date.

Let's consider Sankranti. The orbital circle is divided into 12 segments for our convenience each associated with a constellation (signs of zodiac). The time of crossing of Sun from one zodiac sign to another is called Sankranti.

Two prominent Sankranti:

Makar Sankranti - 14 January

Mesh Sankranti- 14 April

They were supposed to be Winter solstice (22 December) and Vernal equinox (21 March). So, since the time when the dates were fixed, they have shifted by 24 days due to precession. They will coincide with proper dates after 26000 years.

Karka Sankranti marks the summer solstice (June 21) and the Tula Sankranti marks the autumnal equinox (September 23).

NOW LET'S CONSIDER SOLAR AND LUNAR YEAR

A solar year lasts for 365 days while a lunar year is of (29.5×12) 354 days (354.37 actual days). So, each lunar year will start earlier than solar year. In three years, almost one month of lunar year will be lagging behind the solar year. To correct this discrepancy, a month is added almost every 3rd year in the lunar year called **Adhik Mas**. It will occur 7 times in 19 years.

This shows Hindu calendar in sync with solar and lunar calendars. Sometimes, a peculiar situation occurs - a lunar month spans two Sankrantis. This is what happened in 1982-83. There was no Amavasya during the solar month Magha. As a result, the lunar month Magha was "lost" and became a **Kshayamasa**. It happens if the Earth is moving exceptionally fast. The Sun may pass through a sign of the zodiac in less than a lunar month. So, in 1982-83, there were two adhikmasa - Ashvina and Phalgun.

This is always the case - a year with a Kshayamasa will have two Adhikmasa!

Names of solar months in			
Most of Bharat	Tamil Nadu	Kerala	Starts on
Vaisakha	Chittrai	Mesha	April 14
Jyeshth	Vaikasi	Vrishabha	May 15
Ashadha	Ani	Mithuna	June 15
Shravana	Adi	Karkataka	July 17
Bhadrapada	Avani	Simha	August 17
Ashvina	Purattasi	Kanya	September 17
Kartika	Aipasi	Tula	October 18
Margashira	Kartigai	Vrishchia	November 17
Pushya	Margazhi	Dhanus	December 16
Magha	Thai	Makara	January 14
Phalgun	Masi	Kumbha	February 13
Chaitra	Panguni	Meena	March 15
The name of each month in Kerala corresponds to the Zodiac constellation that the sun is in during that month. Thus, during the month of Mesha, the sun is in the constellation Mesha.			

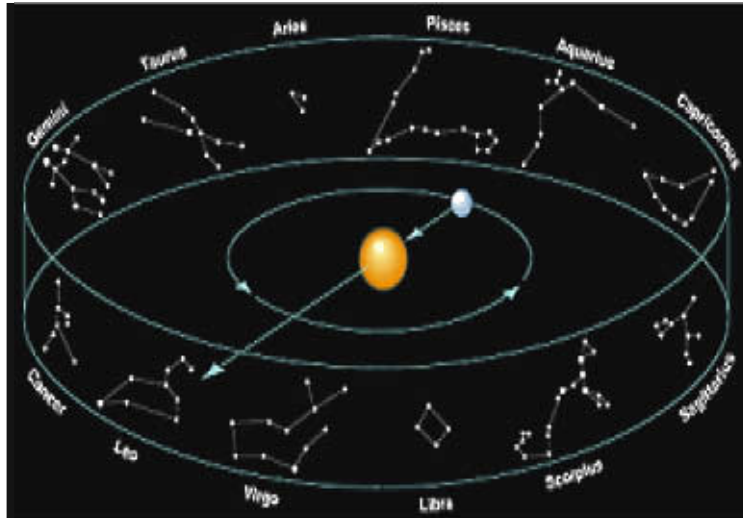
The Hindu calendar still shifts slowly with respect to seasons due to the precession of the earth's axis. As a result, Uttarayan (Makar-sankranti or Pongal, marking the day of the year when sun starts moving towards Uttar (north) which is usually celebrated around January 14th, actually falls on 22nd of December as it is on this date that the sun is at the southernmost point, as seen from earth.

If it continues in the same way, after about 11,000 years, Pongal will occur in June, Diwali will then be celebrated around April and sawan- bhadon will no longer imply torrential rains.

Added to all this is the slowing down of the Earth's rotation due to tides, and the recession of the Moon from Earth. Extrapolated backwards, Earth's Day length was perhaps very short (5-6 hours!) during its first billion years, and in a distant future the day will become much longer (if everything else remains the same, it could become a month long)

Tropical systems consider 0 degrees of Aries (Mesh Sankranti) as always coinciding with the March equinox (known as the spring/vernal equinox in the Northern Hemisphere) and define twelve zodiac signs from this starting point, basing their definitions upon the seasons and not upon the observable sky wherein the March equinox currently falls in Pisces due to the Earth's axial precession.

Aries point, or vernal equinox in the tropical zodiac, is a NODE. It marks the place where the sun crosses the equatorial plane going north. It's the Sun/earth node, as opposed to the Lunar nodes. The 0 degree Aries Point (AP) marks the beginning of the cardinal signs (Aries, Cancer, Libra, Capricorn...), as Sun crosses these constellations.



-courtesy: astronomy magazine

These differences have caused sidereal and tropical zodiac systems, which were aligned around 2,000 years ago when the March/vernal equinox coincided with Aries in the observable sky, to drift apart over the centuries.

Astrology which considers precession of the Earth is known as Sidereal Astrology and Hindu calendar is based on Sidereal Astrology. Sidereal astrology is also known as Nirayana (निरायण) Astrology. The counterpart of Sidereal astrology is known as Tropical or Sayana (सयाना) Astrology which is followed by most Western Astrologers. Precession is also known as Ayanamsha (अयन- अंश).

The intersection of the celestial equator and ecliptic path of the Sun results in two intersection points, one of the points is called Vernal Equinox. Western astrology uses the Vernal Equinox as the point of reference which is known as the Tropical Zodiac (Sayana), whereas the Bharatiya system adopts a fixed star as the point of reference which is known as Sidereal Zodiac (Nirayana). The angular difference in the longitudes between the sidereal zodiac (Nirayana) and the tropical zodiac (Sayana) is called **Ayanamsa**. In other words, Ayanamsa refers to the difference between the sidereal zodiac (based on the position of stars) and the tropical zodiac (based on the position of the Sun relative to the Earth's equinoxes and solstices).

Ayanamsa is a Sanskrit word and defined as a phenomenon whereby the vernal equinox (the time when the Sun crosses the plane of Earth's equator making day and night approximately of equal length on March 21 and September 22 every year) is drifting westward by an approximate angle of 50.238 seconds every year. This drifting is also known as axial precession and it is caused by the gravitational pull of the Sun and moon. It is also referred to as a gradual shift from the orientation of the Earth's axis of rotation in a period of 26000 years.

Ayanamsa or precession of equinox is the shift of 0 degrees Aries every year which is on account of the wobble of the earth on its axis.

Every system in Hindu Vedic Astrology uses their own Ayanamsa. The most widely used Ayanamsa is Lahari or Chitrapaksha Ayanamsa.

The Sun does not return exactly to the same point each spring at the vernal equinox or 0 degree Aries as observed from a fixed star. Every year it deviates by an amount of approx. 50 seconds of arc. For a particular year this may not seem miniscule duration, but when it accumulates over the years it becomes very important. At present this is approx. 24 degrees, considering that the coincidence of tropical & Sayana zodiac was in or near 285AD. This results in the vernal equinox falling back into Pisces, then eventually Aquarius and so on. This is known as the precession of the Vernal Equinox.

This ever-increasing difference is called “Ayanamsha”. By subtracting Ayanmsha from planet position in tropical or western Sayana chart we can get the position of planets in sidereal or Vedic Nirayana chart.

$$\text{Nirayana Longitude} = \text{Sayana Longitude} - \text{Ayanamsa}$$

A western astrologer will take the Vernal Equinox as 0 degrees Aries, regardless of whether the Sun is observed against the backdrop of the stars in the constellation of Aries on that particular day and year. But a Vedic astrologer takes the planetary position against the position of a fixed star (Spica or Chitra, brightest star in Aries constellation).

This results in planet’s positions in Vedic chart matching the real time position.

Famous astrological places in Bharat:

Maharaja Jai Singh II of Jaipur established five Jantar Mantar in the early 18th century, the cities are:

- New Delhi
- Jaipur
- Ujjain
- Mathura
- Varanasi

These five were completed between 1724 and 1735. The List of Instruments Involved is:

- Samrat Yantra
- Jai Prakash Yantra
- Disha Yantra
- Ram Yantra
- Chakra Yantra
- Rashi Valaya Yantra
- Dingash Yantra
- Utaansh Yantra

GREGORIAN CALENDAR

From almost the dawn of civilization, man noticed that many phenomena in nature were repetitive. The most basic cycle was the alternation of day and night.

Next, Early humans noticed that over a certain period of time, the seasons changed, following a fixed pattern. Also, the phases of the Moon were a curious phenomenon, which repeated over a period, called the month.

To keep track of the days, months and years, the need of a calendar arose. There are many different types of calendars in use. The calendar which we follow for most of our daily activities developed mostly in Europe. This so called Western or Gregorian calendar is purely solar – it ignores Moon completely and relates important days (for example, birthdays, festivals etc.) only to the time of the year. There is a widely used calendar which is purely lunar - the Islamic calendar. It ignores Sun.

Islamic calendar is completely lunar. So, Islamic months move forward by 11 days every solar year. The Western calendar or Gregorian calendar directly measures the tropical year keeping equinoxes and solstices fixed, based on the movement of Sun against the stars. By the year 50BC, the equinoxes moved away by 3 months. In 46BC, Julius Caesar sought the advice of Egyptian astronomer, Sosigens to rectify this issue. So, 67 days were added to the year 46BC. But, by then, astronomers had calculated the year to be 365.25 days long. So, Julius Caesar began the practice of adding one day every fourth year ($.25 \times 4 = 1$ day).

Now, tropical year is not 365.25 but 365.2422 days long. This tiny fraction of .0078 adds upto 3 days in 400 years ($.0078 \times 400 = 3.12$). So, in March 1582, Pope Gregory XIII announced a new calendar in which a century year will not be a leap year unless it is divisible by 400. 3 days were dropped from every 400 years. That means, 1700, 1800, 1900 will not be leap years and the error accumulated till that time (of centuries $400, 800, 1200 = 3 \times 3 = 9$ days plus one more day) was rectified by deleting 10 days. 4th October, 1582 was followed by 15th October, 1582 so that Gregorian calendar is in sync with tropical calendar.

This was considered catholic invention and was refused to be adopted by England, Scotland, British empire and parts of USA until 1752 when it became necessary to correct it by 11 days. So, 2nd September, 1752 was followed by 14th September, 1752.

Currently, the Julian calendar is 13 days behind the Gregorian calendar.

On the timescale of thousands of years, the Gregorian calendar falls behind the seasons drastically because the slowing down of the earth's rotation makes each day slightly longer over time while the year maintains a more uniform duration. The equinox will occur earlier than now by a number of days approximately equal to $[\text{years into future} / 5000]^2$. This is a problem that the Gregorian calendar shares with any rule-based calendar.

ADI SHANKARACHARYA

Adi Shankaracharya is the Guru of Hinduism. He was born in Kerala in Kalari district. His parents were Shiv Guru and Aryambuja. He was born in Punarvasu Nakshatra in the month of Vaisahakh on Shukla Panchmi. When he was 8 years old, he had learnt all the four Vedas, by 12, all the shastras and by the age of 16, he had completed his commentary on Bhagavad Gita, Brahma Sutra, Prasthanatreya, And 11 main ethics of Hinduism. His guru was Guru Govind Pad . In the next 16 years, he travelled throughout Bharat four times. He came to know that people of Bharat followed different modes of praying to God.

Buddhism and Tantric practices were prevalent in the society. They were divided into different Sampradayas, different philosophies, different beliefs in God and different ways of praying. Also, they followed different rituals because of which all the people had completely different view related to God.

He debated with many learned scholars following different schools of thought including Buddhism, Jainism and different tantric practices. His most famous debate was with Acharya Mandan Mishra and then Acharya's wife Ubhay Bharati who asked questions related to married life though Adi Shankaracharya was a Brahmachari. He always defeated his opponent in every debate. He lived for 32 years and then took Mahasamadhi. He had four disciples who were later also called Shankaracharya. These were:

1. **Hastamalika**- Shankacharya of Dwarika Mathh in the West, also known as Sharada Mathh. Here all books of Samveda were kept. The disciples are given the adjective of Tirth/Ashram. Main motto "*Tat tvamasi*" from Chhandogya Upanishad 3.6.8.7
2. **Padmapad**- Shankaracharya of Govardhan Matth in the East, also known as Puri Mathh. Here books of Rigved were kept. The disciples are given the adjective of Aranya. Motto is '*Pragyanam Brahma*' from Aitreya Upanishad 3.3
3. **Sureshwar**- Shankaracharya of Shringeri Matth in the South, also called Sharada Matth. Here all the books of Yajurved were kept. Disciples of this are given the adjectives as Saraswati/Bharati/Puri. Their main motto is '*Aham Brahmasmi*' from Brihदारanyak Upanishad 1.4.10.
4. **Totakacharya** - Shankaracharya of Jyotir Matth in the North, also known as Badrinath. The disciples are given the adjective of Giri/Parvat/Sagar. Here books of Atharvaveda were kept. Main Motto '*Ayamatma Brahma*' from Mandukya Upanishad 3.1.2

The six categories of philosophy of Hinduism are Nyay, Vaisheshik, Uttar mimansa, Purva Mimamsa, Yoga & Sankhya.

A particular Guru lineage is called Parampara. By receiving diksha (initiation) into the Parampara of a living guru, one becomes a part of that sampradaya. Sampradayas ensure continuity through Guru-shishya Parampara, where Guru teaches shishyas in Gurukula, Mattha, Akhada, and Viharas.

Buddhism also has lineage of Gurus. Tibetan Buddhism has lineage of Lamas who teach in Gompas and Stupas.

The different Sampradayas were: Vaishnava- who believed in Vishnu, Shaiva- believed in Shivji. Shakta-believed in different forms of Devi Durga, Ganapatya- believed in Ganesha and Saur- believed in Surya Deva (Sun God). Numerous branches and sub-branches have evolved from these Sampradayas.

SANSKRIT AND GURUKULAS

Sanskrit is a highly sophisticated language that is known for its precision and elegance. It is said to have evolved from the Vedic language, which was used to compose the ancient Hindu scriptures known as the Vedas. The language used in Vedas was prevalent in the form of different dialects. It is termed as Vedic Sanskrit. Each Veda had its book of grammar known as **Pratishakhya**. The Pratishakhya explained the forms of the words and other grammatical points. During this period, a vast literature - Vedas, Brahmana-Granthas, Aranyakas, Upanishads and Vedangas had come to existence which could be termed as Vedic Literature being written in Vedic Sanskrit.

Panini wrote the master book of grammar named Ashtadhyayi. Literary Sanskrit and spoken Sanskrit both followed Panini's system of language. Sanskrit has been the source of later languages and literature in Bharat. **Pali** and **Prakrit** were first to develop from Sanskrit. Most of the Buddhistic literature is written in Pali and of Jain's in Prakrit. A vast amount of Buddhist and Jain literature was also written in Sanskrit simultaneously. It is said that all the modern Bharatiya languages evolved from Sanskrit.

Scripts

Sanskrit is written in many scripts like Brahmi, Sharada, Tibetan, Mongolian, Swayambhu, Devanagari, Kharoshti, Galik, etc. Sanskrit was common during Gupta Empire.

Kadamba script was common in Karnataka. By the 6th century, it became old Kannada script and during Chalukya's rule, it was called Kannada script. These inscriptions are found in Mangalash Mahakuta pillar, Kanchi Kailashnath temple, the Pattadakal Virupaksh temple.

During Gupta's rule, Sanskrit script evolved in Siddha-Matrika script/Old Nagari script. This old Nagari script gave rise to Punjabi, Bengali and Assamese scripts. It was introduced in Maharashtra in 8th century, replacing Kannada-Telugu script. Later it developed into Sharada script in Kashmir and Punjab, proto-Bengali/ Gaudi script in Bengal and Orissa.

Gaudi was replaced by Oriya script in 14th century. Brahmi script was promoted by Ashoka. Kharoshti was used in Gandhar written from Right to Left.

Galik script was used in Mongolia written from top to bottom. Grantha script was in Tamil Nadu giving rise to Malayalam, Tigalari, Sinhala, Thai, Javanese

Sharada script in Kashmir gave rise to Gurmukhi, Takri, Landa script.

Ranjana script was used in Nepal. Its variations Lantsha, Wartu were used in Himalayas, Tibet, China, Mongolia.

Newar script was in Nepal. Tirhuta/Maithilli in Bihar/Nepal, Tigalari in Malaad and coastal Karnataka, Sinhala in Sri Lanka.

Siddham (Buddhist) script was in Japan, China & Korea, also known as Siddha Matrika. Bhaiksukhi in 11th-12th century in Northeast, Tibet, Nepal.

Tibetan is the Buddhist script of Tibet Phags Pa written vertically.

Soyambo and zanabazar script was in Tibet and Mongolia. Tocherian, Khotanese, Tumshuqese, Uighur Brahmi known as Turkmenistani- Central Asia. Burmese, Thai, Khmer, Tai Thane - in South East Asia. Scripts like Modi, Kaithi, Saurashtra, Jainanagari in Gujarat.

Daily Sanskrit newspaper published since 1970 from Mysore is 'Sudharma' and from Gujarat-Vartman Patram, Vishwasya Vrittantam.

Villages known for the usage of Sanskrit for day-to-day communication: Mattur in Karnataka, Jhiri and Mohad in Madhya Pradesh Ganoda, Khada and Koparan in Rajasthan, Bavali in Uttar Pradesh, Shyamsundarpur in Orissa.

ANCIENT GURUKUL SYSTEM OF BHARAT:

Bharat is recognized to be one of the oldest civilizations in the world. It was a center for higher learning in ancient times and contributed greatly to the field of Mathematics, Astronomy, Metallurgy and other sciences. Vedic science was so advanced that it could be compared with the present day's scientific inventions.

Rishis chanted mantras and hymns which were passed on from one generation to another through memorization by word of mouth. The Rishi, also the Guru who imparted knowledge to his shishyas or sons, continued this tradition through memorisation. Vedas also called Shruti were heard, remembered, chanted, and the cycle continued until they were compiled. But for hundreds and thousands of years before they were compiled, they were Shruti.

In later Vedic period and till the Mahabharata era, students in groups, stayed at the Guru's ashrams until their education was completed. Bigger Gurukulas served as universities, i.e. centres of higher education. Thereafter, in addition to Gurukulas and universities, temples and mutthas emerged as learning centres. There were around seven lakh and thirty two thousand Gurukuls.

Preservation of ancient culture, study of the scriptures, character building, development of personality, religious duties, inculcation of the spirit of individual roles towards family and society, discipline and self-dependence were the key factors considered while imparting education.

Though thousands of temples and educational institutions were destroyed by Islamic invaders, the concept of temple education declined to some extent but not fully. The educational flame was kept alive. Under Islamic rule, the temples which were earlier run under the patronage of the rulers, were then supported by the local Hindu population. According to the book **The Beautiful Tree** by Shri Dharampal, temples were not only the centres of primary education for all Varnas but also a nucleus of important social, economic, artistic and intellectual functions. It is known from the travel records of Xuanzang (Hiuen Tsang), Faxian (Fa-Hien), and many other references that in those universities,

students from far-off places used to come to study. Varanasi was the main center of education since ancient times.

From the Pali literature, it is known that kings like Prasenjit donated many villages to those Brahmins who were involved in the field of Vedas. They used to run Gurukul for the distribution of Vedic education and helped in the study of Vedic literature. This tradition was often continued by most of the rulers and there are many inscriptions of the Gurukul running in the villages donated to the Brahmins of Southern Bharat. The developed forms of these were the Nalanda, Takshshila... Universities.

Reputed Gurus and their disciples

Let's now know some famous Acharyas/ Guru (teacher) and their disciples, as in Sanatan Sanskriti, a Guru is highly revered for his knowledge & also is the mentor for spiritual awakening of his disciples:

Name of Rishi	Name of Guru
Ram	Vasishtha
Bhishma	Parshuram & Vishwamitra
Bheem	Dronacharya & Balaram
Pandu	Bhishma and Kripacharya
Krishna	Sandipani
Karna	Parshuram
Pandav / Kaurav	Dronacharya and Kripacharya
Dronacharya	Parshuram
Parshuram	Vishwamitra

GURU

The teachers in Gurukuls were called Gurus. As per Skanda Purana, there are seven types of Guru. (i) Suchak Guru – who teaches different subjects in schools & institutions (ii) Vachak Guru – who orates & guides on who is God (iii) Baudhak Guru – who guides towards spiritualism and relevant methods – (iv) Nishidh Guru – who teaches black Tantra tricks to harm others, wise men avoid such type of Guru (v) Vihit Guru – who guides on how to initiate the journey of spiritualism (vi) Karnakhya Guru – who encourages to become an ascetic leaving the rest (vi) Param Guru – who wards off fears with Shakti Path & frees you from the bondage of life & death. One obtains Param Guru due to the merits of past births

The Mahabharata war proved to be a milestone in Bharatiya history. The intellectual vacuum created after the war resulted in the deterioration of the societal structure which gave rise to Darshan (Philosophy) that rejected Vedas viz. Buddha darshan, Jainas, Ajivikas, etc. Due to the initial patronage by Maurayan Ashoka, Buddhism spread fast. But it didn't have as much effect on the Gurukul system as it had on the principles of Vedic Dharma (As Hinduism was called back then). The Gurukul system continued, but much earlier Vedic Vishwavidyalayas were slowly converted into Bodh maha viharas

as was the case with Takshashila and many others. Vedic dharma took the backseat while Buddhism was dominant.

Though Adi Shankaracharya revived the Vedic knowledge, later Muslim invaders made a major impact towards destruction of Gurukul system. When Macauley introduced the British education system, it delivered the death blow to the already dying Gurukul system.

Gurukul (Universities)

Bharat was home to numerous ancient universities where students from across the world came and studied. Some of the famous universities which flourished in ancient Bharat, including the world-famous Takshashila and Nalanda universities:-

1. **Taxila or Takshashila University-** It is believed Kuru prince Duryodhana laid the foundation of Takshashila University at the birthplace of his mother Gandhari. This region, finds mention in the Mahabharata and other ancient Hindu scriptures as 'Gandhara'. Sanskrit linguist and grammarian Panini; physician Charaka; Surgeon Jivaka Komarabhacca; philosopher, economist, jurist and royal advisor Chanakya; author Vishnu Sharma; Maurya emperor Chandragupta etc are some of the greatest scholars who studied here. Over 10,500 students from across Aryavrat and from places as far as Greece, Arabia and China studied in this university, where around 60 courses were available.
2. **Mithila University-** this learning centre had been in existence since the time of Raja Janak, the father of Sita. It was prominent seat of Brahmanical system of education. Here Raja Janak held religious conferences where Rishis and the learned took part. This university taught literature and fine arts, science subjects, the scriptures including the Vedas, Nyaya Shastra, and more. Two subjects that later gained prominence in Mithila University were Nyaya (jurisprudence) and Tarka Shastra (Logic). Examination was tough. Students attained and received degrees only after they cleared the Salaka-pariksha (test) at the completion of their courses.
3. **Telhara University-** This ancient learning centre is located at Telhara, at a distance of around 40 km from Nalanda University in Bihar. Archaeologists have traced the remains of this centre during the course of an excavation at Telhara, which began in 2009. The ruins were discovered in 2014. Chinese travellers Hiuen Tsang and Itsing have mentioned in their travel accounts about Telhara University as a seat of higher research and a competitor to Nalanda University. Hiuen Tsang wrote about a three-storeyed structure, prayer hall and a platform to seat over 1,000 monks and students of Mahayana Buddhism at this university, the evidence of which were found during the excavations. It was also a centre of Tantric Buddhism. It was destroyed and set on fire by Bakhtiyar Khilji during the same time when he destroyed Nalanda University, i.e. in 1193 CE. Khilji destroyed three ancient universities of Bharat.
4. **Nalanda University-** This ancient center of higher learning, located in the ancient kingdom of Magadha, presently seven miles north of Rajgriha in Bihar, is one of Bharat's oldest universities. A seal identifying a monarch named Shakraditya believed to be Kumaragupta I,

the Gupta emperor, is considered the founder of Nalanda University. The university accommodated over 10,000 students and 2,000 teachers. Subjects taught ranged from Mahayana Buddhism, the Vedas, Logic, Sanskrit Grammar to Medicine, Samkhya, and many more subjects in every field of learning. According to traditional Tibetan sources, the library at Nalanda University was spread over three large multi-storeyed buildings. One of these buildings had nine storeys that housed the most sacred manuscripts. There were three methods of teaching, namely verbal and explanatory, lectures and debates and discussions. Around a 100 lectures were delivered everyday. Students traveled for education from Tibet, China, Korea, and Central Asia.

Nalanda University was destroyed by Bakhtiyar Khilji, in 1193 AD. He set fire to the libraries and killed the Acharyas and students. According to an account by Persian historian, Minhaj-i-Siraj in his book Tabagat-i Nasiri, the manuscripts burnt for several months. This proves that Nalanda University libraries accommodated lakhs of manuscripts.

5. Sharada Peeth Temple University -This temple university once flourished as one of the biggest centres of learning in ancient Bharat. Kashmir is also known as Sharada Desh. Scholars worth mentioning are Kalhana, historian and author of Rajtarangini, a history book on Kashmir in Sanskrit; Philosopher Adi Shankara who consolidated the doctrine of Advaita Vedanta; Vairotsana, a Tibetan translator; Kumarajiva, a Buddhist scholar and translator; Thonmi Sambhota, a Tibetan scholar who invented the Tibetan script.

The Sharada script owes its development and popularisation from Sharada Peeth temple university.

6. Vallabhi University- This university was set up in line with Nalanda University by the kings of the Maitraka dynasty. Maitrakas were feudatories of the Guptas, who established their capital at Vallabhi in Saurashtra of Gujarat. Chinese traveler Itsing, who studied at Nalanda and visited Vallabhi University during the 7th century, describes it as a great learning centre which was renowned for religious tolerance and mental freedom. Vallabhi University earned the patronage of not only the rulers but also the rich of the region.

The Arabs destroyed this university in the 8th century.

7. Odantapuri University- This university was set up in Odantapuri, also called Uddandapura in Bihar, then Magadha, by Pala king Gopala in the early 7th century. Odantapuri University attracted students from far and near, but could not attain much fame like Nalanda or Vikramshila. According to the Tibetan sources, the learning centre accommodated around 12,000 students at some point of time. Subjects taught ranged from the Vedic scriptures to Buddhism. Acharya Sri Ganga of Vikramshila was a student from this university.

8. Vikramshila University- This learning centre, located 50 km east of Bhagalpur in Bihar (then northern Magadha), was established by Pala king Dharampala in the later 7th century.

Dharampala was the son of Gopala, who established Odantapuri University. Over 100 teachers taught over 1000 students here. Like all ancient universities, this learning centre also housed several temples. Around 108 scholars were appointed as the in-charge of the various temples. Six additional Acharyas were appointed for supervising and managing the temples and the learning centre. The Kulpati or Mahasthvir, was the highest authority of the University. There were six huge colleges with a big building at the centre. This central building was termed Vigyan Bhawan. All buildings were connected through six gates. A Dwar Pandit was appointed to keep guard at the main gate.

Atisa Dipankara, a founder of the Sharma traditions of Tibetan Buddhism, was one of the students from this University.

Bhaktiyar Khilji, who destroyed Nalanda University, destroyed Vikramshila University in 1203 CE. Like in Nalanda, he killed the monks and students.

9. Somapura University- Pala king Dharampala also established Somapura University in the later 7th century. This university was almost as big or bigger than Nalanda University. The centre taught a wide range of subjects pertaining to Hinduism, Buddhism, and Jainism. Influence of the three traditions is still visible in the ornamental terracotta carvings on the outer walls of the university.

10. Bikrampur University-Dharampala also established Bikrampur University in the late 7th century at Munshiganj in Bengal, presently Bangladesh. Excavations in 2013 led to the discovery of this learning centre.

Bikrampur University attracted students from across the country and the world from as far as China, Tibet, Nepal and Thailand. The centre taught a wide range of subjects with special importance to Buddhist education. During 11th century, the centre had around 8,000 students.

11. Pushpagiri University-This centre of learning, located in ancient Kalinga, across Cuttack and Jaipur districts of present Odisha, was established in the last years of BCE. Pushpagiri University is as old as Nalanda University. It is said that it was established by Emperor Ashoka. The university campus was spread across three adjoining hills - Lalitgiri, Ratnagiri and Udayagiri. The centre taught many different subjects and attracted students from across the world.

Pushpagiri University finds mention in the writings of Chinese traveller Xuanzang, who visited Bharat in 7th century. Most universities and Gurukulas earned the patronage of not only local rulers but also rulers and the rich from far off places. A 3rd century inscription of Andhra Ikshvaku king Virapurushadatta mentions about the donations given by the king for the setting up of a stone mandapa at the university. 9th century Buddhist monk Prajna from Gandhara also spent some time at this university.

12. Morena Golden triangle University - Morena in the Chambal division of Madhya Pradesh was a hub of university education from the 8th century. An inscription found in the Chaunsath Yogini temple in Mitavali mentions about Mitavali, Padavali and Bateshwar temples as a Golden Triangle within which a famous university existed.

The temples in these three regions date back from 8th to 12* century. The temples were built by the Gurjar Pratihars and later expanded and renovated by the Kachchhapaghata rulers. These three places in Morena hosted learning centres for different subjects. At the Chaunsath Yogini temple, Astrology and Mathematics were taught.

The rays of the sun fell in the temple in distinct designs and patterns given the circular structure. Bateshwar temples were the centre, the nucleus of the Golden Triangle University.

13. Jagaddala University- Jagaddala University was set up by Pala king Rampala in the early 11th century in Varendra in North Bengal, now in Bangladesh. Tibetan sources mention five great ancient universities that also included Jagaddala, the other being Nalanda, Odantapuri, Vikramshila, and Somapura. According to the same source, the five ancient universities formed a network under state administration and were interlinked.

Jagaddala taught a wide range of subjects including Sanskrit, as taught in the other interlinked universities. One of the special subjects taught was Vajrayana Buddhism. Subhasitaratnakosa, one of the earliest dated anthologies of Sanskrit verses, is believed to be compiled by Buddhist scholar and poetry anthologist Vidyakara at this university. Besides, a large number of Tibetan sacred texts were composed or copied at Jagaddala University.

14. Nagarjuna Vidyapeeth-Nagarjuna was an ancient Bharatiya Buddhist philosopher from Andhra Pradesh. Nagarjuna Vidyapeeth is dedicated to him. This ancient university was located on the banks of the Shri Krishna River. It flourished in peak during the 7th and 8th centuries. Students from foreign countries came to study here.

The multi-storey library of Nagarjuna Vidyapeeth accommodated manuscripts pertaining to the various branches of knowledge from medicine, science to philosophy, minerology, geography including teachings of Buddhism.

15. Kanthalloor Sala University-Excavations in the southern part of Bharat are yet to happen on a large scale. Valiyasala in Thiruvananthapuram of Kerala is home to Kanthalloor Sala - one of the most famous universities of Bharat. It dates back to 9th to 12 century. Located within the premise of a group of temples, Kanthalloor Sala University taught 64 different subjects including atheism. Students from across the country and beyond borders including Sri Lanka came to study in this temple university. This university was also called Nalanda of the south. The documentary is based on several evidences, both archaeological and literary. The educational centre was known for following a strict educational and disciplinary code and for banning corporal punishment and brawls within the campus.

16. Nadia University- Nadia, formerly called Navadweep, located at the confluence of Ganga and Jalangi rivers in Bengal, was set up after the destruction of Nalanda and Takshashila universities. Many subjects including Logic, Vyakaran, Politics and Law were taught here. There were three centers, namely Navadweep, Shantipur and Gopaalpura, at the university site. There have been records of students studying for as long as 20 years.

15th century Bharatiya philosopher and logician Raghunatha Shiromani set up a school of Logic at Nadia University.

Nadia University produced innumerable scholars from time to time. Worth mentioning are Jaideva who composed Gita Govind.

SOME PROFESSIONAL STUDIES TAUGHT IN THESE UNIVERSITIES :

- | | | |
|------------------------|--------------------------|--------------------------|
| 1. Agni Vidya | 16. Gemstones and Metals | 30. Kumhar Vidya |
| 2. Vayu Vidya | Vidya | 31. Laghu Vidya |
| 3. Jal Vidya | 17. Akarshan Vidya | 32. Takkas Vidya |
| 4. Antariksh Vidya | 18. Prakash Vidya | 33. Rang Vidya |
| 5. Prithvi Vidya | 19. Sanchar Vidya | 34. Khatwakar Vidya |
| 6. Surya Vidya | 20. Viman Vidya | 35. Rajjukar Vidya |
| 7. Chandra and Lok | 21. Jalyan Vidya | 36. Vastukar Vidya |
| Vidya | 22. Agneya Astra Vidya | 37. Pakwan Vidya |
| 8. Megh Vidya | 23. Jeev vigyan Vidya | 38. Vaahan chalak (Vidya |
| 9. Dhatu Urja Vidya | 24. Yagna Vidya | Waterways |
| 10. Din aur raat Vidya | 25. Vyapar Vidya | management) |
| 11. Shrishti Vidya | 26. Krishi Vidya | 39. Gaushala Vidya |
| 12. Khagol Vidya | 27. Pashu palan Vidya | 40. Bagbani Vidya |
| 13. Bhugol Vidya | 28. Yaan Vidya (Vehicle | 41. Van Vidya |
| 14. Kaal Vidya | designing) | 42. Sahyogi Vidya |
| 15. Bhugarbh Vidya | 29. Vidya Ratnakaar | 43. Pakshi palan Vidya |
| | Vidya | |

EMINENT SANSKRIT AUTHORS

1. Adikavi Valmiki- before becoming a saint he was earning his livelihood as a dacoit . One day Rishi Agastya met him and asked him why he committed such crimes. ‘To support my family’ replied Mrigavyadha, the dacoit. ‘Will they be sharing your sins also?’ questioned Agastya’. Mrigavyadha was deeply disappointed when he received the reply in negative by his parents, his wife and the other members of his family. Shocked and under deep sense of remorse, he started meditating and went into Samadhi. Ants built their home around him and his body took the shape of an ant-hill. God Varuna feeling very much moved by his condition and his austere penance, washed off the mud and cured his wounds. Thereafter he was called Valmiki – arising out a Valmika - an ant hill. Once, he cursed a hunter on killing Kraunch bird in the original chhandas. Narada advised Valmiki to write in the same poetic meter the life and deeds of Shri Ram. Accordingly, Valmiki wrote Ramayana, the Adikavya, in seven sections and 24000 couplets. Ramayana is the source of many other works in other Bharatiya languages like Ramcharitamanasa of Tulsidas in Hindi, the Ramayana in Assamese by Madhava Kandali, Ramayana in Bengali by Krittibas, Ramayana in Marathi by Ekanath, Kamba Ramayana in Tamil by Kampan, Mulla – Ramayana in Telugu by Mulla, Adhyatma Ramayana in Malayalam by Ramanuja Edutachhan and many more.

2. Maharishi Veda Vyasa- son of Rishi Parashar, spent his life on Badri fruits only in Badrikashram and thus came to be known as Badarayan. He was born on an island and hence was called Dvaipayana. He was dark in colour and thus acquired the title of Krishna and since he classified the available knowledge of Veda, he got the title of Vedavyasa. He wrote the eighteen Purans. He also wrote Brahma Sutras and the Bhagwat Puran – the touch- stone of human knowledge. He wrote Mahabharata – the great epic which is known as the encyclopedia of knowledge. He was the father of Dhritarashtra, Pandu and Vidura, prominent characters of Mahabharat. Vyas dictated the script of Mahabharata to Ganesh who wrote it on bark leaves by breaking one of his tusks.
3. Kalidas- Kalidasa's poetic genius has brought Sanskrit poetry to the highest elegance and refinement. Numerous honours and titles have been conferred upon him, viz. Kavikulaguru, Kavikulashiromani, Dipashikha Kalidasa, etc. There are about 41 works which are attributed to Kalidasa the following seven world famous works are composed by him: two Lyric Poems: Ritusamhara and Meghaduta; two Mahakavyas : Kumarasambhavam and Raghuvamsham;. Three Plays: Malavikagnimitram, Vikramorvashiyam and Abhijyanaashakuntalam. Ritusamhara, a lyrical poem appears to be the first work of the young poet. Here, the natural, scenic and floral beauty of six seasons, viz., the grishma (summer), varsha (rainy), sharad (autumn), hemanta (dewy), shishira (winter) and vasanta (spring) is picturesquely described. He composed Meghaduta in Mandakranta meter, wherein an exiled love - lorn yaksha at mountain Ramgiri delivers his sandesha-message to his beloved residing in Alakapuri (in mountain Kailasa) through a cloud – messenger. On the pattern and imitation of Meghaduta more than one hundred Sandesha-Kavyas have been composed mostly in Mandakranta metre. In Kumarasambhava, the poet has described the penance of Parvati to win Shiva's love, their wedlock finally resulting in the birth of Kumara Karttikeya, the warrior god who killed demon Taraka. In Raghuvamsha, the poet has dealt with the heroic deeds of the solar dynasty(Suryavansh). It begins with the description of King Dilipa and ends with the narrative of Agnivarna. It abounds in beautiful descriptions and narratives, to name a few, go-seva by Dilipa, Raghu's digvijaya, Indumati-svayamvara, Aja-vilapa, etc. Malavikagnimitram is an intrigue drama which is based on the love-story of Malavika and King Agnimitra. Vikramorvashiyam is based on the love story of the Apsara(celestial nymph)- Urvashi and King Pururavas. Abhijnyana-shakuntalam is the love-story of Shakuntala and King Dushyanta.
4. Bhasa- In the year 1910, Mahamahopadhyaya T. Ganapathi Shastri of Travancore discovered a collection of 13 plays with a similarity of expression and construction and declared them as the compositions of one single author, Bhasa. The greatest Sanskrit poet Kalidasa mentions his name with respect in the prelude to his first drama, the Malavikagnimitram. The one act plays, based on Mahabharata are – Pancharatnam, Dootavakyam, Madhyamavyayogam, Dutaghatotkacham, Karnabharam and Urubhangam. Dramas, based on Ramayana are - Praitimanatakam and Abhishekanatakam, one is based on Shrimadbhagavatam is Balacaritam and the others based on Brihatkatha are Pratijnayaugandharayanam and Svapnavasavadattam. Avimarakam and Daridracharudattam are based on Lokakathas. Bhasa's Svapnavasavadattam is a masterpiece of Sanskrit literature.

5. Harsha- Harsha, also known as Harshavardhana, the second son of Prabhakarvardhana and younger brother of Rajyavardhana ruled a large empire in Northern Bharat from 606 to 647 A.D. He was an orthodox Hindu but later became Buddhist convert. Emperor Harsha himself was a great scholar who patronised and sponsored many poets like Banabhatta and Mayura. We come to know his life-history from the famous work Harshacharitam composed by Banabhatta, the foremost Sanskrit prose writer. Harsha is the composer of three Sanskrit works : Nagananda, Ratnavali and Priyadarshika. The first one is a nataka whereas the remaining two are natikas. The Nagananda is a play in five acts which describes the self- sacrifice of Jimutavahana, prince of Vidyadharas. Besides the main theme, there is an sub-plot in the drama in which main character's love for Malayavati has been depicted. The Ratnavali, Harsh's masterpiece, is a natika in four acts which deals with the story of the union of king Udayana and Ratnavali, daughter of the king of Ceylon. Later dramaturgists like Dhananjaya etc. regarded Ratnavali and Priyadarshika as standard Sanskrit dramas. The Priyadarshika is also a natika in four acts, having for its theme the union of Udayana and Priyadarshika, daughter of King Dridhavarman.
6. Panini Panini's Ashtadhyayi is the oldest complete grammar available. Panini has mentioned the names of ten grammarians – Apishali, Kashyapa, Gargya, Galava, Chakraverman, Bharadwaj, Shakatayana, Shakalya, Shaunaka and Sphotayana. Panini's Ashtadhyayi contains 4000 sutras presented in eight chapters of four quarters each. Ashtadhyayi is written in sutra style. A sutra has to be brief, precise and unambiguous. The starting points of this work are the famous Maheshwara Sutras in which the sounds have been broadly divided into three categories – Swara, Antastha and Vyanjana. He categorises the words in two main groups i.e. Subanta and tinganta, and based the verb forms on ten lakaras, three persons and three numbers.

Maheshwar sutra: Shiv sutras or Maheshwar Sutras are believed to originate from Shiva's Tandava dance.

नृत्तावसाने नटराजराजो ननाद ढक्कां नवपञ्चवारम्।
उद्धर्तुकामः सनकादिसिद्धादिनेतद्विमर्शो शिवसूत्रजालम्॥

At the end of His Cosmic Dance, Shiva, the of Dance, with a view to bless the sages Shaunak and so on, played on His Damaru fourteen times, from which emerged the following fourteen

Sutras

अइउण्

ऋलृक्

एओङ्

ऐऔच्

हयवरट्

लण्

जमडणनम्

झभञ्
घढधष्
जबगडदश्
खफछठथचटतव्
कपय्
शषसर्
हल्

These are phonemes, the sounds using vocal cords. Maharshi Kātyāyana's Vārttikakāra is an elaboration on Pāṇini's grammar. His vārttikas are considered to be very important for Pāṇini's grammar and are considered to be a core part of the Vyākaraṇa (grammar).

The saying that 'Sanskrit is best fitted for Computer' owes its origin to the great sage Panini. The names of his parents were Panin and Dakshi. He was born at Shalatur village near Peshawar and pursued his studies at Takshashila University.

7. Patanjali The word Patanjali has been explained as Patantyah Anjalayayasmai i.e. one for whom the hands are folded as a mark of respect. Patanjali has been regarded as a great sage and referred to by many names such as Gonardiya, Phani, Adhipati, Sheshraja etc. According to a legend, he is considered to be an incarnation of Sheshanaga. Patanjali was an expert of at least three branches of Sanskrit studies namely yoga, vyakarana, and ayurveda. An ancient verse regards him as a sage who cleansed dirtiness of mind with yoga, of speech with grammar and of the body with ayurveda. Thus Patanjali contributed immensely towards the science of meditation, science of language and science of medicines. Patanjali's Yogasutra is the main basic work of Ashtangayoga Philosophy. Ashtanga Yoga is the eight-limbed path of conscious living and spiritual practice that guides one towards Self-Knowledge, liberation and cessation of personal suffering. The eight angas are Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi. The **Ashtang Yog** or eight limbs mean:

- YAMA – Restraints, moral disciplines or moral vows.
- NIYAMA – Positive duties or observances.
- ASANA – Posture.
- PRANAYAMA – Breathing Techniques.
- PRATYAHARA – Sense withdrawal.
- DHARANA – Focused Concentration.
- DHYANA – Meditative Absorption.
- SAMADHI – Bliss or Enlightenment.

'Yoga' is the control of the senses and the states of chitta. Patanjali's Mahabhashya is the first and oldest existing commentary on the Ashtadhyayi of Panini dealing with 1228 rules of Panini. It is an encyclopedic work of this branch with brilliant quotations, the number of which may

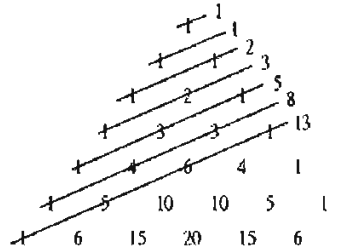
exceed 700. The whole discussion is presented in conversational style of question–answer or objection–refutation etc. It is quite evident that Sanskrit was the spoken language at that time.

The theory of gravitation has first been explained in Mahabhashya only. The work on medicines Nidan sutras or Samvediya-Nidan Sutras is also accepted as the real contribution of Patanjali to the science of medicines. Some other works attributed to him are Mahanada, Charak–parishkara, Siddhanta–sarawali, paramartha–sar and lok shastra. He received his education at Takshashila and taught students at Pataliputra.

8. Adi Shankaracharya Shankara in the short span of his life (only 32 years), wrote Bhashya on Upanishad and Gita. He also composed 240 stotras, prakaran granthas, introductory books such as Upadesh Sahasri, Vivek Chudamani, Aparokshanubhuti etc., in all eighty books in number. He was a mystic, a saint, a scholar, a poet and above all a practical reformer and an able organizer. Shankara was born in Kalady village in Kerala. Various evidences prove his date as 509 BC to 477 BC. His mother Aryamba was a pious devotee of Shiva. His father Shiv Guru left him when he was only three years old. At the age of five only, he had studied all the Vedas and Vedangas. Staying at Gurukul, he went to beg alms from a house. The lady was so poor that she could only give a dry Amla and she felt very sorry for it. Shankara prayed to Goddess Lakshmi who showered gold coins in the shape of Amla. This stotra is known as Kanakadhara stotra. At the age of seven he returned from Gurukul and wanted to renounce the world, but his mother refused. He entered a river where a crocodile caught him. He screamed saying to his mother the crocodile would only release him if he is permitted to renounce the world. The helpless mother granted him permission for renunciation with the promise that he would perform her last rites. Thus, Shankara left and on the way, crossed rivers, hills, forests, towns, meeting varied personalities and limitless varieties of the creation experiencing the Brahman-the ultimate reality in every living and non-living creature. He came across a cave in which Govinda Bhagwadpad was deeply engrossed in Samadhi. The cave was on the bank of the river Narmada and its flooding waters started entering the cave. Shankara adjusted the pot in such a way that the water could not enter the cave. This led Govinda to initiate him into Sanyasa and taught him the four Mahavakyas – Tat tvamasi, Prajnyanam Brahm, Aham Brahmasmi and Ayamatra Brahm. Here Shankar attained Siddhis through Yoga and meditation and obtained supernatural powers. From there, he visited Kashi and then went to Badari Dham and wrote the Brahmasutra Bhashya. While he was proceeding towards Kedar – ashram, he saw Kumarila Bhatt trying to immolate himself in fire as a revenge for his own act of denying the existence of God. Kumarila requested Shankar to meet Mandan Mishra and make him his disciple who will propagate the philosophy of Vedanta. Unable to save Kumarila, Shankara went to Mandana Mishra's house and defeated him and his wife Ubhay Bharati in Shastrartha. Acharya Mandan Mishra got engrossed in the propagation of Vedanta. From here, Shankar proceeded towards Shri Shailam. where he got the news of his mother's death and true to his promise, he went and performed her last rites. To establish geographical, historical and spiritual integrity in Bharat he established four matthas in four directions of the country – Jyotirmath in North, Govardhan Math at Puri in east, Shringeri Matha in Karnataka in south and

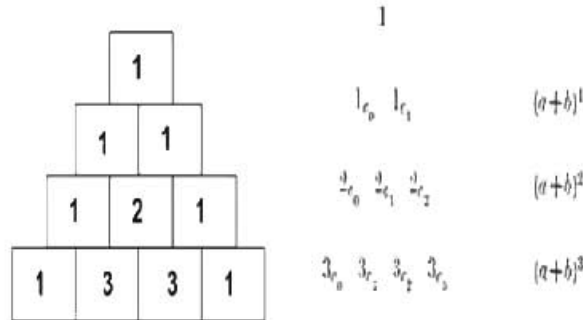
Dwarika math in Gujarat in west and established Kanchi Kamakoti Peetham at Kanchi as his abode.

9. Kalhana - Kalhana is the poet who composed the first historical Kavya Rajatarangini which portrays the history of Kashmir. It has covered the entire period from 1300 B.C. to 1150 A.D. Rajatarangini contains eight tarangas (wave). He has surveyed the royal collections with the kings, puranas, various inscriptions, anthologies, seals and coins to make his work authentic. The Kavya starts with King Govinda of 1300 BC and contains the most authentic chronological descriptions of various prominent incidents. He has showered praises on the pious ambitions of Rani Chidda. This poetic work contains beautiful figures of speech and is written mostly in Anushtubh meter (musical note). Kalhana was a resident of Kashmir. His father Champak was a true follower of King Harsha of Kashmir. After the assassination of the King, Champaka left politics and thus Kalhana also was deprived of the royal grace. Kalhana was a Shaiva but also appreciated Buddhism. He started writing this work in 1148 AD and completed it in nearly three years.
10. Jaideva -Jaideva was a poet in the court of Raja Laxman Sen of Bengal who flourished in 12th Century A.D. His work has touched the heart of every Bhakta of Krishna. The famous Geeti Kavya Geeta Govinda has influenced the later poets, painters and dancers to base their performances on this beautiful work. This Kavya describes the pious love of Radha and Shri Krishna which represents the bondage of Atman with Paramatman. It abounds in rhythmically matching groups of words. Even the long compounds can be tuned perfectly to create a soft musical effect. Every song is composed in fixed Raga and tala. These songs are sung in the whole of Bharat at special occasions and festivals. It is the best lyric Kavya of Sanskrit Literature.
11. Pingala- Pingala brought Paninian categorical methods to the mathematical classification of metres in his work Chhandasutra, "Aphorisms on Prosody". In Sanskrit every syllable belongs to one of two subsets, depending on their duration (matra*), labelled l and g (by Pingala himself). a metre is such a sequence of l and g- Laghu and Guru (The metre as applied to a stanza is a set of sequences, one for each line). Chhandahsastra (Pingala sutra) means the science of meters or Chhandah, it is the timing for pronouncing syllables. The book contains 315 sutras distributed over eight chapters. The Sanskrit prosody consists of two basic units: Laghu (single matra) and Guru (two matras). The systematic enumeration of Chhandas with predetermined arrangements of Laghu (short syllables) and Guru (long syllables) syllables are described in Chhandahsastra. Fibonacci sequence are the mysterious collection of numbers stand for 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233... generally represented by a mathematical equation where $n \geq 3$.



spiral geometries in sea creatures and also branching proportions of the human body. These sequences of numbers are believed to be first discovered by the Italian Mathematician Leonardo Pisano Bigollo also called Fibonacci (1170-1250). But this was well known to Ancient Hindus even before Leonardo's time. The first one to give metrical sciences in Bharat whose writings demonstrate the understanding of the Fibonacci sequence is Acharya Pingala, who referred this sequence of numbers as Matru Meru.

In the 10th century CE, Halayudha wrote a commentary elaborating on the Chhandahsastra, giving the sutras for the formation of Meru Prastara or Pascal's triangle which in turn also gives Matru Meru or Fibonacci sequence:



SHALLOW DIAGONALS OF THE MERU PRASTARA SUM TO THE FIBONACCI SERIES

Pingala's Chhandahsastra sutra not only describes Pascal's triangle, Binomial expansion and Fibonacci sequence. It also explores numerous recursive algorithms, computation of Binomial coefficients, the application of repeated partial sums of sequences and the formula for summing a geometric series and many more.

$$f_n = f_{n-1} + f_{n-2}$$

12. Vishnusharma- Vishnusharma is the author of Panchatantra, the tales written for innocent children to impart knowledge of politics, economics, worldly wisdom and other day today gimmicks. Generally the whole story is in prose but the moral or the lesson derived from them is usually given in verses. Panchatantra and Hitopadesh are the most popular works of this style. It was written by him to instruct the three dull Princes of King Amarkirti of Mahilaranya. As the name itself denotes, Panchatantra is divided into five chapters – 'Tantra'. 'Tantra' means the secrets. Five secrets of good administration, kingship and worldly wisdom have been expounded with the help of the animal fables. There is a quaint humour in these fables because the animals are made to discuss dharma, gods, myths, legends, politics, economics, ethics etc.

These five tantras are Mitraheda (separation of friends), Mitrasamprapti (union of friends), Kokolukiya (peace and war), Labdhapranasha (loss of what is gained). And aparikshitkarakam (doing things without pre-examination). Each division of Panchatantra has its main story, but many others have been interwoven to prove the main one. The figures of speech used are Anuprasa, Upama, Rupaka, Utpreksha etc.

The most important of all the editions of the Panchatantra is Hitopadesha. It is full of good advice imparted through stories. It has been written by Narayan Pandit in about 1400 AD. under the

patronage of King Dhawalchandra of Bengal. The poet himself has accepted that Hitopdesha is based on Panchatantra.

Panchatantra has five 'Tantras' but Hitopdesha has only four – Mitralabha (winning of friends), suhridbheda (loss of friends), vigraha (war) and sandhi (peace). Hitopadesha is a manual of politics for Kings in internal and foreign policy.

13. Vastasyayana mallanag - Vatsyayana's Kama Sutra has 1250 verses, distributed in 36 chapters. It is an ancient text, considered to be the standard work on love in Sanskrit literature. It is the primary Sanskrit work on human sexuality, covering topics such as the art of living well, the nature of love, finding a life partner, and managing relationships. Sanatan Dharma encourages and teaches one to pursue the path of pleasure, intimacy, and love in all its forms. It is a book about the art of living, from finding a partner to maintaining power in a marriage.

SANSKRIT NATYA (DRAMA)

Drama or 'Naatya' is considered as a most beautiful part of Sanskrit literature. The earliest forms of Dramatic literature in Bharat are represented by Samvada – Suktas (hymns which contain dialogues) of Rigveda. Bharata muni is the founder of the Science of music and drama giving Natyashastra, the earliest known book on Sanskrit drama.

Legend has: The gods under the leadership of Indra, expressed their desire for some sort of drishya (enjoyable by the eye) Shravya (delightful to the ear) and Kridanaka (entertainment to fulfil the desire). Amritamanthan and Tripurdaha were the first two plays, which were staged on the occasion of crowning of Indra.

Vastu (the plot), neta (the main character) and rasa (the sentiments) are the essential constituents of a drama or rupak. The characteristic features of the Sanskrit drama, are –

- Absence of tragedy – Sanskrit drama never has a sad ending. It is a mixed composition, in which joy is mingled with sorrow. Love is the main theme of most of the dramas and vidushak is the constant companion of the hero in his love affairs.
- The interchange of lyrical stanzas with prose dialogue.
- The use of Sanskrit and prakrit languages. Sanskrit is employed by the heroes, kings, Brahmanas and men of high rank, Prakrit by all women and men of the lower classes.
- Every Sanskrit play begins with a prologue or introduction, which opens with a prayer–nandi and ends with Bharata-vakya.

The best productions of the Sanskrit are the compositions of the great dramatists – Bhasa, Kalidasa, Bhavabhuti, Shudrak, Vishakhadatta and Rajeshkhar.

SANSKRIT POETRY

Sanskrit is the oldest language of the world. Since Sanskrit literature has come down to us through oral tradition called the Shruti Parampara, the maximum number of works are in poetry only. Starting from the Ved, Puran, Upanishad, there is a continuous flow of Sanskrit works in poetry.

Puranas are followed by the great Mahakavyas. Buddhacharitam and Saundaryananda are earliest written by Ashvaghosha. Kalidasa's Raghuvansham and Kumarsambhavam are world famous. Bharavi's (6th cent. A.D.) Kiratarjuniyam is famous for its depth of expression. Bhatti's Ravanavadham (6th cent. A.D.) excels in the use of grammar rules.

Kumardasa's Janaki Haranam is based on Ramayana.

Magha's Shishupal-vadham has influenced all the later poets by his excellent usage of words. He flourished in 7th century A.D.

Shriharsha's Naishadhiyacharitam is based on a story from Mahabharata. It is said that the glow of stars like Bhairavi and Magha faded down on the rise of this- sun like Naishadha Kavya.

There is a long series of other Kavyas like Ratnakar's Harivijaya, Kshemendra's Dashavataracharitam, Shrikanthacharitam by Mankha and many others.

Historic works also are available in verses. The famous ones are Vikramankadevacharitam by Bilhan, Rajatarangini by Kalhan, Kumarpalacharitam by Hemchandra and many others.

A huge amount of literature exists in the form of Khanda Kavyas, Giti Kavyas, Muktakas and stotra – kavyas.

NRITYA (DANCE)

Dance or Dancing is for the creation of rasa (sentiment), by suitable movements of different parts of the body. There are three main components, Natya, Nritya and Nritya. Natya is the dramatic element of stage performance. Nritya is the rhythmic movement of body in dance. It virtualizes and reproduces beat (tala) and rhythm (laya) by means of abstract gestures of the body and hands and extensive and precise use of footwork. On the otherside, Nritya is that element of dance which suggests rasa (sentiment) and bhava (mood), conveyed by facial expressions and appropriate gestures. The Natyashastra of Bharata and the Abhinayadarpana of Nandikesvara have been authoritative sources of instruction for Bharatiya classical dances. The Dasharupaka of Dhananjaya, the Sangitaratnakara of Sarngadeva, the Sangitaraja of Kumbhakarna, the Nrityanirnaya of Pundarika Vitthala, the Nrityaratnavali of Jayasenapati, the Sangitasaramrita of Tulajaraja, the Balarambharata of Balaramvarman, etc. are few other works from a long list of rich treatises on the art of dance in Sanskrit.

The Bharatanatyam, which means dance according to the principles of Bharata, follows most closely the Natyashastra. Kuchipudi, Kathakali, Mohiniattam, Manipuri, Odissi, etc. accept the Natyashastra as their authority. Apart from art and technique of dance, Sanskrit has been the main source of stories and subject matter of dance-dramas. Stories from the Ramayana, the Mahabharata and the Puranas have been most sought after themes for Bharatiya classical dances. Yakshagana, a dance-drama of

Mysore, has about fifty plays based on both the great epics of Sanskrit for its subject matter. Rasalila of Brija and Manipuri dance of Manipur owes much to the Bhagavata Purana and the Gitagovinda.

GAYAN & VADAN (MUSIC)

In Sanskrit, music is called gana, geet or sangeet. The later Sanskrit treatises on music, explained sangeet as the combination trio of vocal music, instrumental music, and dance (Geet, vadya and nritya).

Melody or melodic form (raga) is soul of music. In the Vedic age, the Samagana method of chanting Vedic verses was in practice. The Samaganas were possessed of different numbers of notes, registers, metres and literary compositions.

In the Classical period, Gandharva type of music evolved which was a kind of stage song or Natyadharmigiti, possessed of svara, tala and pada. Afterwards, Bharata systematized the form and system of Music in the Natyashastra. The genuine type of raga came into being, with ten determining characteristics (dashalakshanas) and psychological values, with the new names of gitiraga and gramaraga. Jatis are the forerunners of ragas or the parent ragas, which gave birth to all Classical ragas and formalized deshiragas. After Bharata, Kohala, Matanga and other Sanskrit Musicologists made their contributions.

KALA (PAINTING)

Vishnudharmottara Purana, an appendix from the Vishnupurana, is the earliest text that gives the process of painting and the etiquettes need to be followed by an artist. Bharata's Natyashashtra too contains a few chapters on the usage of colors and the emotions to be portrayed in a painting.

Artists were supposed to adhere to a set of rules before painting, eg to wear immaculate apparel, set up their equipment and face east, light incense, salute the holy ones and then start their painting.

The earliest paintings are found in Bhimbetka caves. The cave paintings show themes such as animals, along with dance and hunting.

Raja Ravi Varma is known as the Father of Modern Bharatiya Art. He was born in 1848 in an aristocratic family in Kerala. He received academic training in oil painting in Mumbai in 1866. He was also a pioneer in adopting lithography in Bharat, a technique to make prints on a flat stone or metal plates in mass quantities. This allowed Varma to make affordable reproductions of his artwork and disseminate them widely. The Most Expensive Raja Ravi Varma painting was: Yashoda- Krishna, 1903. Other famous artworks were: 1. Shakuntala (1898) 2. Hamsa Damayanti (1899) 3. The Milkmaid (1904).

VEDIC STUDIES

Vedas have contributed significantly in the fields of science and most of the concepts of modern science have their base in Vedas. One can see the contributions of various texts in every field of knowledge and how they have helped humanity in progressing to the highest level of inner (spiritual) and outer (worldly) possessions:

VEDIC MATHS

Vedic maths is a system of mathematics, rediscovered by Swami Bharati Shri Krishna Tirthaji in the early 20th century from Atharvaveda. From 1925 until 1960, he was also the Shankaracharya (spiritual head) of Puri. He claimed to have found 16 sutras (formulas) and 13 sub-sutras (sub-formulas) in the Vedas.

These sutras can solve any problem related to arithmetic, algebra, geometry, trigonometry, calculus, and more.

The Sulba Sutras, which are part of the Kalpa Sutras (ritual manuals), contain the majority of the Vedic mathematical knowledge. The Sulba Sutras are concerned with the building of altars and geometric shapes for Yajna rites.

The possibility of committing errors by students using these sutras is negligible and helps to solve hard problems using mental calculations.

VEDIC MATHS SUTRAS

The list of Sutras and Subsutras are tabulated below:

Sutra	Sutras Name	Meaning
Sutra 1	Ekadhikina Purvena	By one more than the previous one
Sutra 2	Nikhilam Navatashcaramam Dashatah	All from 9 and the last from 10
Sutra 3	Urdhva-Tiryagbyham	Vertically and crosswise
Sutra 4	Paraavartya Yojayet	Transpose and adjust
Sutra 5	Shunyam Saamyasamuccaye	When the sum is the same that sum is zero
Sutra 6	(Anurupye) Shunyamanyat	If one is in ratio, the other is zero
Sutra 7	Sankalana-vyavakalanabhyam	By addition and by subtraction
Sutra 8	Puranapuranabyham	By the completion or non- completion
Sutra 9	Chalana-Kalanabyham	Differences and Similarities
Sutra 10	Yaavadunam	Whatever the extent of its deficiency
Sutra 11	Vyashtisamanstih	Part and Whole
Sutra 12	Shesanyankena Charamena	The remainders by the last digit
Sutra 13	Sopaantyadvayamantyam	The ultimate and twice the penultimate
Sutra 14	Ekanyunena Purvena	By one less than the previous one

Sutra 15	Gunitasamuchyah	The product of the sum is equal to the sum of the product
Sutra 16	Gunakasamuchyah	The factors of the sum is equal to the sum of the factors

THE SUB SUTRAS ARE:

- Anurupyena
- Sisya Sesasamjnah Adyamadyenantyamantyena Kevalaih Saptakam Gunyah
- Vestanam When the sum is the same that amount is zero Yavadunam Tavadunam
- Yavadunam Tavadunikritya Varga Yojayet Antyayordashake'pi
- Antyayoreva Differences and Similarities Samuccayagunitah Lopanasthapanabhyam
- Vilokanam
- Gunitasamuccayah Samuccayagunitah Dhvajanka
- Dvandwa Yoga
- Adyam Antyam Madhyam

HINDI COUNTING IN INCREASING NUMBER OF ZEROES USED IN BHARAT EARLIER:

Ikai, Dahai, Sankda, Hazaar, Dus hazaar, Lakh, Dus-lakh, Karodh, Dus-karodh, Arab, Dus -arab, Kharab, Dus-kharab, Neel, Dus-neel, Padam, Maha-padam, Shankh, Maha-shankh, Antya, Maha-antya, Madhya, Maha-madhyam, Parardh, Maha-parardh, Dhoon, Maha-dhoon, Ashohini, Maha-ashohini= 10^{28}

FAMOUS MATHEMATICIANS:

Srinivasa Ramanujan discovered the number '2520', which can be divided by all the digits 1,2,3,4,5,6,7,8,9,10. Also $2520 = 12(\text{months}) \times 30(\text{days}) \times 7(\text{a week})$. It is also known as the least common multiple (LCM) of 1 to 10.

Ramanujan Numbers (preciously termed as Hardy- Ramanujan Numbers) are those numbers that are the positive integers which can be represented or expressed as a sum of cubes of 2 positive integers in n ways.

1729 is the first nontrivial taxicab number, expressed as the sum of two cubic numbers in two different ways, expressed as $1^3 + 12^3$ and $9^3 + 10^3$.

4104 is also expressed as sum of two cubic numbers in two different ways: $16^3 + 2^3$ and $15^3 + 9^3$

They are known as the Ramanujan number.

Boudhayan (800 BC-740 BC) is said to be the original Mathematician behind the Pythagoras theorem. Even before the Greek geologist Euclid, many geometry scientists in Bharat had discovered important laws of geometry, among whom the name of Boudhayan is paramount.

Geometry in Bharat at that time was called Shulbha Shastra.

Shulbasutra:- The Sulbasutras are considered Vedic science formulations of Mathematics and Geometry, for giving instructions on the construction of fire-altars used in Yajna. The Yajna rituals done during Vedic times involved construction of altars (vedi) and fireplaces (agni) in a variety of shapes such as isosceles triangles, symmetric trapezia, and rectangles.

They belong to the Taittiriya Samhita of the Shri Krishna Yajurveda. The Baudhayana sūtras consist of six texts:

1. the Śrautasūtra, in 19 Praśnas (questions),
2. the Karmāntasūtra in 20 Adhyāyas (chapters),
3. the Dwaidhasūtra in 4 Praśnas,
4. the Grihyasutra in 4 Praśnas,
5. the Dharmasūtra in 4 Praśnas
6. the Śulbasūtra in 3 Adhyāyas

Boudhayan, has formulated, in his Shubhasutra (I-48), the so-called Pythagoras theorem, centuries before Pythagoras (572 BC). In another sutra (I-51) he has given a general rule for finding the square root of any number, both geometrically and arithmetically. In his Sutra (I-61), he found the value of $\sqrt{2}$ to a great accuracy and has given the procedure for the same. This Bharatiya mathematician could construct a circle almost equal in area to a square and vice versa. He has described such procedures in his sutras (I-58 and I-59).

WORKS OF BOUDHAYANA:

1. Square root of 2

Boudhayan verse number i.61-2 (explained in Apastamba i.6) describes the method of finding the length of a diagonal given the length of the sides of a square. In other words, it describes the method of finding the square root of 2. The verse related to this solution is as follows: -

samasya dvikaraṇī. pramāṇam tṛtīyena vardhayettac caturthenātmacatuṣṭriṃśonena saviśeṣaḥ

Meaning: To get the value of the diagonal of a square, by adding one-third to the side, then adding one-fourth of it, then subtracting thirty-fourth of it, what is obtained is approximately the value of the diagonal.

This is equivalent to the value for the square root of 2 ≈ 1.414216

2. Constructing a circle of area equal to the area of the square in his sutra- (I-58) [1]

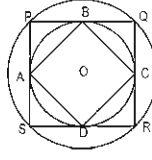
Draw half its diagonal about the center towards the East-West line; then describe a circle together with a third part of that which lies outside the square. That is, if the side of the square is $2a$, then the radius of the circle $r = [a + 1/3(\sqrt{2}a - a)] = [1 + 1/3(\sqrt{2} - 1)] a$

3. Constructing a Square of Area Equal to the Area of the Circle described in sutra- (I-59)) [2]

If you wish to turn a circle into a square, divide the diameter into eight parts and one of these parts into twenty-nine parts: of these twenty-nine parts remove twenty-eight and moreover the sixth part (of the one part left) less the eighth part (of the sixth part).

4. Circling a square

He was able to draw a circle almost equal to the area of a square and vice versa. These processes are described in their sources (I-58 and I-59). In his quest to build circular altars, he constructed two circles enclosing the two squares as shown.



5. Bodhayana theorem

Bodhayana had written about the Pythagorean theorem in his book Bodhayana Sulbasutra.

दीर्घचतुरश्रस्याक्षण्या रज्जुः पार्श्वमानी

ितयर्ग मानी च यत् पृथग् भूते कुरुतस्तदुभयं करोति ॥

dirghachaturasyaksanayā rajjuh parsvamāni,

tiryagmāni, cha yatprthagbhūte kurutastadubhayān karoti.

Bodhayana used a rope in the above verse/verse, which can be translated as: The areas produced by the length and breadth of a rectangle separately are equal to the areas produced by the diagonal together. The described diagonals and sides are those of a rectangle, and the areas are those of the squares whose sides are those of these line segments. Since the diagonal of a rectangle is the hypotenuse of a right triangle formed by two adjacent sides, this statement is equivalent to the Pythagorean theorem.

Other theorems by him:

Diagonals of rectangle bisect each other, diagonals of rhombus bisect at right angles, area of a square formed by joining the middle points of a square is half of original, the midpoints of a rectangle joined forms a rhombus whose area is half the rectangle.

Apastamba's Sulbasutra work is an expanded version of that of Baudhayana. Apastamba's work consisted of six chapters while the earlier work of Baudhayana consists of three. Apastamba introduced acute angle, obtuse angle, and right angles in practical geometry. His three main contributions in mathematics were the notation system, the decimal system, and the use of zero.

Katyayana was the author of a Sulbasutra which is much later than the Sulbasutras of Boudhayan and Apastamba. The Katyayana Sulbasutra: The rope which is stretched along the length of the diagonal of a rectangle produces an area which the vertical and horizontal sides make together.

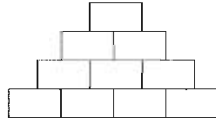
Pingala was a mathematician and a prodigy in the metrical sciences whose book named Chhandashastra gave the method of formation of Pascal's triangle, Binary number system, the Fibonacci sequence and many more algorithmic & geometric series. Chhandashastra (Pingala sutra), the science of meters or Chhandah, is the timing for pronouncing syllables. The book contains 315 sutras in eight chapters. The Sanskrit prosody consists of two basic units: Laghu (single matra) and Guru (two matras). The systematic arrangements of Laghu (short) and Guru (long) syllables, described in Chhandashastra, are the first of the binary number system.

His works:

MERU PRASTARA

Sutra 1

Two squares are drawn below the top of one (Prathama prasthava) square, with half of each square extending on either side. Three squares are drawn below it, followed by four squares, and so on until the required pyramid is achieved.



SUTRA 2

'One' symbol needs to be written in the first square. Then, one has to be positioned in each of the two squares of the second line figure. One is then to be positioned on each of the two extreme squares in the third line. One is then to be positioned on each of the two extreme squares in the fourth line.

SUTRA 3

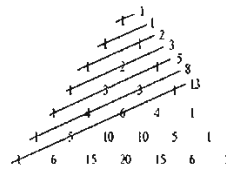
In the middle square of the third line the sum of the figures in the two squares immediately above is to be placed. In each of the two middle squares immediately above, three is placed.

Subsequent squares are filled in this way. Thus, the second line gives the expansion of combinations of syllables: the third line the same for two syllables, the fourth line for three syllables and so on, finally resulting in the Pingala's Meeru Prastara which is known as Pascal's triangle.

		1	
	1	1	
1	2	1	
1	3	3	1

MATRU MERU

When we consider the sum of the numbers along the diagonal of the Meeru Prastara, it gives Maathra Meru or Fibonacci sequence {1, 1, 2, 3, 5, 8, 13....}



Bharat Muni also expressed knowledge of the sequence in the Natya Shastra.

Virahankara's work on prosody(metres) builds on the Chhanda-sutras of Pingala and was the basis for a 10th century commentary by **Halayudha** & 12th-century commentary by **Gopala**.

Hemachandra (c. 1150), Swetambar Jain acharya, is also credited with the knowledge of the sequence, writing that "the sum of the last and the one before the last is the number ... of the next mātrā-vṛtta. [prosodic combinations], used in Sanskrit poetry.

The Fibonacci sequence is found in many places in nature like nautilus shells, sunflowers, artichokes, plant leaves, pineapples, pinecones, tree branches from the stalks, honeybee colonies, hurricanes and some huge galaxies.

Human face and ears also depict golden ratio.

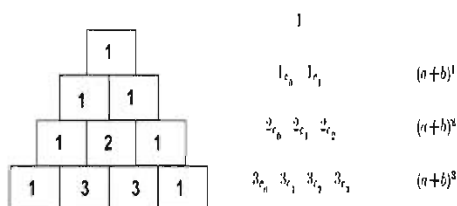
BINOMIAL COEFFICIENTS

तत्रैकं सवर्गुरु, द्वे एकलघुनी, एकं सवर्लघ्वितकोष्ठक्रमेण वृत्ताः निभविन्ति॥ चतुर्थ्या र्पंक्तौ त्यक्षरस्य प्रस्तारः।

तत्रैकं सवर्गुरु त्रीण्येकलघू नि त्रीणि द्विलघू नि एकं

सवर्लघु॥ तथा पंचमादि पंक्ता विपसवर्गुवार्दिसवर्लघ्वन्तमेकद्वयादि लघुद्वयमिति॥

The above lines of the Halayudha commentary state that the second line of the Meru Prastara is the expansion of a meter with one syllable. The third line of a meter is expansion of two syllabus and the fourth line of the meter is the expansion of three syllables. Similarly, the fifth line of the meter is the expansion of four syllabus and so on as shown in the Figure. So, the way of arranging all patterns of short and long syllables in a line with “n” syllables leads to the formation of Pascal triangle's Binomial coefficients.



Madhava of Sangamagram, Kerala was the founder of Kerala school of Maths which gave Calculus, Infinite series and other mathematical concepts to the world.

One of his contributions is the series for $\pi/4$, which is now known as the Madhava-Leibniz series. The texts associated with Madhava's contributions include the "Yukti-bhāṣā" and the "Karaṇa-paddhati." Madhava discovered the series equivalent to the Maclaurin expansions of $\sin x$, $\cos x$, and $\arctan x$ around 1400CE.

Madhava obtained an approximation for π correct to 11 decimal places when he gave

$$\pi = 3.14159265359$$

NEWTON'S SINE AND COSINE SERIES HAS BEEN RENAMED TO MADHAV-NEWTON SERIES AND LEIBNIZ SERIES TO MADHAV-LEIBNIZ SERIES.

Bhaskara II (1114 – 1185), also known as Bhaskar II and Bhaskarachārya, was a Bharatiya mathematician and astronomer. He is different from the 7th-century astronomer Bhaskara I. Bhaskara-II became the head of astronomical observatory at Ujjain, Bharat’s “most prestigious mathematical centre” at the time where renowned mathematicians such as **Varahamihira** and **Brahmagupta** had worked to built up a strong school of mathematical astronomy. He was a pioneer in understanding the number systems and solving equations. Bhaskara is mainly remembered for his 1150CE book, the *Siddhanta Siromani* which he wrote at the age of 36. The treatise comprised of 1450 verses with four segments. Each segment of the book focuses on a separate field of astronomy and mathematics.

They were:

- Lilavati: A treatise on arithmetic, geometry and the solution of indeterminate equations
- Bijaganita: (A treatise on Algebra),
- Goladhyaya: (Mathematics of Spheres),
- Grahaganita: (Mathematics of the Planets).

He also wrote another treatise named *Karaṇa Kautūhala*.

Lilavati has thirteen chapters which include several methods of computing numbers such as multiplications, squares, and progressions, with examples using kings and elephants? This book was written by the name of his daughter so that she becomes fond of Mathematics as most part of the book is in the form of stories.

Eg. A fifth part of a swarm of bees came to rest on the flower of Kadamba, a third on the flower of Silinda, Three times the difference between these two numbers flew over a flower of Krutaja and one bee alone remained in the air, attracted by the perfume of a jasmine in bloom

Tell me, beautiful girl, how many bees were in the swarm?

Bjiganita is all about algebra, including the first written record of the positive and negative square roots of numbers. He expanded the previous works by Aryabhata and Brahmagupta to improve the *Kuttaka* methods for solving equations. *Kuttak* means to crush fine particles or to pulverize. *Kuttak* is the modern indeterminate equation of first order. There are many kinds of *Kuttaks*. eg. $100x+90=63y$ which can have indefinite solutions. He filled the gaps in Brahmagupta’s works. Bhaskara derived a cyclic, *chakravala* method for solving indeterminate quadratic equations, $ax^2+bx+c=y$

While discussing properties of the mathematical infinity, Bhaskaracharya draws a parallel with Vishnu who is referred to as Ananta (endless, boundless, eternal, infinite) and Acyuta (firm, solid, imperishable, permanent): During pralay (Cosmic Dissolution), beings merge in Him and during sṛiṣhti (Creation), beings emerge out of Him; but the Himself — the Ananta, the Acyuta — remains unaffected. Likewise, nothing happens to the number infinity when any (other) number enters (i.e. is added to) or leaves (i.e. is subtracted from) the infinity. It remains unchanged.

Grahaganita deals with mathematical astronomy. Throughout the twelve chapters, Bhaskara discusses topics related to mean and true longitudes and latitudes of the planets, as well as the nature of lunar

and solar eclipses. He also examines planetary conjunctions, the orbits of the sun and moon, as well as issues arising from diurnal rotations.

He also wrote estimates for values such as the length of the year, which was so accurate that we were away from the actual value by a minute!

Goladhyaya Is a thirteen-chapter publication and is all about spheres and similar shapes. The topics in the Goladhyaya include Cosmography, geography, seasons, planetary movements, eclipses and lunar crescents.

The book also deals with spherical trigonometry, in which Bhaskara found the sine of many angles, from 18 to 36 degrees and includes a sine table, along with the many relationships between trigonometric functions.

He gave eight instruments, which were useful for observations: Gol yantra (armillary sphere), Nadi valay (equatorial sundial), Ghatika yantra, Shanku (gnomon), Yashti yantra, Chakra, Chaap, Turiya, and Phalak yantra.

Bhaskaracharya had calculated the apparent orbital periods of the Sun and orbital periods of Mercury, Venus, and Mars.

Varahamihira's most famous work is the Pancasiddhantika which is a treatise on mathematical astronomy and it summarises five earlier astronomical treatises, namely the Surya, Romaka, Paulisa, Vasishta and Paitamahasiddhantas. His contribution to trigonometry was his sine tables where he improved those of Aryabhatta I and gave more accurate values that were very important for the Bharatiya mathematicians since they were computing sine tables for applications to astronomy and astrology.

Aryabhatta I gave Aryabhattiya that covers arithmetic, algebra, plane trigonometry and spherical trigonometry. It also contains continued fractions, quadratic equations, sums of power series and table of sines. Aryabhatta worked out the accurate value of π to 3.1416. in 499AD.

VEDIC GEOMETRY

Also called Jyamiti, Vedic Geometry is a term that refers to the mathematical principles and techniques related to geometry as found in the ancient Vedic texts of Bharat. It provides practical methods that were used for solving geometrical problems in ancient times, especially in fields like architecture, astronomy, and land measurement.

"Shulba" means "cord" in Sanskrit, and the texts related to it are known as "rules of the cord". The Shulba Sutras, ancient Bharatiya texts are the primary source for Vedic Geometry. These texts provide practical geometry rules used in the construction of altars for Vedic rituals. They also contain techniques for measuring areas, constructing right angles, and working with different shapes.

Examples of some techniques in Vedic Geometry:

- The 3-4-5 Triangle: Known for its simplicity in constructing right angles.

- The Square and Circle Problem: Constructing a square equal in area to a given circle (and vice versa).
- Area Calculations: Finding the area of various geometrical shapes like circles, squares, and rectangles, using simple formulas.

Mathematicians like Aryabhata, Brahmagupta, and Bhaskara expanded the ideas related to geometry and trigonometry, which were rooted in earlier Vedic principles.

The Vedic geometry applies to:

- a) The first place where we find the vedic geometry applications is in Shulbha sutras. It deals with executing the vedic rituals of Yajna for different purposes. Srauta Sutras are ritual manuals for grand Vedic sacrifices and Shulbha Sutras are a part of the Srauta Sutras.
- b) The second place where we find geometry is in shilpa shastra that deals with the temple construction and sculpting. The precise geometric shapes used in the construction of altars and temples were critical to Vedic rituals. These rituals, often involving fire, required exact measurements of space, angles, and proportions.
- c) The third place where we find geometry is in Jyotish Shastra which requires astronomical studies. In astronomy, geometric principles were used to calculate positions of celestial bodies, construct calendars, and predict celestial events.
- d) The fourth place is Shrividya which is a specialized branch of divine worship and is described as tantra. The word Shri Vidya deals with construction of complex, two-dimensional & symmetrical geometrical figure which are the manifestations of different gods.

Fire altars were narrow, raised enclosures, of a particular shape, made of stone or bricks and were used for rituals when a big fire had to be arranged. The Vedic fire ritual, known as Homa, Puja, Yagya or Yajna is considered sacred. This ancient ritual is performed at precise times depending on the celestial events including daily sunrise and sunset time, monthly lunation cycles and major planetary transits.

Yajna or Yagna also known as Hawan in Hinduism refers to any ritual done in front of a sacred fire, often with mantras, where oblations are offered into the fire. The Vedic text Satapatha Brahmana defines a Yajna as an act of abandonment of something one holds of value to be offered to God and Dakshina (fees, gifts) offered during the Yajna. For gifts and fees, the text recommends giving cows, clothing, horses or gold. The oblations recommended are cow's milk, ghee (clarified butter), seeds, grains, flowers, water and food.

In Vedic rituals, the Yajna is offered by a patron known as the Yajamana. The yajamana acts as the patron, and the sacrifice is conducted for his benefit by a priest.

Vedic (Shrauta) Yajnas are typically performed by four types of priests:

The Hota recites invocations of God, drawn from the Rigveda. He uses three Rig verses, the introductory verse, the accompanying verse and benediction (divine blessing) as the third.

The Adhvaryu takes care of the physical details of the ritual like measuring the ground, building the altar as explained in the Yajurveda. The adhvaryu also offers oblations.

The Udgata chants hymns in musical form drawn from the Samaveda. The udgata, also chants the introductory, accompanying and benediction hymns.

The Brahma is the main priest of the entire ritual and responsible for asking forgiveness from Divine for any mistakes by means of supplementary verses taken from the Atharva Veda.

Three ritual fires are traditionally used during a Vedic sacrifice. These are the householder's fire (garhapatya), the southern fire (anvaharyapacana or daksinagni), and the offertorial fire (ahavaniya).

The Saptapadi (Sanskrit for seven steps/feet), is the most important ritual in Hindu weddings, and represents the legal part of Hindu marriage.

The Vedic Yajna ritual is performed in the modern era on a square altar called Vedi (Bedi in Nepal), set in a mandapa or mandala or kundam. However, in ancient times, rectangles, trapezia, rhomboids or "large falcon bird" altars would be built from joining squares.. The geometric ratios of these Vedic altars were according to mathematical precision and geometric theorems.

IN BAUDHAYANA SHULBHA SUTRA, THE RULES ARE GIVEN AS FOLLOWS:

1.9. The diagonal of a square produces double the area [of the square].

दीर्घर्चतुरश्रस्याक्षण्या रज्जुः पार्श्वमानी ितयर्ग्मानी च यत् पृथग् भूते कुरुतस्तदुभयं करोति ॥

Dirghachaturasyaksanaya rajju: parsvamani tiryag

mani cha yatprthagbhUte kurutastadubhayan karoti ll

- Ch1. 12 Baudhayana Sutras, Kalpa, Yajur Vedam

दीर्घर्चतुरश्रस्य = Rectangle

अक्षण्या = Diagonal

रज्जुः = Rope

पार्श्वमानी = Perpendicular

ितयर्ग्मानी च = Horizontal

यत् पृथग् भूते कुरुत = Area of Sum of Square

तदुभयं करोति = Equals area of Diagonal

Meaning:

The rope stretched along the length of the diagonal line of a rectangle makes an area which line, vertical and horizontal sides make together.

The areas [of the squares] produced separately by the length and the breadth of a rectangle together, is equal to the area [of the square] produced by the diagonal.

1.12. This is observed in rectangles having sides 3 and 4, 12 and 5, 15 and 8, 7 and 24, 12 and 35, 15 and 36.

It also includes transforming different shapes but with the same area like - a square into a rectangle, an isosceles trapezium, an isosceles triangle, a rhombus, & a circle, and a circle into a square.

As an example, the statement of circling the square given in Baudhayana:

2.9. To transform a square into a circle, [a cord of length] half the diagonal [of the square] is stretched from the centre to the east [a part of it lying outside the eastern side of the square]; with one-third [of the part lying outside] added to the remainder [of the half diagonal], the [required] circle is drawn.

while the statement of squaring the circle is given as:

2.10. When transforming a circle into a square, the diameter is divided into eight parts; one [such] part after being divided into twenty-nine parts is reduced by twenty-eight of them and further by the sixth [of the part left] less the eighth [of the sixth part].

2.11. Alternatively, divide [the diameter] into fifteen parts and reduce it by two of them; this gives the approximate side of the square [desired].

The constructions in 2.9 and 2.10 give the value of π as 3.088, while the construction in 2.11 gives π as 3.004.

In the Baudhayana sutra, the value of sq root of 2 appears as:

2.12. The measure is to be increased by its third and this [third] again by its own fourth less the thirty-fourth part [of that fourth]; this is [the value of] the diagonal of a square [whose side is the measure].

Apastamba's rules for constructing right angles in fire-altars use the following Pythagorean triples: (3,4,5); (5,12,13); (8,15,17); (12,35,37).

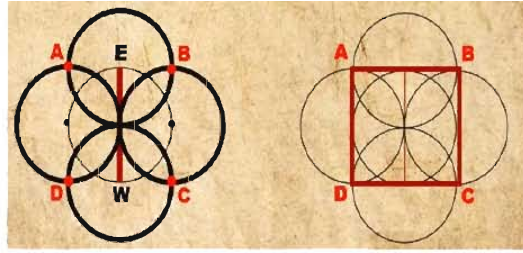
Āṅgula is a measure of length. It was the basic unit of measurement in which one Angula was equal to 34 sesame seeds placed in a line. Twelve āṅgulas make a Vitasti or span, and twenty-four a Hasta or Cubit. 108 Angulam make a 'Dhanusha'.

Let's draw a square with sides perfectly aligned with the four cardinal directions.

The shadow of the sun varies from season to season. So, we need to get the directions which are applicable on that day when Yajna is to be held.

Taking a long stick erected on a plane ground and tying a string to the stick whose other end is tied to a nail, draw a circle around the stick. This has to be done before sunrise and once the sun rises, the shadow of this stick is cast in the opposite direction which will be the longest shadow in the early morning. The shadow protrudes out of the circle that was drawn. As the sun progresses through the day, the shadow reduces and, in the evening, again it protrudes in the opposite direction. These two points of the shadows where they meet the circle, when joined, give the East-West direction.

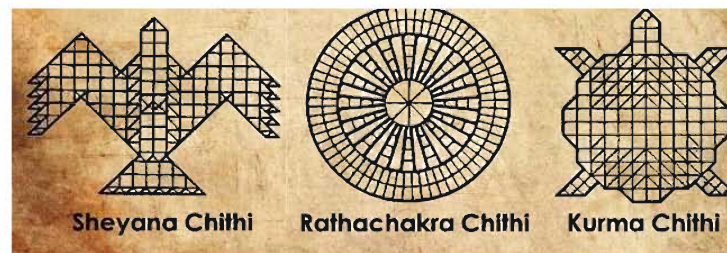
To draw a square of 6 Angulas, take the East- West line and measure 6 Angula. Draw a circle with a string, taking the centermost point of East West line. Again, draw circles with the end points of East West- West line as centre and of same radius. Then, make a perpendicular from the East- West line in both the opposite directions. Taking the centre point where this line cuts the first circle, draw two more circles. The four intersecting points of the circles, when joined makes a perfect square aligned with the four cardinal directions.



The fire altars were called as chitti in Sanskrit and depending on the intent of the Yajna, the shape of the Chitti varies. Eg. for prosperity, a falcon-shaped Chitti was constructed while to destroy the enemies in war, a triangular or rhombus kind of a chitti was constructed. Similarly, to pray for food and prosperity of the kingdom, the hemisphere shape of Chitti was constructed.

These chittis were made of mud as well as brick arrangement in layers.

Chittis like Sheyana Chitti, Radhachakra Chitti and KurmaChitti are:



- Courtesy: Project Shivoam

The pythagoras theorem or the pythagoras triplets which satisfy the pythagoras theorem, inscription were first found in Babylon which is modern day Iraq, inscribed on a stone tablet called as Plimpton 322. It is dated 1800 BCE while the Euclidean geometry came in around 300BCE.

So, it is almost 1300 years before Pythagoras (570–500/490 BCE) discovered it.

Another ancient source of the pythagoras triplets comes from Egypt and is a document called Rhind Papyrus, which is a mathematical worksheet of the ancient Egyptians where the calculations of the pythagorean triplets is shown. It dates to approximately 1550 BCE.

Similarly, The Moscow Mathematical Papyrus, also named the Golenishchev Mathematical Papyrus after its first non- Egyptian owner, Egyptologist Vladimir Golenishchev, is an ancient Egyptian mathematical papyrus containing several problems in arithmetic, geometry, and algebra, written around 1850 BCE.

The Shulbha Sutras were written thousands of years ago when Vedic rituals were the ways of worship and they tell about how the Yajna should be organized, which is still in practice.

JYOTISH- Vedic astrology called Jyotish, relies heavily on mathematical calculations to determine the positions of planets, houses, and other celestial elements in a birth chart.

These calculations involve geometry, trigonometry, and other mathematical principles to accurately map the sky and understand the relationships between celestial bodies.

Mathematical concepts like angles, distances, and rates of change are used to interpret planetary movements and their potential influences.

Aryabhatta and Varahamihira, the prominent figures in ancient Bharatiya mathematics and astrology, made significant contributions to both the fields, demonstrating the interconnectedness of these disciplines.

Varahamihira

Astrologer, astronomer, and mathematician Varahamihira, a resident of the Avanti (Malwa), lived in the sixth century during the Gupta era. The Brihat Samhita, an exhaustive study on architecture, temples, planetary motions, eclipses, timekeeping, astrology, seasons, cloud formation, rainfall, agriculture, mathematics, gemology, perfumes, & many more topics, was one of Varahamihira's most famous works. Varahamihira made significant advances in astronomy and mathematics.

He enumerated the five astronomical schools that were in use at the time in his Panchasiddhantika, which is a summary of five preceding works on mathematical astronomy by five writers, including the Surya Siddhanta, Romaka Siddhanta, Paulisa Siddhanta, Vasishta Siddhanta, and Pitamaha Siddhanta.

- Surya-Siddhanta, the Sun's Siddhanta, was assumed to have been penned by Latadeva, but was actually created by Mayasura, also known as Mamuni Mayan, as stipulated in the text itself.
- Vishnu Chandra authored Vasishta-siddhanta, named after one of the Great Bear's stars.
- Paulisa-Siddhanta, named after Paulisa of Saintra, was composed by Paulisa.
- The name Romaka-Siddhanta comes from Srishena's Rum.
- Paitahama-Siddhanta- The earliest text that uses zero both a symbol and a numeral is Varahamihira's Panchasiddhantika.

He was the first person to state that the equinox shifts by 50.32 arc seconds per year, or the Ayana.

Varahamihira employed the decimal system of notation, and Aryabhatta mentioned it in his Aryabhattachiya.

Aryabhatta

The Aryabhattachiya, a manuscript that discusses astronomy and mathematics and the Aryabhattachi-siddhanta, are the two works written by the first historical astronomer of Bharat, Aryabhatta I.

- The earth spins on its axis, was originally discovered by him. His discovery of the sine functions and their application in astronomy, one of his accomplishments made a significant contribution to the fields of astronomy and mathematics.
- Aryabhatta also devised the proper formula for estimating a planet's orbit and precisely gave an year's duration (365.2586805 days).
- Aryabhatta's Aryabhattachiya is a treatise on astronomy and mathematics. It deals with the arithmetical progression of numbers, their squares & cubes, as well as the laws of involution and evolution.

- In the area of geometry, Aryabhata discusses the various characteristics of a circle providing a highly precise figure for pi at 3.1416, accurate to 4 decimal places.
- The verse to calculate the area of a circle without pi-
Samaparinahasyardham viskambhar dhahatameva vrttaphalam
Half of the circumference multiplied by half the diameter is the area of a circle. This area multiplied by its own square root is the exact volume of a sphere (Aryabhata 27).
- Aryabhata is considered the inventor of algebra. In his work, numerous difficult simultaneous equations are solved. The trigonometric ratio sine (referred to as jya in Sanskrit) is given in the Aryabhattiya in tables for angles between 0 and 90 degrees at intervals of 3 and 3/4th degrees.

Brahmagupta

The Brahmasputa siddhanta and the Khandakhadyaka were written by Brahmagupta, a scholar of astronomy and mathematics of the late sixth and early seventh centuries. These works taught Arabs about Bharatiya astronomy.

- The Brahmasputasiddhanta is also the first surviving Bharatiya work to explain astronomical instruments in detail and to describe how to calculate astronomical elements from readings taken with those instruments.
- Svayamvaha yantras, which represent an understanding of the concept of perpetual motion, were also mentioned by Brahmagupta.
- Geometry has benefited greatly from the works of Brahmagupta. He was the first mathematician to discuss how to create cyclic quadrilaterals with rational sides and to calculate their areas. He also proposed theories for finding the diagonals of a cyclic quadrilateral in terms of its sides and the circumdiameter of a triangle.

Other astronomers

- The Yavanajataka, written by Sphujidhvaja in the third century, is an astrological treatise that contains the earliest datable examples of the decimal place-value system of notation. However, zero is not mentioned in this work. In the Chhandasutra, a book from before the second century BCE, Pingala utilised the zero symbol, a dot, to represent measurements (chhandas).
- Bhaskara I (early 7th century) provided an intriguing geometrical method for algebraic formulae in his commentary on the Aryabhattiya.
- Mahavira, a renowned mathematician from Karnataka, lived in the court of Manyakheta's Rashtrakuta king Amoghavarsha Nripatunga in the ninth century. He published a book titled Ganitasarasangraha that addressed a variety of mathematical issues and provided formulas for calculating an ellipse's circumference.

In Jyotish Shastra, Ujjain, the city of Mahakal(time), is considered significant because its located at the conjunction of Kark Rekha (Tropic of Cancer) & Madhyahn Rekha (Prime Meridian). Here, astronomical observatories are located giving rise to studies related to astronomy.

Shilpashastra(शिल्पशास्त्र) refers to the ancient Bharatiya science of creative arts and crafts, including sculpture, iconography, and painting. Some important texts:

- Brihat Samhita
- Narada Shilpa Shastra
- Manasara

In Hindu temples, geometry always plays a vital role. The geometry of a plan starts with a line, forming an angle, evolving a triangle, then a square, distinctly a circle and so on, ultimately deriving complex forms, including the design of pillars and arches, which are crucial elements in temple construction, emphasizing precise measurements & proportions. The plan of a temple is based on principles of Vastupurushmandala, where two types of mandalas can be formed. They are of either 64 or 81 squares, each dedicated to a deity. Fractal geometry in Hindu Temple is prominent in the design of the Shikhara, which is a significant large characteristic tower, symbolic of a mountain peak. Fractal is a recurring, never-ending pattern which is self-similar.

Shri Vidya - Srividya Sadhana distinguishes itself as a profound voyage toward enlightenment. Srividya Sādhana is a profound spiritual discipline aimed at discovering purpose and meaning in life, ultimately guiding individuals towards self-realisation. At its core lies the Sri Yantra, a symbol of divine unity and cosmic harmony, representing the Sri Chakra. The Sri Chakra, or its three-dimensional form as the Sri Yantra, is a central element in Srividya Sadhana. This sacred geometry represents the universe's macrocosmic structure and the individual's microcosmic existence, depicting the divine union of Shiva and Shakti, the masculine and feminine energies.

Shri Chakra consists of nine interlocking triangles surrounded by lotus petals and gates.

In the sacred text Lalitha Sahasranama Stotra, Lalitha Tripura Sundari reveals herself to be the embodiment of both the Sri Chakra (Yantra), representing the cosmic structure and the Panchadashi (Mantra), a sacred vibrational sound. Engaging with the Sri Yantra through the practice of the Panchadashi mantra while adhering to Srividya Tantra rituals culminates into a spiritual journey. The stages in the spiritual path of a person from mundane existence to liberation is seen in the sixteen lettered Panchadashi/Shodashi Mantra of Sri Vidya, which contains Upanishadic essence of the four Vedas.

The tradition of viewing the Sri Yantra is - as layers or Avaranas, going from outward to inward, each enclosure going more subtle than the outer. There are nine such Avaranas, and worship is done in an order from outer to inner, known as Samhara Krama, or inner to outer, known as Srishti Krama.

However, the formation of the Sri Yantra is explained as the interlocking between 9 triangles, five facing downward and four upward, the configuration is termed the "Navayoni Chakra", creating a number of smaller triangles which constitute each enclosure.



Most common geometrical shapes of Yantras (Buddhists call it Mandala) are:

- **Triangles:** The downward pointing Triangle corresponds to Water Element. The Upward pointing Triangle corresponds to Fire Element.
- **Circles:** Many mandalas have three concentric circles in the center, representing manifestation. Others have a central point called a bindu or a point, which represents the main deity associated with the yantra.
- **Square:** Square shape represents Earth Element and four cardinal directions.
- **Pentagram:** Some yantras of Guhyakali have a pentagram, due to the number five being associated with Kali.
- **Hexagram:** Fused shape of upper pointing triangle and lower pointing triangle represents space or Akash element. They also represent Shiv & Shakti.
- **Octagons:** represent the eight directions.
- **Lotus petals:** Lotus petals represent purity and transcendence. According to the orientation of the lotus petals the energy traverse inward / outward.

A Yantra has “T” Shaped structure at four sides which maintains as well as multiplies the energy. That is why we have 1000 pillared Mandapam or hall as well as 16 pillared Mandapam or halls where the energies are multiplied according to the number of pillars used. Thus, the multiplied energies are maintained.

Many Bharatiya temples last more than 1000 years because of this preserved energy.

The Sri Yantra is at the heart of Shri Vidya practice, representing the geometric manifestation of the formless Tripurasundari. Both the Lalita Sahasranama and Tripura Rahasya emphasize that while Tripurasundari is formless in her divine essence, she is worshipped through the Sri Yantra, which

symbolizes her cosmic energy, and the Panchadashakshari Mantra (the 15-syllabled mantra), which invokes her presence. Together, the Yantra and Mantra serve as the central tools for connecting with and realizing the supreme goddess in Shri Vidya.

The main mantra of Lalitāmbikā is Pañcadaśī (Panchadasi) which consists of fifteen bīja-s. Each alphabet(bija) in Sanskrit has a meaning which can be a single Sanskrit alphabet or a combination of alphabets. Eg. sa is a bīja and it is a single alphabet, whereas hrīm is also a bīja but a combination of many alphabets. The interpretation of meaning for such bīja-s mostly depends on the context in which it is used.

Pañcadaśī (Panchadasi) mantra consists of three groups consisting of bīja-s and each line is called kūṭa or group. The three kūṭa-s are known as vāgbhava kūṭa, kāmarāja kūṭa or madhya kūṭan and śakti kūṭa.

Vāgbhava kūṭa represents Lalitāmbikā's face, kāmarāja kūṭa represents the portion between Her neck and hip and the last one śakti kūṭa represents the portion below Her hip. The whole form of Lalitāmbikā is made up of these three kūṭa-s.

This is one of the reasons why Pañcadaśī (Panchadasi) is considered as very powerful. These three kūṭa-s are joined in such a way that an inverted triangle is formed which represents Her yoni, the source of the universe. This is why this mantra is considered as highly secretive.

Vāgbhava kūṭa is the right side of this triangle, kāmarāja kūṭa the upper side and śakti kūṭa forms the left side of the triangle.

Vāgbhava kūṭa consists of five bīja-s : ka-e-i-la-hrīm .

Madhya kūṭa consists of six bīja-s : ha-sa-ka-ha-la-hrīm .

śakti kūṭa consists of four bīja-s : sa-ka-la-hrīm.

Thus, we have fifteen bījas of Pañcadaśī (Panchadasi). This mantra is not revealed by these bīja-s, but by the following verse in Sanskrit.

kāmo yoni:

***kamalā vajrapāṇirguhāhasā matariśvābhrāmindrah|
punarguhāsakala māyayā ca puruṣyeṣā viśvamātādividyā||***

This is the verse where in the fifteen bījas of Pañcadaśī (Panchadasi) are hidden.

THE SEVEN CHAKRAS



The seven chakras of the human body are also depicted in geometrical patterns.

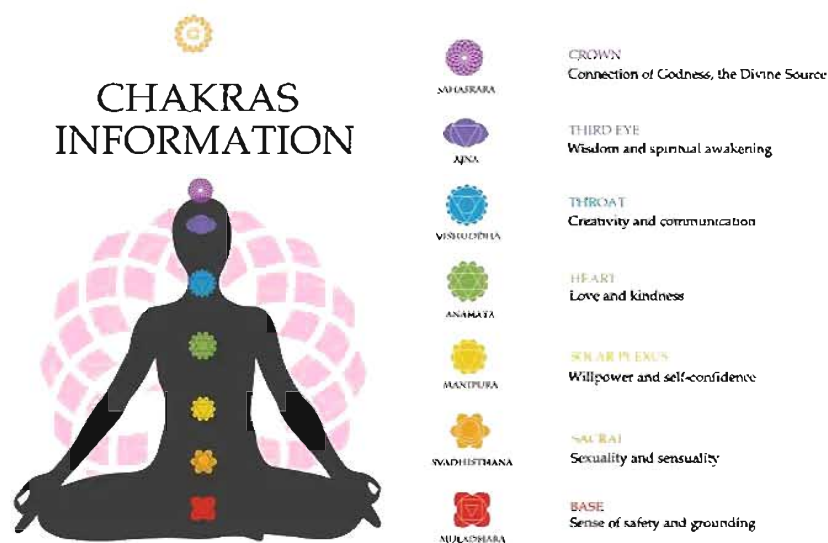
Evidence of chakras, spelled cakra, is found in the Shri Jabala Darshana Upanishad, the Cudamini Upanishad, the Yoga-Shikka Upanishad and the Shandilya Upanishad.

Chakras refer to centralized locations where subtle energy channels, known as nadis, converge. The Nadis are energy channels through which Prana (our life force) flows. Within the human body, there is a network of 72,000 Nadis that distribute this life force throughout the body. The energy flow in the Nadis is associated with the sleep cycle, circadian rhythm, and ultradian rhythm of the body. The ultradian rhythm of the body is associated with our fundamental body functions such as brain, hormone secretion, sleep, and blood flow.

Ancient yogis identified three main channels of Nadis(energy) in the body known as **Ida, Pingala & Sushumna**. The Ida and Pingala Nadis travel upward along the spinal column, criss-crossing each other as well as the Sushumna nadi, before terminating in the left and right nostrils. The junctions where the Ida, Pingala and Sushumna Nadis meet along the spinal column are called Chakras and they control every aspect of our physical, emotional, and spiritual lifestyles. When the chakras are balanced and aligned, it brings health and well-being while blockages in any one of the chakras cause physical ailments and emotional imbalances.

The seven chakras have different names:

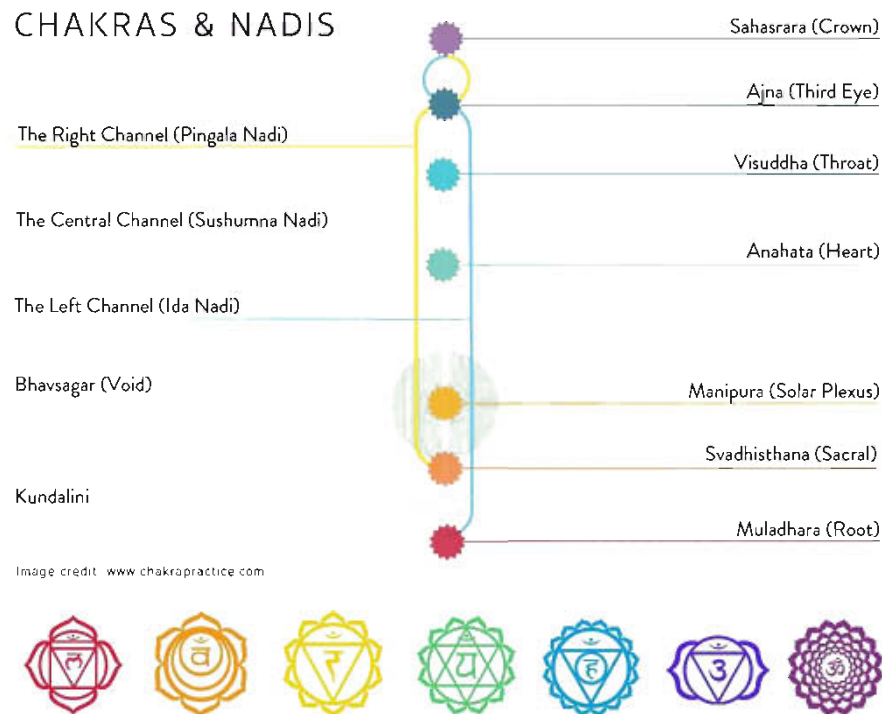
1. Muladhara (Root Chakra): It is located at the base of the spine.
2. Svadhisthana (The sacral chakra): It is located in the lower abdomen.
3. Manipura (The solar plexus chakra): It is at the upper part of the abdomen.
4. Anahata (The heart chakra): It's in the centre of the chest area.
5. Vishuddha (The throat Chakra): Its place is in the throat region.
6. Ajnya (Third Eye Chakra): Located between the eyebrows, the Third Eye Chakra is considered the center of intuition and insights.
7. Crown Chakra (Sahasrara): Situated at the top of the head, this chakra is connected to enlightenment and higher consciousness.



-courtesy: webMD

Chakras can be activated by means of practicing yoga, certain mudras and by chanting mantras. To open a chakra, one needs to be conscious of its location and being aware of focusing on it.

Meditating every day on each chakra will harness its powers and balance the energy. Every being has different energy levels making them react differently in different situations. Also, it reflects the vibrations being transmitted from one person to another.



CHAKRAS CAN ALSO BE ACTIVATED THROUGH THE MUSICAL FREQUENCIES:

1. 396 Hz - Root Chakra - C Note
2. 417 Hz - Sacral Chakra - D Note
3. 528 Hz - Solar Plexus Chakra - E Note
4. 639 Hz - Heart Chakra - F Note
5. 741 Hz - Throat Chakra - G Note
6. 852 Hz - Third Eye Chakra - A Note
7. 963 Hz - Crown Chakra - B Note

The Sanskrit word Chakra means “wheel.” This energy flows in our body through a network of 72,000 channels, known as Nadis, going to and from the 114 chakras. There are 7 major chakras, 21 minor chakras and 86 micro chakras.

The 114 chakras are the meeting points for the energy flows (or Nadis) which cross our physical and outer bodies.

Among the 114 chakras, 112 are believed to reside within the body while the other 2 are outside the body. The 112 chakras in the body arrange themselves into seven dimensions, with sixteen aspects in each dimension. These seven dimensions, known as the seven chakras, also form the basis for seven schools of yoga. The seven major chakras can be found along the spine, starting at the tailbone and ending at the crown of the head. 112 of the 114 chakras are in the physical body and of these only 108 can be activated. The other chakras open as a result of the activation of these 108 chakras in the body.

Throughout Hindu and Buddhist cultures, the Anahata, otherwise known as the Heart Chakra, has been linked to our innermost emotions of self-love, kindness, and compassion for the people around us.

The Heart Chakra is believed to have 108 focal energy lines that extend from the chest (where the Heart Chakra is located) outwards to fill our entire being.

When the Heart Chakra is in harmony & balanced, one can experience contentment and inner peace. The Anahata is the midpoint, connecting the lower chakras (such as the Root Chakra and Sacral Chakra) concerned with our physical survival and existence with the upper chakras (such as the Third Eye Chakra and Crown Chakra) which are concerned with our connection to the divine.

However, when it becomes misaligned or blocked, one is likely to experience feelings of loneliness, jealousy, periods of intense sadness, and discontent.

The 21 minor chakras are distributed all over the body, including our hands, legs, tongue, knees, elbows, clavicles, shoulders, eyes, ears and nose. The minor chakras support the work of the seven major chakras. They are also connected to major organs in the body including the liver, spleen, pancreas, kidneys and reproductive organs. In this way they help the body to process toxins, as well as supporting immunity and fertility.

The 86 micro chakras are smaller still and can be found all over the body. These chakras are all interconnected through the energy pathways known as Nadis.

Kundalini

Represented as a snake coiled three and a half times around, Kundalini is the dormant pranic (life) force which once awakened connects one to the universe. Kundalini awakening is a kind of Yoga practice of self-realization. It is transition of energy from the root chakra to the crown chakra.

Kundalini yoga is a spiritual practice which involves physical movements and combines chanting, singing, movements and breathing in specific patterns. The benefits of Kundalini yoga are:

- more empathetic
- increased perception
- improved aura
- increased energy
- internal peace & calmness

Kundalini Yoga without the necessary guidance and assistance is dangerous and can cause severe mental & health issues. Kundalini meditation should be done under the guidance of proper Guru or experienced practitioners.

Bhavsagar (translated as the Ocean of Illusion) sits above the Kundalini and encompasses the Sacral Chakra and Solar Plexus Chakra. The Void represents the unenlightened awareness within each of us. Through spiritual practice, we can learn to identify this void within us and work to fill this gap in our spiritual awareness. This happens during a Kundalini awakening.

The concept of the seven main aspects of Yog by the Saptarishis refers to the division of yoga knowledge and practices among seven ancient sages or seers. Each sage was assigned a specific dimension or aspect of yoga by Adiyogi (the first yogi- Shiva).

These aspects contribute to a comprehensive understanding and practice of yoga. The seven aspects of yoga by the Saptarishis are as follows:

MULADHARA CHAKRA (ROOT CHAKRA) - JAMADAGNI AND KARMA YOGA:

Jamadagni, associated with Karma Yoga, aligns with the root chakra. Karma Yoga emphasizes action and service, mirroring the foundational nature of the root chakra.

SWADHISTHANA CHAKRA (SACRAL CHAKRA) - ATRI AND KUNDALINI YOGA:

Atri, assigned Kundalini Yoga, aligns with the sacral chakra. Kundalini Yoga involves awakening the dormant spiritual energy, resonating with the creative and transformative qualities of the sacral chakra.

MANIPURA CHAKRA (SOLAR PLEXUS CHAKRA) - VASISHTHA AND HATHA YOGA:

Vasishtha, responsible for Hatha Yoga, corresponds with the solar plexus chakra. Hatha Yoga emphasizes physical postures and breath control, reflecting the discipline and vitality associated with solar plexus.

ANAHATA CHAKRA (HEART CHAKRA) - GAUTAMA AND BHAKTI YOGA:

Gautama, associated with Bhakti Yoga, aligns with the heart chakra. Bhakti Yoga centers on love and devotion, echoing the compassionate and harmonizing qualities of the heart chakra.

VISHUDDHA CHAKRA (THROAT CHAKRA) - BHARADVAJA AND JNANA YOGA:

Bharadvaja, assigned Jnana Yoga, correlates with the throat chakra. Jnana Yoga is the path of knowledge and wisdom, symbolizing clear communication and expression associated with the throat chakra.

AJNA CHAKRA (THIRD EYE CHAKRA) - VASISHTHA AND MANTRA YOGA:

Vasishtha, linked with Mantra Yoga, aligns with the third eye chakra. Mantra Yoga involves the repetition of sacred sounds, resonating with the intuitive and perceptive qualities of the third eye.

SAHASRARA CHAKRA (CROWN CHAKRA) - VISHWAMITRA AND RAJA YOGA:

Vishwamitra, responsible for Raja Yoga, correlates with the crown chakra. Raja Yoga, the royal path, encompasses spiritual awakening and union with the divine, aligning with the transcendent nature of the crown chakra.

VEDIC BOTANY

During the Rigvedic period, people knew about preparation and absorption of food by the plants through the action of sunlight. Classification of plants, manuring and rotation of crops were practiced.

In RIGVEDA, three groups of plants have been recognised: Vrksa (trees), Osadhi (herbs) and Virudh(creepers). These are further classified into flowering, non-flowering, fruit bearing and fruitless plants.

The most celebrated plant that finds frequent mention in the Rigveda and later Samhitas is the Soma plant. The ninth Mandala of Rigveda is devoted to Soma plant, hence, called Somapavamana Mandala. The Vedic people hail Soma as Vanaraj (the of the forest). The botanical identity of Soma plant is considered same as that of Ephedra (a Gymnosperm). The second most mentioned plant was Peepal or the Asvattha (Ficus religiosa) during the Vedic period as utensils and vessels were made of the wood of the Asvattha tree.

Three doshas (Vata, Pitta, Kapha) which are the groundwork of Ayurveda have their origin in Rigveda referred to it as “tridoshavaada” (त्रिदोषवादः) (1.34.6) (1.7.28)

There is a similarity drawn between the Rakshas(राक्षसाः) and krimi(कृमयः| worms) in the context of their Prakriti or Nature. For instance, both thrive in darkness, mamsa (मांसम्) and Rakta (रक्तम् |flesh and blood).

In a verse of Rigveda: The deity of the forest is praised for her gifts to the mankind and also for her charm: -

Rigveda 10.146.1

अरण्यान्यरण्यान्यसौ या प्रेव नश्यस । कथा ग्रामं न पृच्छिस न त्वा भीरिव िवन्दती३ ॥

*araṇyāny araṇyāny asau yā preva naśyasi |
kathā grāmaṃ na pṛcchasi na tvā bhīr iva vindatī 3m ||*

Meaning: GODDESS of wild and forest who seems to vanish from the sight. How is it that you don't stay in the village? Aren't you afraid?

Oshadhi Sukta of Rigveda (RV 10.97.1):

या ओषधीः पूवार् जाता देवेभ्यस्त्रयुगं पुरा । मनै नु बभ्रूणामहं शतं धामांिन सप्त च ॥

*yā oṣadhīḥ pūrvā jātā devebhyas triyugam purā |
manai nu babhrūṇām ahaṃ śataṃ dhāmāni sapta ca ||*

“I think of the hundred and seven herbs, brown-tinted and ripe, which are ancient, being generated for the gods before the three ages.”

RV 10.97.2 addresses to the plants and vegetables as mother, " O mother! Hundreds are your birth places and thousands of your shoots...

शतं वो' अम्ब्र धामांिन सहस्रमुत वो रुहः । अधा' शतक्रत्वो यूयिममं मे' अगदं कृ त ॥

śataṃ vo amba dhāmāni sahasram uta vo ruhaḥ | adhā śatakratvo yūyam imam me agadam kṛta ||

Meaning: Mothers! hundreds are your applications, a thousandfold is your growth; do you who fulfil a hundred functions, make me free from disease.”

Yava(Barley), cultivated in the season of Grishm (summer) and Brihi(Rice), cultivated in the season of Sharad (winters), were the staple foods during the time of Vedas. Some other trees that find mention in the Vedas are: (i) Silk cotton (Salmaaliala malabaricum); (ii) Khadira (Acacia catechu) (iii)

Simsupa(Dalbergia sissoo); (iv) Vibhitaka (Terminalia bellerica); (v) Sami (Prosopis sp.) (vi) Plaksa (Ficus infectoria); (vii) lksu (sugar cane – Saccharum officinarum) finds a mention as a cultivated plant in the Atharvaveda, Maitrayani Samhita, and other texts.

Plants are further subdivided:

Visakha (shrubs), Sasa (herbs), Vratati (climbers), Pratanavati (creepers) and Alasala (spreading on the ground). All grasses are separately classified as Trna, flowering plants are Puspavati, and the fruit bearing ones are Phalavati. Leafless plants are placed under the group, Karira.

The Vedic people knew about many flower-bearing and fruit-bearing plants, like Palasa (Butea monosperma)/Dhak, two varieties of lotus – white (pundarika) and blue (puskara), white lily (kumuda), cucumber (urvaruka), jujuba (Zizypus jujuba), udumbara (Ficus glomerata), kharjura (Phoenix dactylifera) and bilva (Aegle marmelos), etc.

Krishi Parashar, composed by sage PARASHAR is repertoire of all agricultural techniques and explains about agriculture depending on rainfall, seed collection, preservation and sowing as well as animals related to agriculture. Vrikshayurveda by sage Parashar gives detailed anatomy of not only plants but plant cells also.

Amarakosha, a Sanskrit lexicon of 6th century CE compiled by PANDIT AMARASIMHA, who was one of the nine distinguished men (nava ratna) of the court of King Vikramaditya, gives a comprehensive glimpse of the art of classification of soil, land, various agricultural implements etc. in the second Khanda, called bhuvargadi-khanda.

The Vanausadhiparga of Amarakosha identifies plants under three categories, mushrooms (catra, aticatra and phalghna), parasites (Vanda and Vrksadani) and epiphytes (Vrksaruha and jivantika).

Various texts like Dhanwantari Nighantu, Raja Nighantu, Bhavaprakasha Nighantu also describe some aspects of Vrikshayurveda.

Another book Kakayapiya Krishi Sukta of Rishi KASHYAPA is a text on agriculture narrated by sage Kashyapa. It contains the description of eatable and non-eatable substances and methodology of paddy cultivation.

In post-Vedic period, sciences of Medicine, Agriculture, Arbori-horticulture, Sylviculture and other sciences were greatly developed. These sciences of Botany given in Agni Purana & Brihat Samhita were called:

1. Vrukshayurveda - the knowledge of tree's life
2. Bhesajavidya - the knowledge of medicine for plants

Gulma Vriksha Ayurved is a book that covers topics related to herbs and plants.

The Sushruta Samhita describes over 700 plants used for medicinal purposes. The descriptions include the herbs' taste, appearance, digestive effects, safety, efficacy, dosage, and benefits.

The oldest surviving manuscript of the Suśrutasamhitā is MS Kathmandu KL 699, a palm-leaf manuscript preserved at the Kaiser Library, Nepal. Palm leaves of the Sushruta Samhita or Sahottara-Tantra from Nepal are stored at Los Angeles County Museum of Art.

The Charaka Samhitā, foundational Ayurvedic text, presents the earliest known plant classification system in Bharat, based on habitat, presence of flowers/fruits and reproduction.

VRIKSHAYURVEDA

The term “Vrikshayurveda” has been in use, by the time Kautilya (296–321 BC) compiled his “Arthashastra”.

Next was Brihat Samhita compiled by Varahamihira(505-581 BCE) which briefly discusses the topics like clouds, indication of yield of crop right from the blooming of flowers to harvesting and ascertaining water in dry regions.

The two texts compiled in the 11th century were: Surapala's Vrikshayurveda (1000CE) and Vrikshayurveda chapter in Lokopakara composed by Chavundaraya(1025CE)

In the 12th century, Chalukya King-Someshvardeva compiled an encyclopedia called "Abhilashitarthachitamani" or "Manasollasa" in which a full chapter on Vrikshayurveda was included.

In the 13th century, among the various texts describing Vrikshayurveda, Upavanavinoda compiled by Sarangadhara in Sarangadhara Paddhati, a courtier and scholar in the court of King Hammira, gives the details of various kinds of soils, water conservation and landscape gardening.

Chakrapani Mishra, in the court of Maharana Pratipada, compiled (1577AD) the text “Vishvavallabha”, which has contents similar to Surapala's Vrikshayurveda.

The last text, available as “Shivatatvaratnakara” (in Kannada) compiled by King Basavaraja of Keladi, now in Karnataka, has a chapter on “Vrikshayurveda”.

Two ancient books are completely dedicated to Vrikshayurveda.

Vrikshayurveda written by **Salihotra** around 400 BCE, consists of twelve chapters:

1. Bhumi nirupana (Graphical representation of Soil classification)
2. Bijoptividhi (illustrates the process of seed germination)
3. Padapavivaksa (Discusses plant biology and that plants have senses.)
4. Ropana Vidhana (method of cultivation)
5. Nise canavidhi (the life of plant)
6. Poshan vidhi (methods of nurturing)
7. Drumaraksha (protection of trees)
8. Taru Chikitsa (methods of curing)
9. Upavanakriya (Gardening methods)
10. Nivasa sthan taru Subhasubha Lakshana (perfect dwelling)
11. Taru Mahima (glorifies trees)
12. Citrikarana (art of making trees blossom throughout the year).

This book by Salihotra describes various types of land and soil:

- The first category of land is known as Anupa Desha, fertile in nature with abundant water, green trees, climate suitable for the growth of plants and soil rich in natural nutrients.
- The second category is Jangala Desha where the land is dry & barren.
- The third category of land is Sadharana Desha where the water content in the soil is less.

The book gives in detail the preservation, care of seeds and its germination also. The methods used for the irrigation of the plants and the amount of water needed for the proper growth of a plant are mentioned in depth. The book states a fertilizer called 'kunapajala' (smelling like a dead body, stinking) formed from fermentation of the animal remains, such as flesh, marrow, etc. and used for the cultivation of the plants. There is a mention of innumerable methods to protect the plants and trees from extreme weather conditions and treatment of branches and roots if affected by diseases. It also contains the names of diverse plants which should be planted around dwelling place. This book also describes the techniques used to help plants and trees bloom flowers and bear fruits throughout the year irrespective of the season, climatic conditions etc.

The other book on Vrikshayurveda was written 1400 years after Salihotra, by **Surapala** (1000 CE). Surapala lived and worked in Bundelkhand in central Bharat, under the royal patronage of King Bhimapala and carried out his experiments in horticulture and botany. Surapala's book deals with various subjects such as planting a garden, importance of various trees, collection, examination and treatment of seeds, selection of suitable land, soil characteristics, digging of planting pits, different methods of irrigation, plant nutrition, fertilizers, diseases of trees and their treatment, the wonders of horticulture, plant conservation, underground water resources etc. This book is divided into 13 chapters and in the book the whole plant kingdom is classified into 4 types based upon their morphology. He wrote about all the basic information, a millennium ago when chemical fertilizers and pesticides were unknown. In those days plant's diseases and pests were dealt with by natural means available to the farmers using the locally available materials.

Acharya Surapala is referred to be a prominent physician of his time, given the title of 'Vaidya vidyavarennya'.

These techniques of agriculture yield magnificent results. This manuscript on horticulture gives methods to prepare various kinds of manures for good yield and preparation of various solutions to treat plant diseases.

BHESHAJAVIDYA

Bheshaja is a word that means medicine or remedy. Physicians use bheshaja to treat illnesses by selecting the appropriate Bheshaja kala which is decided based on the Agni-Bheshaja interaction needed for a specific disease. Agni-Bheshaja interaction is the interaction between medicine and the digestive fire called Jatharagni.

CLASSIFICATION:

Parashar is considered the father of Botany. Simple plant classification became more botanical with the work of Parashara (400 – 500 AD) who is the author of Vṛkṣayurveda (the science of life of trees). He made close observations of cells & leaves and divided plants into Ekamatrka (Monocotyledons)

having Jalika parna(reticulate venation) and Dvimatrka (Dicotyledons) having Maunja parna(parallel venation).

Different parts of plants mentioned are : Patra (leaf), Puspa (flower), Phala (fruit), Mula (root), Twak (Bark), Kanda (stem), Sara (Heart wood), Swarasa(sap), Niryas (Exudation), Sneha (Oleaginous matter), Kantaka (Spine or prickle), Bija (seed), Praroaha(Seedling) etc.

The plants were divided into groups (ganas). They are as under:

Cutaganiya puspa-Anacardiaceae Samiganiya puspa-Leguminaceae, Puplikaganiya Puspa -Rutaceae SwastikaganIya puspa-Cruciferae Trpusaganiya puspa - Cucurbitaceae, Kuhapuspaganiya-Rhamnaceae , Odrapuspageniye-malvaceae, Mallikaganiya - Apocynaceae VajrapuspaganIya-Pedaliaceae, Brngpushpganiya- Verben aceabe, Kotarapusp gantys - Convolvulaceae, Bhedrapuspgeniysa -Meliaceae, Cutapuspaguniya- Anacordianceae.

Plants in which the flowers are invisible are called Puspamvyaktam, Apuspavanta. Plants in which flowers are visible and bear fruits are grouped as vanaspatya.

Various classifications of fruits have been mentioned. Some of them are:

1. Phalgu phalam : fruit developed on round thalamus.
2. Kumbha phalam : pitcher type fruit
3. Tripusa phalam : fruit with three placenta
4. Srngi phalam : Horn shaped fruit
5. Triputa phalam : Fruit with three chambers
6. Guccha phalam : Aggregated fruit.
7. Samiphalam : Fruit with seeds in lateral rose

ANATOMY OF PLANT IN PARASHAR'S VRIKSHAYURVEDA:

It gives a more detailed and clearer description of the plant anatomy. According to Parasara, there are tissue systems meant for the transportation of nutrients and sap. The vascular system has been given the name sarvasrotamsi (that which helps in the flow). This is divided into two categories, first is syandana and second in sirajala, which are xylem and phloem, respectively. He explains that the syandana is involved in the transportation of rasa, which is absorbed from the Earth (Prthvi) to all parts of the plant body and sirajala helps in the re-distribution of nutrition from the leaf to other parts of a plant.

But the most remarkable anatomical observation made by Parasara is the detailed description of the plant-cell in comparison to Robert Hooke who discovered the cell in 17th century. Parashara notes that the internal structure of the leaf consists of innumerable compartments, which are filled with the sap. They are the storehouse of sap (rasasrayah) and covered by a boundary-cell wall or cell-membrane (kalavestana). The structure has five elemental principles (pancabhautika gunasamanvita) as well as a colouring principle (ranjakayukta), and can't be visible to the naked eye. The thin boundary originates from a fluid (kalaladupajayate), which is called protoplasm by the modern botanists.

OTHER KNOWLEDGE SOURCES:

According to Atharvaveda:

1. Knowledge of chlorophyll:

In Atharvaved 10.8.31

अिववैर् नाम देवततेर्नास्ते परीवृताः। तस्या रूपेणेमे वृक्षा हिरता हिरतस्रजः ॥

The God, Avi(chlorophyll) by name, sits enveloped with right; by her form these trees [are] green, green-garlanded.

2. Knowledge of water cycle:

Atharvaveda 4.27.4

अपः समुद्राद् िदवमुद् वहिन्त िदवस्पृथिवीमिभ ये सृजिन्त ।
ये अिद्धरीशाना मरुतश्चरिन्त ते नो मुञ्चन्त्वं हसः ॥

Water vapours are transferred from oceans into mid-sphere of the atmosphere.

Atharvaveda 3.13.2

यत् प्रेिषता वरुणेनाच्छीभं समवल्गत ।
तदाप्नोिदन्द्रो वो यतीस्तस्मादापो अनुष्ठनः ॥

According to Atharvan, water evaporates from Earth which rises up which receives electrical charges in mid sphere, thus they are called apah. Deity Varuna is god of oceans.

Atharvaveda 3.13.1

यददः संप्रयतीरहावनदता हते ।
तस्मादा नद्यो नाम स्थ ता वो नामािनि िसं धवः॥

Water from rivers transform and fall into terrestrial plane after falling from mid-sphere(heaven) in the form of raindrops. The terrestrial rivers are called *Nadi* as they produce sound while flowing down.

Atharvaved classified plants based on their characteristics, such as color, size, nature, and medicinal uses.

It presents an account of eight types of growth habits of trees. These are: (1) Visakha (spreading branches); (2) Manjari (leaves with long clusters); (3) Sthambini (bushy plants); (4) Prastanavati (which expands); (5) Ekasrnga (those with monopodial growth); (6) Pratanavati (creeping plants); (7) Amsumati (with many stalks); and (8) Kandini (plants with knotty joints).

Atharva Veda also contains descriptions of many medicinal plants. In the ancient Bharatiya texts, the nomenclature of the plants was based on the plant's botanical characters and their therapeutic properties.

Atharvaved Hymn 6.142.2 - Yava (Barley) is equated to God:

आशृण्वन्तु यव देवं यत्र त्वाच्छावदामिस ।
तदुच्छ्रयस्व द्यौरिव समुद्र इवैध्यक्षतः ॥ (२)

सामने हो कर हमारी बात सुनते हुए जौ नामक देव की मैं इस भूमि में प्रार्थना करता हूँ.

तू धरती पर आकाश के समान ऊँचा हो
तथा सागर के समान क्षय रहित हो कर बढ़. (२)

While listening to us in front of us, I pray to a god named Barley in this land. You should be as high as the sky on the earth and grow without decay like the ocean.

Atharvaveda consists of a detailed description of herbs, mentioning their form, availability, properties, and uses, which is a major part of the management aspects of any disease. There are references to approximately 50 diseases and 288 Oushadhis in Atharvaveda.

Names of some Oushadhis(herb):

Ashwath, Nyagrodha, Arjun, Pippali, Prsniparni, Munja, Varana, Kustha, Apamarga, Munja, Rajani, Shri Ram, Syama, Krsna, Parnadhi, Vaca, Sana, Prakri, Laksa, Gulgulu, Sami, Arka, Jivanti, Baja, Darbha, Kanera, Taudi, Agni, Udumbara, Bilva, Rohani, Manduki.

The Atharvaveda has classified plants into various categories based on their morphological characters and other properties, such as:

Prasthanavati (spreading), Sthambini (bushy), Ekasugna (with single whorl of calyx), amsumati (having many shoots), Kandini (jointed), Visakha (having extending branches), Jiivala (lively), Nagharisa (harmless) and Madhumati (very sweet).

According to Taittiriya Samhita and the Vajasneyi Samhita:

Plants comprise of mula (root), the tula (shoot), the kanda (stem), the valsa (twigs), puspa(flowers) and phala (fruits). While trees have in addition skandha (the crown), sakha (branches) and parna (leaf).

According to King Manu:

Bharatiya sage Manu classified plants into eight groups:

- Aushadhi: Plants that produce lots of flowers and fruits, but die after fruiting, like wheat and rice
- Vanaspati: Plants that produce fruits but don't have obvious flowers
- Vrksa: Trees that produce both flowers and fruits
- Guccha: Bushy herbs
- Gulma: Succulent shrubs
- Trna: Grasses
- Pratana: Creepers that spread their stems on the ground
- Valli: Climbers and entwiners

CHARAKA: was the royal physician of King Kanishka. In his Charak-Samhita he gives a classification similar to the above. Sushruta also follows a similar pattern. Plants were classified according to their medicinal properties and dietic properties.

Sushruta classified medicinal plants under thirty-seven ganas or sections. Plant classification, based upon their dietic properties, was also attempted by Charaka and Sushruta.

The system of nomenclature which the ancient Bharatiya system adopted used double names – one based on external features and the other based on some special medicinal, dietic or other properties.

Different types of salt are mentioned in the treatise depending on its place of procurement.

- Sauvarchala - obtained from the region of Sauvira
- Saindhava - obtained from the banks of river Sindhu
- Paamshuja - obtained from Poorva Samudra
- Samudra - from Dakshina Samudra
- Romaka - procured from the banks of Ruma river.

The nomenclature of drugs is sometimes done based on the name of the place where it is found in abundance. Some of the examples are:

- Magadhi (*Piper longum* L.) - derived from Magadha
- Kampillaka (*Mallotus philippensis* [Lam.] Muell.Arg)- derived from Kampilya
- Vatsaka (*Holarrhena antidysenterica* [Roth.] DC.)- derived from Vatsa
- Yavanika (*Trachyspermum ammi* Sprague)- derived from Yavana
- Ashmantaka (*Bauhinia racemosa* Lam.)- derived from Ashmaka
- Badara (*Zizuphus mauritiana* Lam)- derived from Vadari
- Kashmarya (*Myrica nagi* Thunb.)- derived from Kashmir
- Sourashtri (alum)- derived from Saurashtra
- Kalingaka (*Albizia lebbeck* [L.] Benth)- derived from Kalinga.

Charaka divided the treatise into eight parts, or ashtanga sthanas: sutra, nidana, vimana, sarira, endriya, chikitsa, kalpa, and siddha,

According to Charaka and Sushruta Samhita the plants were categorized into four classes:

(1) Vanaspati – which bear fruits but not flowers, (2) Vrksa or vanaspatya – which bear both fruits and flowers, (3) Virudh – which creep on the ground or entwine, (4) Aushadhi – annual herbs which wither away after fructification).

Charaka subdivides Virudhs into lata (creeper), Gulma (shrubs), and osadhis (herbs). He further divided the plants into 50 groups based on their physiological actions and diseases they cure, and flowering plants into the following seven heads based on dietetic principles: 1) Sukadhanya (cereals), Samidhanya (pulses), 3) Saka varga (pot herbs), 4) Phala varga (fruits), 5) Harita varga (vegetable), 6) Aharyogi varga (oils), and 7) Iksu varga (sugarcane).

SUSHRUTA

The Sushruta Samhita describing over 700 plants, is an important Classical Sanskrit text on medicine written by Maharishi Sushruta.

Sushruta subdivides Virudhs into two groups, pratanavatya (creepers with spreading stem on the grounds) and gulminya (succulent herbs)

BRIHADARANYAKA UPANISHAD (6.3.13) –

It tells us about 10 grains:

चतुरौदुम्बरो भवित—अउदुम्बरः सुवः, अउदुम्बरश्चमसः, अउदुम्बर इध्मः, अउदुम्बयार् उपमन्थन्यौ; दश ग्राम्याणि
धान्यानि भवन्ति

—व्रीहिवास्तिलमाषा अणुप्रियंगवो गोधूमाश्च मसूराश्च खल्वाश्च खलकु लाश्च; तान्पिष्टान्दधनि मधुनि घृत
उपिसञ्चित, आज्यस्य जुहोति ॥ १३ ॥

-इति तृतीयं ब्राह्मणम् ॥

*caturaudumbaro bhavati—audumbarah sruvah, audumbaraścamasaḥ, audumbara idhmaḥ,
audumbaryā upamanthanyau; daśa grāmyāṇi dhānyāni bhavanti—vrīhiyavāstīlamāṣā
aṇupriyaṃgavo godhūmāśca masūrāśca khalvāśca khalakulāśca; tānpiṣṭāndadhani madhuni ghr̥ta
upasiñcati, ājyasya juhoti || 13 ||*

- iti tṛtīyaṃ brāhmaṇam ||

Meaning: Four things are made of fig wood: the ladle, the bowl, the fuel and the two mixing rods. The cultivated grains are ten in number: Vrini(Rice), Yava(barley), Tila(sesame), Masa(bean), Anu(millet), Priyangu (panicum seeds), Godhuma(wheat), Masura(lentils), Khalva(pulse) and Khalakula(vetches). They should be crushed and soaked in Dadhani(curd), Madhu(honey) & Ghrit(clarified butter), and offered as an oblation.

Anatomy of a plant:

According to Brhadaranyaka Upanisad the five regions present in a plant are: tvak(skin or bark), mamsa (soft tissues); asthi (wood or xylem), majja (pith), and snayu (fibres both xylem and sclerenchyma).

Other ancient Sanskrit works also classified based on texture, colour, taste, surface etc. The morphological classification of plants:

1. Surface: Romasa patri for hairy outgrowth, Randhra patri for leaf with holes and Valka patri for bark-like.
2. Shape: Dirgha patra for long leaf; Mandala patra for rotund leaf; and Visala patra for broad leaf.
3. Colour: Sveta patra for white coloured; Rakta patra for red coloured; Nila parna for blue coloured; Suvarna parna for gold coloured and Dhumra parna for smoke coloured leaf.
4. Taste: Svadu patri for sweet leaf; Amla patra for sour leaf; Katu patra for leaves with spines; and Tikṣṇa patra (hot taste).
5. Texture: Lomasa-vasana for hairy stem; Mrdupatra for soft leaf; Komal patra for tender leaf; and snigdha patra for rough, thick leaf.
6. Leaflets: Ekapatrika for one leaflet, Dvipatrika for two leaflets, Tripatrika for three leaflets, Chatuspatrika for four leaflets, Panchapatrika for five leaflets, Saptaparni for seven leaflets and Bahupatrika for a number of leaflets.

RAJANIGHANTU

The Nighantu period (time when various glossaries or compendiums of medicinal plants and substances) were compiled and developed, signifies a golden era in Ayurvedic Materia Medica, marked by the creation of essential lexicons and the incorporation of new drugs, enhancing the detailed descriptions of plants and their medicinal applications.

1. In Rajanighantu names and synonyms of medicinal plants are assigned on the basis of traditional usage, effect, habitat, morphological character, simile, potency and names prevalent in other regions or due to other factors.
2. In Dhanvantarinighantu one or many names are assigned to the plants according to habitat, form, colour, potency, taste, effects, etc.
3. In Nighantushesha, Khanda (Chapter) is described on the basis of Vrksa (Tree), Gulma (Shrub), Lata (Creeper), Saka (Herb), Trina (Grass) and Dhanya.
4. In Bhavprakashnighantu specific attributes of medicinal plants are described on the basis of guna and morphological character.

On the basis of above ancient books and literature, it may be concluded that study of plants (plant taxonomy and study of medicinal plants) was well developed during Vedic period. Our renowned botanists(sages) had vast knowledge of plants with their botanical characteristics and medicinal value and various botanical names have been taken from Sanskrit names.

REPRODUCTION IN PLANTS

Ancient Bharatiya literature also deals with sex, genetics, and reproduction of plants by fruits, seeds, roots, cuttings, graftings, plant apices and leaves.

Buddha Ghosa, in his Sumangala-vilasini, a commentary on the Digha Nikaya, describes some of these methods under such terms as mula-vija (root-seed), khandabija (cuttings), phaluvija (joints), agravija (budding) and bija-bija (seed).

Atharvaveda and Arthasastra describe the propagation by seed (bija-bija or vijaruha) and bulbous roots (kandavija), respectively. The method of cutting (skandhavija) is described in the Arthasastra, Brhatsamhita and Sumangala-vilasini in the case of sugar cane, jackfruit, blackberry, pomegranate, vine, lemon tree, asvattha (*Ficus religiosa*), nyagrodha (*Ficus bengalensis*), udumbara (*Ficus glomerata*) and several others.

Some ideas related to sexuality in plants are noticeable in the Harita and Charak Samhitas. Charak recognized male and female individuals in the plant called Kutaja (*Hollerhina antidysenterica*), and the male categories of plants bearing white flowers, large fruit and tender leaves and the female categories characterized by yellow flowers, small fruits, short stalk, etc.

The Rajanighantu mentions the existence of male and female plants in the plant Ketaki (*Pandanus odoratissimus*). The male plant is called sitaketaki, and the female is called svarna ketaki.

Charaka and Sushrut mention that the fertilized ovum contains in miniature all the organs of the plants, for example the bamboo seed containing in miniature the entire structure of the bamboo tree, and further that the male sperm cell have minute elements derived from each of its organs and tissues. Such ideas closely resemble Darwin's 'gemmules'.

TREATMENTS FOR PLANTS:

Atharvaveda explains the destruction of corn due to insect pests. Vinaya, the famous Buddhist text, describes the blight and mildew diseases. A much later text, Shukraniti, gives a detailed account of

danger to grains from various agents such as fire, snow, worm, insect, etc. Gunaratna, in his *Saddarsanasamuccaya*, observes that plants are afflicted by diseases, displacement or dislocation of flowers, fruits, leaves and barks in the same way as the human body suffers from jaundice, dropsy, emaciation, stunted growth of finger, nose, etc., and respond to treatment like human bodies.

According to Varahamihira, plant diseases are caused by cold climate (low temperature), wind (dryness) and sun (heat) and indicated by the yellowness of the leaves, non-or under-development of buds, dryness of the branches and the exudation of the sap. He also described the treatment:

The paste of ghee, vidanga (*Embelia ribes*) and mud kneaded in the infected parts and then diluted milk should be sprinkled over the area.

Agnipurana prescribes a mixture of vidanga with rice, fish and flesh. Agnipurana and *Brhatsamhita* suggested the following treatment when a tree is not producing flowers and fruits: the hot decoction prepared of kulattha (horsegram, *Dolichos biflorus*), masa (blackgram, *Phaseolus mungo*), mudga (greengram, *Phaseolus radiatus*), tila (*Sesamum indicum*) and yava (barley) in milk. Cool the mixture and sprinkle it on trees.

Use of Aak- To control weed, cut branches of aak(*calotropis*) are kept at the entrance of rainwater channel, several times in a day.

Use of cactus milk- For paddy pest control, cactus milk to be poured into the water inlets in the paddy field.

Use of asafoetida- Asafoetida is applied to the rot portion of the stem of bottle guard in the form of bandage which cures the plant.

Use of white mustard- White mustard controls pest colonisation and also as an anti-fungal to plant.

Use of milk and honey- Honey is anti-microbial and milk induces disease resistance in plants.

Rasarnavakalpa of Rudrayamala Tantra, describes the properties of mineral substances, plants and the character of soils of different regions for alchemical purposes. The names of subdivisions, based on the properties of mineral substances, are as follows:

Gandhikakalpa (properties of sulphur) & Talakakalpa (properties of orpiment)

The subdivisions relating to soil and water are as follows:

1. Daksinatamravarṇakalpa (copper-coloured earth of southern region)
2. Mayuragirakalpa (soil of mountainous region of Mayuragira)
3. Nagamandalakalpa (soil of Nagamandala)
4. Candrodakakalpa (water exuded from mountain peak on the full moon night)

The subdivisions relating to water are:

1. Visodakakalpa (poisonous water)
2. Sailodaka vidhi (rules for applying mineral waters)

The text discreetly emphasizes the role of medicinal herbs in the processing of alchemical substances.

The whole vegetable kingdom seems to have been divided into two categories, medicinal (divyausadhi) and non-medicinal (trnausadhi).

In the Mahabharata Shanti Parva, scientific thought evolved. Absorption and assimilation of food from the soil by the roots, distinction between fertile and sterile soil, knowledge of trees, methods of planting, grafting and transplanting, various types of manures, rotation of crops, pollination of seeds, nomenclature of plants, the habitats required etc are mentioned in Brihatsamhita, Puranas and other texts written by great scholars like Varahamihira, Shankara Mishra, Gunaratna, Udayana and others.

JIVAKA

Jivaka was the personal physician of the Buddha and the Bharatiya King Bimbisāra. He lived in Rājagṛha, present-day Rajgir, in the 5th century BCE.

In the Sanskrit and Tibetan version, Jīvaka is recognised and named the "Medicine King" by the court on three occasions, each time after a medical miracle. He is therefore, also described as the "Thrice-crowned Physician". The Jīvakarāma monastery was identified by the Chinese pilgrim Xuan Zang in the 7th century, and it was excavated in the 19th century. The Pāli, Tibetan and Sanskrit traditions explain that his second name became Komārabhacca, Komarbaccha having been brought up by Prince or Kumar Abhaya, son of King Bimbisara. As he grew up, Jīvaka decided to go to Takshashila University, to learn traditional medicine. ṛṣi (seer) called Ātreya Punarvasu initially sent Jīvaka and his fellow pupils to look for any plant in the forest that did not have medicinal qualities. Jīvaka returned disappointed, disclosing to Ātreya that he could not find a single plant, which doesn't have medicinal properties proving his excellence. He was trained for seven years in Takṣaśilā. Jīvaka learnt the classical Āyurvedic medical treatises of the time, such as the Caraka Saṃhitā and the Suśruta Saṃhitā. Jivaka became the physician to King Bimbisara who was a follower of Gautama Buddha. There are many surgeries that have been attributed to Jivaka as also a variety of medical treatments.

VARAHAMIHIRA

Astrologer, astronomer, and mathematician Varahamihira, born in 505 CE, also known as Varaha or Mihira, was an ancient Bharatiya who resided in Ujjain, Madhya Pradesh (Avanti of Malwa).

Varahamihira made significant advances in astronomy and mathematics.

- He enumerated the five astronomical schools that were in use at the time in his Panchasiddhantika.
- Varahamihira contributed significantly to the domains of hydrology, geology, and ecology. His Brihatsamhita is an encyclopaedic text that covers a wide range of subjects, like how to sharpen swords, how to determine the worth of precious metals and stones, how to get plants to grow fruit out of season, and more. It explains the seasons and goes over meteorological topics like the relationship between clouds, winds, and rainfall amounts.
- He was a pioneering scientist who suggested that termites and plants might be indications that there is water underground. He listed six animals and thirty plants which can be a sign that there is water nearby.

VEDIC ZOOLOGY

Rigveda, Atharvaved & Taittiriya Samhita mentions deers & horses of different colours, 21 varieties of peahen, 34 ribs in a horse and 20 nails in the paws of a tiger.

Taittiriya Samhita classifies animals as those supported by bones and those supported by flesh.

Chandogya Upanishad classifies all living creatures on the basis of their bija(seed):

Jivaja(viviparous): Mammals

andaja(oviparous): Reptiles, Birds, Insects and worms udbijja(vegetable origin): minute animal organisms

Charak Samhita: Charak, the first physician to present the concept of metabolism, digestion and immunity was Charaka. According to him the body contained three doshas vata, pita and kapha and any disturbance in them caused an imbalance in the body. His medicinal drugs could restore the balance in such cases. Genetics and its fundamentals were also known to him. His views were that an individual is a replica of the Universal spirit. Along with the five elements Earth, air, water, fire and ether, the self or the spirit was the sixth element equivalent to Brahman in the Universe.

In Caraka samhita, 230 types of animals have been mentioned.

Charak Samhita classifies animals as:

Jaryuja - born from uterus

Andaja- Born out of ovum/egg

Svedaja/usmaja- born due to heat & moisture; spontaneously/ asexually

Udbijja- born from vegetable organisms

Similar classification is there in Sushrut Samhita, but these classifications are not exclusive and there are a lot of exceptions eg Ahipataka snakes are Viviparous.

Another classification in Charak Samhita is according to the characteristics:

1. Krmi: germs found in living creatures
2. Kita: wingless insects
3. Patanga: flying insects
4. Ekaśapha: soliped animals
5. Dwisapha: cloven-footed animals
6. Mrga: herbivores
7. Kravyada: carnivores
8. Svapada: dangerous beasts
9. Vyala: beasts of prey
10. Gomayu: creatures with poisonous fangs
11. Sarpa: snakes

According to habitat, Charak classified animals as:

1. Prasaha: creatures which grab and tear-off their food (29 species)
2. Bhumisaya or Bilesaya: Burrowing animals (13 species)

3. Anupa: marshy, wetlands creatures (9 species)
4. Varisaya: Aquatic animals (10 species)
5. Jalachara/Ambucharin: creatures that live around or on the surface of water (29 species)
6. Jangala: living in dry, hilly forests (17 species)
7. Viskira: gallinaceous birds that scatter food in the process of eating (19 species)
8. Pratuda: birds that pierce or tear their food (30 species)

Susruta samhita classified all living beings into Sthavara (immobile) e.g. plants and Jangama (mobile) e.g. animals. The classification based on habitat is Anupa and Jangala.

Anupa-

1. Kulachara - herbivorous quadrupeds
2. Plavas- Amphibious birds
3. Kosasthas- Molluscs
4. Padins- Aquatic animals with pedal appendages
5. Matsya- Fishes

Jangala-

1. Janghalas - wild & quick herbivores eg deer, antelope
2. Viskira- birds that scatter food
3. Pratudas - birds which pierce their food with beaks
4. Guhasyas - carnivores living in caves
5. Prasahas- birds of prey
6. Parnamrgas - Arboreal animals
7. Bilesayas - animals living in holes and burrows
8. Gramyas- domestic quadrupeds

Classification of snakes:

1. Darvikara - hooded, swift, diurnal and who bear marks of wheels, ploughs, umbrellas, goads. They are most deadly when young (26 species)
2. Mandalins - thick, slow moving with circles or rings, nocturnal. They are deadliest when middle-aged (2 species)
3. Rajimats - nocturnal, variegated colours, series of dots or marks on their body. They are most deadly when aged (10 species)
4. Vaikaranjas - hybrid snakes (10 species)
5. Nirvisas- nonvenomous and they kill by strangulation or crushing of bones (12 species)

Other varieties of species mentioned in Sushruta Samhita are:

Jalauka - leech (12 types among whom 6 poisonous) Luta- spiders (16 types)

Indragopa - glow worms (16 types)

Patanjali's Mahabhashya describes Kshudra jantu :

1. animals without bones

2. animals without blood
3. Minute organisms
4. Organisms which can't be easily crushed
5. all other insects including ichneumon

Umaswami tattvarthathigama -

Umaswami was the earliest Digambara saint whose famous work Tattvarthathigama Sutras contains 357 Sutras which are divided into 10 chapters. Hence, it is also called Dasadhyaya. It occupies in Jainism a place equal to that of Visuddhimagga in Buddhism. The sutra classifies all creatures according to their senses:

Invertebrates who have

- 2 senses - very small creatures(touch/taste):- Apadika(nematodes); Nupuraka(annelids); Grandupada(Cnidaria); Shankha,shutika,samubuka(Mollusc); Jaluka(leeches)

Lower anthropods:

3 senses - small creatures (touch/taste/smell)

pipilika(ant); rohinika(red ant); upacbhika, kunta & tupuraka(bugs &flee); trapusabija & karpasasthika(weevil & louse); satapadi & utpalaka(spring tail); trnapatra(plant louse); kashtra harak(termite & white ant)

Higher anthropods:

4 senses- insects (touch/taste/smell/sight) a) Bhramara, Varata, saranga (bee, wasp, hornet)

- a) Makshika, Puttika, Damsa, Masaka (fly, gnat, gadfly, mosquito)
- b) Vrschika, makarah(scorpion, spider)
- c) kita (butterfly, moth) e) patanga(grasshopper, cockroach, locust)

Vertebrates known as Tiriyagyogins in Jainism/Buddhism:

5 senses are Vertebrates: Man, Matsya, Uruga(reptiles), bhujanga(reptiles and frogs), pakshi(birds), chatuśpad(four legged animal)

This shows that the ancient Hindus had applicable knowledge of animal diversity and natural complexities based on biological organization.

The great ancient brahmana zoologist Ladyayana of a lost atharvan shakha states:

katubih bindu lekhabhih pakshaihi padaihi mukaihi nakaihi shukaihi kantaka-ialgalaihi samshrishtaihi paksha-romabhihi |

svanaihi paramnaihi samsthanaihi li~ngaishvapi shatiragaihi visha-vIryaish cha kItanam rupagyanam vibhavayate ||

In order to obtain knowledge of the classification of arthropods one must carefully examine: 1) veins, spots and markings 2) wings, 3) legs, 4) oral appendages 5) mandibles, 6) antennae, 7) claws and spines 8) abdominal stings 9) bristles on body and wings 10) sounds 11) structure of organs, 12) genitalia 13) toxins and their actions.

VEDIC ASTROLOGY

ब्रह्मा मुरारिस्त्रिपुरान्तकारी
भानुः शशी भूमिसुतो बुधश्च ।
गुरुश्च शुक्रः शनिराहुकेतवः
कुर्वन्तु सर्वे मम सुप्रभातम् ॥१॥

*Brahmaa Muraaris-Tripuraantakaarii
Bhaanuh Shashii Bhuumisuto Budhash-Ca |
Gurush-Ca Shukrah Shani-Raahu-Ketavah
Kurvantu Sarve Mama Suprabhaatam ||1||*

-chapter 14, Vaman Puran

Meaning:

(In the early morning I remember) The Devas Brahma, Murari (The enemy of demon Mura, refers to Sri Krishna or Vishnu) and Tripurantakari (The One Who has brought an end to Tripurasuras, refers to Shiva), then Bhanu (The Sun), Shashi (The Moon), Bhumisuta (Mars) and Budha (Mercury), Guru (Jupiter), Shukra (Venus), Shani (Saturn), Rahu and Ketu, May all of them make my Morning Auspicious.

This Navagraha Shanti mantra is the sequence of the days of a week.

It is an ancient system of astrology, called Jyotish, having its roots in Vedas. The Vedanga Jyotisha is one of the earliest texts about astronomy within the Vedas. It is based on the belief that planets & stars influence our lives. It is based on the 'Sidereal Zodiac', which is based upon the position of earth's equator and stars.

Because of precession, the ecliptic plane shifts about 1 degree every 72 years. Vedic astrology takes precession into account and therefore calculates horoscopes based on the updated ecliptic path. Western astrology is more symbolic, based only on zodiac signs, as opposed to astronomical accuracy.

David Frawley in his book "The Astrology of the Seers," says:

"What we call the planets are no more than points of light in a vast energy network, connected intricately by subtle lines of force, linking the entire solar system into a single organism. Though the planets appear like small points of light in the distance, their energy fields are present on Earth, and they are responsible for many of the formations of the Earth life and of our own bodies and minds."

Since the events in life are related to past karma, how one reacts to them creates further karma, making our destiny. A Vedic astrologer (Jyotishi) is one who would guide a person spiritually, through various domains of life, counselling him to deal with issues related to health, relationships, career and psychology.

Three ways of predictions used by astrologers are:

1. Predictive is linked to the timing of events. An astrologer's skill is judged by accuracy of his predictions and there is nothing spiritual about these predictions which can be related to life events like money, relationships, accidents etc.
2. Judgemental considers various aspects of life linked to past events, astronomical position of planets, intelligence and general capabilities of a person. The judgement is applied with discretion or the person might get a fatalistic attitude and lose the capacity of growth. The judgement should transcend a being towards his higher consciousness while going through the influences of planets or tough times. So, the astrologer tries to give the ways to use higher potentials of astrological charts.
3. Spiritual uses astrology as a tool to gain knowledge using cosmic forces transmitted through the planets to connect to deeper meaning of cosmic nature. It doesn't recognise fate/destiny and the soul transcends time and astrological charts to carve out a way on its own.

So, the Vedic astrology is to know how to manage planetary energy and astral influences in life. It is based on the ruling planet in the birth chart and not the zodiac sign.

FOR A KUNDLI TO BE ANALYSED, ONE NEEDS TO SEE RASHI, NAKSHATRA, GRUHA, KARAK, VARNA, LAGNA, CHANDRA KUNDLI, NAVAMSHA CHART.

Also, while predicting any chart, a study of lagna chart, navamansha, chalit chart, rashi chart, adhyaksh chart, & Dasha-Antardasha table is a must.

The ways in which various astronomical bodies affect:

Sun: It represents the Divine self/Atma on higher level and ego on lower level.

Moon: represents consciousness/Manas. It brings peace and receptivity of the mind by surrendering to the Divine.

Mars: represents energy of transformation, as life requires direction to achieve its goal. Mercury: represents the power of judgement(Buddhi). It creates ways using moral values and principles through which soul ascends.

Jupiter: represents the laws of nature and our creative intelligence to align with the flow of Divine Wisdom.

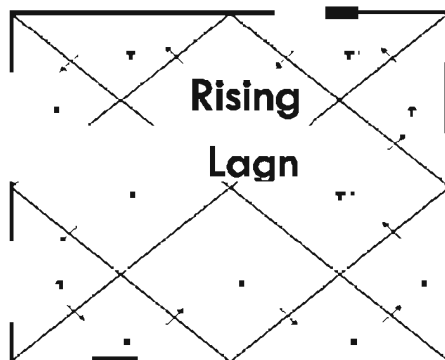
Venus: represents the capacity to project love and beauty.

Saturn: represents the power of our regular actions, setting the forces of nature into motion, going forward to the next life.

Rahu: represents the power of our unfulfilled desires which can distort our perception.

Ketu: represents the illusions of our power and attachment to our accomplishments. The house chart:

In Vedic astrology, Sun & Moon are considered planets. Also, the north and south nodes of the moon, called Rahu & Ketu are also considered planets. The Vedic chart is drawn from the 1st house which is also called ascendant's house. Ascendant is the sign rising on eastern horizon at the time of a person's birth. Ascendant house defines his personality alongside the Moon Zodiac sign.



Pisces	Aries	Taurus	Gemini
Aquarius			Cancer
Capricorn			Leo
Sagittarius	Scorpio	Libra	Virgo

Northern Bharatiya Chart is presented as a square with twelve boxes arranged in a grid, where each box represents a different house. The houses are fixed, and the signs change in relation to the ascendant. Also, the houses are read starting from the top and moving counter-clockwise.

Southern Bharatiya Chart is presented as a rectangular or diamond-shaped chart divided into twelve segments or houses. Signs are fixed, and the houses change in relation to the ascendant. Also, the houses are read starting from the bottom and moving clockwise.

There are 12 houses, each associated with a specific zodiac sign and planetary ruler.

- 1st house: also known as the Ascendant or Lagna, represents you—your personality, physical attributes, early childhood, and overall approach to life.
- 2nd house: This house represents your finances, material possessions, and self-esteem.
- 3rd house: This house represents communication and courage.
- 4th house: This house represents home life, family, history, and traditions.
- 5th house: This house represents creativity and artistic talents.
- 6th house: This house represents health and service.
- 7th house: This house represents partnerships.
- 8th house: This house represents transformation.
- 9th house: This house represents education, travel, philosophy, and higher education.
- 10th house: This house represents career and public life.
- 11th house: This house represents friendships, social circles, and collective goals.
- 12th house: This house represents spirituality, the subconscious mind, dreams, intuition, and secrets.

Duration of planets is one Rashi: Surya (Sun) - 30 days, Chandra (Moon) - 2days & 6hrs, Mangal (Mars) - 45 days, Buddh (Mercury) - 30 days, Guru (Jupiter) - 361 days, Shukra (Venus) - 30 days, Rahu/Ketu - 1 1/2 years, Shani (Saturn) - 2 1/2 years

CHANDRA LAGAN (MOON SIGN ASCENDANT) :

It is the Moon Sign Ascendant, which is a chart that analyzes a person's horoscope using the zodiac sign of the Moon at the time of birth.

The Chandra Lagna chart can reveal a person's emotional nature, instincts, and subconscious responses.

JANMA NAKSHATRA (BIRTHSTAR) :

In Vedic astrology, Birthstar, also known as Janma Nakshatra, is the name of the constellation in which the Moon was located at the time of the birth. There are 27 Nakshatras, covering approximately 13.3 degrees of the zodiac and each one has its own characteristics and influences.

Moon influences the mental aspects of the native. So the nakshatra of the moon casts its indelible influence on the person.

JANMA LAGAN (ASCENDANT SIGN):

Ascendant at the time of birth is known as Janma Lagna. Janma Lagna is the zodiac sign rising at the Eastern horizon at the time of the birth. It forms the base on which the entire Janma Kundali (birth chart) is based.

Depending on the sunrise or sunset at the time of birth, the janma lagna can be either Udaya Lagna (rising in the east) or Godhuli Lagna (setting in the west).

Among the twelve houses, the 1st house is called Lagna and the planet situated in the first house is called Lagnesh.

CHANDRA RASHI (MOONSIGN):

Moonsign at the time of the birth is known as Rashi or Janma Rashi. Moonsign is the name of the zodiac in which the Moon was located at the time of birth. There are 12 zodiac signs (Rashis), each representing a 30-degree segment of the zodiac. Each one also has its own characteristics and influences. Each Rashi contains 2 or 3 Nakshatras. Surya and Chandra are rulers of one Rashi. Rahu & Ketu are not rulers of any Rashi. Each planet is ruler of two Rashi:

Surya- Simha(Leo) Chandra- Karka(Cancer) Buddh- Kanya(Virgo), Mithun(Gemini) Shukra- Tula(Libra), Vrishabh(Taurus)/ Mangal- Mesha(Aries), Vrishchik(Scorpio) Guru- Dhanu(Sagittarius), Meena(Pisces) Shani- Kumbha(Aquarius), Makar(Capricorn)

Shubh(Benefic): Jupiter, Venus & Moon

Paap(Malefic) Gruha(Planet): Mars, Saturn, Rahu, Ketu, Sun

Mercury can be Benefic or Malefic according to its association with the kind of planet.

The property of the house of Birth chart, is positively or negatively influenced by two sources - the Zodiac Sign and the planets. The planets act as Karak, Akarak or Marak related to the Zodiac signs and the ruler of the house decides the basic quality of the planet whether it is Karaka or Akaraka.

Aspect strength of planets overrides the positional strength of planets.

Planetary degrees: Degrees measure the progress a planet has made in its transit through a zodiac sign which depicts the strength of the planet. Every planet is positioned within a specific degree in a zodiac sign at the moment of a person's birth. These degrees, ranging from 0 to 30 for each sign, play a critical role in defining the strength, potential, and influence of the planets.

The beginning and end points of each sign, particularly around 0 and 29 degrees, are considered critical degrees or Sandhi points and depicts transformations.

The degree of a planet also affects how it aspects or interacts with other planets in the chart.

The degree of a planet also indicates its developmental state or Avastha, which reflects its ability to deliver results:

1. Balavastha (Infancy): 0° to 6° in odd signs and 24° to 30° in even signs. Planets here are only beginning to activate their potential.
2. Kumaravastha (Youth): 6° to 12° in odd signs and 18° to 24° in even signs. Planets show more activity and start manifesting results.
3. Yuvavastha (Adulthood): 12° to 18° in both odd and even signs. This is the peak phase where planets deliver their full results.

4. Vridhavastha (Old Age): 18° to 24° in odd signs and 6° to 12° in even signs. The influence begins to wane, showing reduced effects.
5. Mritavastha (Death): 24° to 30° in odd signs and 0° to 6° in even signs. Planets here are least effective, indicating the end of their cycle.

Pushkara degrees, both Navamsha and Bhaga, are auspicious degrees that significantly enhance a planet's benefic qualities:

1. Pushkara Navamsha: These specific degrees within each sign ensure that any planet positioned here will deliver positive results, often overriding other negative placements.
2. Pushkara Bhaga: Certain exact degrees within signs act as powerful sources of good fortune and are highly sought after in chart analysis for their ability to substantially uplift a planet's natural beneficence.

Navamsha is the 9th division of Kundali and is one of the most significant Varga charts to be studied along with the natal chart. In Vedic astrology, both the Lagna-chart and the Navamsa-chart are equally important and are consulted together. The Lagna-chart provides information about the location of planets, while the Navamsa-chart provides information about their strength and quality.

Navamsa is one-ninth of a zodiac sign, or a "division" of a sign, with each division being $3^{\circ}20'$. The Jataka Parijata (chapter 2, verse 85) explains the Navamsa in this way: if a planet in the Navamsa is exalted or in its sign, then it is in motion.

Each of the signs of exaltation and debilitation of the planets contains the navamsha of exaltation and the navamsha of debilitation.

The only exception is the Moon.

Moon is exalted in Taurus and debilitated in Scorpio. The Rashi (zodiac) consists of 12 equal parts of 30° .

The Rashi can also be divided into 27 nakshatras of $13^{\circ}20'$. Each nakshatra has four padas or charades of $3^{\circ}20'$.

If we count the total number of padas, we get $4 \times 27 = 108$.

Each Rashi (12 of them) contains 2 and a quarter nakshatras, i.e. 9 padas ($108/12$).

The number of all navamshas is equal to the total number of padas, of the same size $3^{\circ}20'$.

The average time it takes planets to cross one navamsha is:

Sun - 3 days 8 hours Moon - 6 hours

Mars - 4 days 10 hours 30 minutes

Mercury - 2 days 5 hours 30 minutes Jupiter - 40 days

Venus - 2 days

Saturn - 90 days 10 hours

Rahu/Ketu - 60 days 2 hours

One navamsha rises above the horizon for $3^{\circ}20' \times 4 \text{ minutes} = 13 \text{ minutes } 20 \text{ seconds}$.

When two planets are in the same pada of a nakshatra, it means that they are in the same sign and the same navamsha.

Planets located at a distance of 40° from each other also fall into the same navamsa, as well as planets that are separated by 80°, 120°, 160°, 200°, 240°, 280°, or 320°.

A nakshatra can occupy part of one sign and part of an adjacent sign and a sign can be divided into 9 parts of 3 ° 20 ', each of which is ruled by a separate planet.

The Navamsha chart, also known as the D-9 chart, is a significant aspect of Vedic astrology. It plays a crucial role in providing deeper insights into a person's life, particularly concerning marriage, relationships, and the overall strength of planets.

If in lagna chart any star is exalted, it might be debilitated in navmansha. So, effect of that particular star would be nullified.

Similarly, in lagna chart, a star might be debilitated in navmansha but may be exalted or in own house, so its effect would be very positive or powerful.

SHADBALA IS AN ASTROLOGICAL TERM THAT MEASURES A PLANET'S STRENGTH IN A BIRTH CHART USING SIX FACTORS:

- Sthana Bala: The planet's position in the chart
- Dig Bala: The planet's direction
- Kala Bala: The planet's time
- Cheshta Bala: The planet's motion
- Naisargika Bala: The planet's natural strength
- Drik Bala: The planet's aspectual strength

Bhava Chalit chart helps to adjust for the actual rising sign at the horizon at the time of birth. According to it, planets that are 7–14.5 degrees ahead or behind the lagna degree are considered to be in the 1st house, even if they fall in the 2nd or 12th house.

The Mahadasha is a set of years which will be ruled by a particular planet and is predetermined. Nine Planets will have 9 Mahadashas, the sum of all dasas is 120 years. Dasha time Of Planets: Sun - 6 years.

Moon - 10 years Mars - 7 years Rahu - 18 years Jupiter - 16 years Saturn - 19 years Mercury - 17 years Ketu - 7 years Venus - 20 years

Antardasha means the sub periods of the mahadashas.

Manglik Dosh:

In northern Bharat, Mars is also known by the planet Mangal whereas in South, it is given a name as "Chevvai or Sevvai".

If planet Mars is placed in the 12th house, 1st house, 4th house, 7th house or 8th house from Lagna or Ascendant, then it forms Mangal Dosha in one's Birth Chart. Second house is also considered for Sevvai Dosham according to Southern Bharatiya Astrologers.

Mangal Dosha is seen through the Lagna Chart, Moon Sign Chart and Venus Chart. If Mars occupies the above houses in one's natal chart, then it will be considered as "High manglik Dosha". If it is occupying these houses in any one of these charts, then it will be considered as "Low Manglik Dosha".

If the planet Mars is aspected by the benefic planet like Jupiter or Venus, then this Dosha is cancelled in the birth chart.

Remedies:

- The effects of Mangal Dosha can be nullified through fasting and the worship of Hanuman on Tuesdays.
- People with high Manglik dosha should do Kumbh Vivah to nullify the negative effects of Mangal. For that, they should marry first a Peepal Tree, banana tree or silver/gold coin to take away all the negative influence of Mars energy and person will be free from Mangal Dosha. Later on, they can perform marriage with anyone without any harm.
- If any person is suffering with the "Anshik or Partial Manglik Dosha", then he must perform puja in any temple for "Mangal Shanti"
- One should visit the Navagraha Temple to reduce the negative effects of Mars. It is an auspicious place to visit for Manglik people.

Kal sarp dosh

Kala Sarpa Yoga is formed when all planets are positioned between Rahu and Ketu in Janma Kundali. In such Kundali, any five consecutive houses are always empty.

These doshas are believed to bring challenges related to career, money, relationships, health, and overall happiness, eg, the Anant Kaal Sarp Dosh, with Rahu and Ketu placed in the first and seventh houses, can cause disturbances in marriage and partnerships; the Vasuki Kaal Sarp Dosh may lead to health and emotional problems. Understanding the specific type of Kaal Sarp Dosh is essential. It helps in identifying the root causes of various life struggles.

Kala Sarpa Dosha's twelve categories.

1. Anant (अनन्त)
2. Kulik (कुलिक)
3. Vasuki (वासुकि)
4. Shankhapal (शङ्खपाल)
5. Padma (पद्म)
6. Maha Padma (महापद्म)
7. Takshak (तक्षक)
8. Karkotak (कर्कोटक)
9. Shankhachoodh (शङ्खचूड़)
10. Ghatak (घातक)

11. Vishdhara (विषधर)

12. Sheshnag (शेषनाग)

In Hindu culture, newborns are traditionally named based on their Jyotish charts (kundali) and in taking major decisions related to marriage, starting a new business, or moving into a new home.

VEDIC CHEMISTRY

In ancient Bharat, Chemistry was called 'Rasayan Shastra', most important branch of Sciences then, as was used for plants, animals and human beings. Bharat is rich in natural resources and using them Vedic scholars had advanced in several technologies involving melting, smelting, casting, calcinations, sublimation, steaming, fixation and fermentation. Gold, silver, copper and iron were used very extensively in medicines by Vedic physicians and are mentioned in Rigved. Other than these, Tin & Lead are mentioned in Shukla Yajurved. Sage Kanad who gave Vaisheshik Darshana has mentioned Dravya (matter) of a Padarth (Substance) has 9 elements: Prithvi(Earth), Jala(Water), Agni(Fire), Vayu(Air), Akash(Space), Kala(Time), Dik(Direction), Jivatma(Soul), Paramātmā (Supreme Soul) and Mana (Mind). He was the first to use the terms Kana (molecule) and Anu (atom).

Similarly, this hymn in Yajurveda Taittiriya Samhita 18.13 proved the knowledge of metals:

अश्मां च मे मृत्तिका च मे िगरयश्च मे पर्वताश्च मे िसकं ताश्च मे वनस्पतयश्च मे िहरण्यं च मेऽयश्च मे
श्यामं च मे लोहं च मे सीसं च मे त्रपुं च मे यज्ञेन कल्पन्ताम् ॥१३॥

Meaning: Yajna karma should increase minerals, soil, mountains, sand, herbs, gold, iron, bronze, lead and tin. May Yajna come to fruition for us.

In the Maitrayani Samhita 4.2.9 of Yajurveda, there is mention of the term श्यामेनायसा for iron & लोर्हितेनायसेतित for copper and also mentions a goldsmith ie. िहरण्यकारं (30.17) and ladies who do dyeing - रजियत्रीम् (30.12)

In the Early Rig Vedic age, copper, bronze, gold and silver are mentioned. 'Ayas' term has been used for the copper metal and Gold was known as "Hiranya".

The ninth Mandal of Rigved with approximately 610 shlokas refers to Soma plant. Soma Mandala, has 114 hymns, entirely devoted to Soma Pāvamāna- "Purifying Soma."

The Soma plant didn't have leaves and its juice was extracted from the stem. It would go through the process of fermentation and filtered through Goat's wool. It was golden in colour and in large doses, it can cause hallucinations. Some shlokas on Soma plant:

स्वादिष्ठया मिदिष्ठया पवस्व सोम धारया । इन्द्राय पातवे सुतः ॥

svādiṣṭhayā madiṣṭhayā pavasva soma dhārayā indrāya pātave sutah ||

-Rigveda (9.1.1)

Meaning: Flow, Soma, in a most sweet and exhilarating stream, effused for Indra to drink.

*apama somam amṛtā ā abhūma āganma jyōtir āvidāma devā n
kīm nūnām asmā n kr̥ṇ avad aratih kīm u dhūrtīr amrita mārtyasya.* -Rigveda (8.48.3)

We have drunk the soma; we have become immortal; we have gone to the light; we have found the gods.

What can hostility do to us now, and what the malice of a mortal, o immortal one?

Srisuktam is a collection of hymns recited during Gandha Snan of Rudrabhishek , in the praise of Sri Mahalaxmi, and other rituals related to Goddess Laxmi. The following hymn proves that Vedic Chemists have contributed immensely to the field of Cosmetics and Scented Perfumes from the Vedic period onwards.

The ninth verse says:

गन्धद्वारां दुराधषारं िनत्यपुष्टं करीषिणीम् ईश्वरीं सवर्भूतानां तामिहोपह्वये िश्रयम्॥ ९

gandha-dwaaraang duraadharshang nitya-pushtaang kariishiniim |

eishvariim sarva-bhuutaanaang taamihopahvaye shriyam ||9||

Who is the Source of All Fragrances, Who is Difficult to Approach, Who is Always filled with Abundance and leaves a Residue of Abundance wherever She Reveals Herself. Who is the Ruling Power in All Beings; Please Invoke Her Here, Who is the Embodiment of Sri.

Early medical texts, especially the Charakasamhitā and Suśhrutasamhitā, contain early references to Rasa Sastra (science of elements). Varahmihir wrote:

ashtau seesakbhagah kansasya dvau tu reetikabhagah

maya kathito yogoayam vigyeyo vajrasanghatah. - (BRIHAT SAMHITA)

This means that if a compound which has eight parts of lead, two parts of bronze and one part of iron is used in the way that Maya has prescribed, it will change into thunderbolt (Adamantine- alloy).

Before 18th century, the world knew only 7 elements: Swarna (gold), Rajat (silver), Tamra (copper), Loha (iron), Ranga (tin), Sisa (Lead) & Parad (Mercury). But, in Bharat, many elements were already in use much earlier than that.

Tamils of the Chera Dynasty produced the finest steel in the world called the wootz steel, the formulation of which is extinct now. It was exported as cakes of steely iron. There are several archaeological evidences on ancient Bharatiya metallurgy. Excavations in Middle Ganges Valley led to discovery of iron workshops dating back to 1800 BCE.

RASA has different meanings - "*Rasyate Aaswadyate iti Rasa*" which symbolises taste, "*Rasati Shariire Aasu Prarati it Rasa*" meaning juice, "*Rasati Aharahargachhati iti Rasa*" that stands for digested liquid plasma, "*Rasanaat Sarva dhatuunam Rasaityabhdhiyate*" is for material which is capable of destroying and digesting all metals. So, Rasa word has been used for essence, taste, sap, juice, semen but mostly refers to mercury in the context of chemical practices.

Rasayana is a Sanskrit word from Ras, that translates to "path of essence" or "rejuvenation" and refers to the science of promoting health & longevity.

Rasayana can be classified as:

- Aushadha Rasayana - Based on drugs and herbs
- Ahara Rasayana - Based on diet and nutrition
- Achara Rasayana - Based on conduct and behaviour

Classification of Rasayana:

There are various classifications for Rasayana therapy, which are as follows:

1) Kama Rasayana - Kama Rasayana is used to fulfill a wish or desire or to serve a special purpose (Kama - desire). It is also used to promote general physical & mental health and is of three types:

- Prana kama Rasayana - It is used for achieving or maintaining the highest level of Prana (life energy) in the body.
- Medha kama Rasayana - It is used for enhancing memory and intellect.
- Srikama Rasayana - Improves complexion.

2) Naimittika Rasayana - Naimittika Rasayana is given to balance a specific cause relating to a disease in the body. Some examples of this Rasayana are Dhatri Rasayana, Mandookaparni Rasayana, Brahmi Rasayana and Triphala Rasayana.

The texts of Vedic chemistry reflecting all knowledge are:

- Rasaratnakar, 'Rashrudaya', 'Rasendramangal', 'Arogyamanjari', 'Yogashtak' and 'Yogasar' by Nagarjuna.
- 'Rasaratna- samucchaya' of Vaagbhata.
- 'Rasarnav' by Govindacharya.
- 'Rasendra Chintamani' by Ramchandra.
- 'Rasendra Chudamani' by Somdev.
- 'Ras Prakash Sudhakar' by Yashdhar.

NAGARJUNA is considered as the father of Ras Shastra. It deals with the therapeutic use of all minerals and metals, most prominently Mercury and its processing techniques. And GOVINDACHARYA was called the father of alchemy works.

The following verse draws an equation between the process of purification of substances in chemistry and the importance of purification of the soul, taking into account the greatness of inner purification in spiritual goals.

Nagarjuna's verse in Rasashastra:

सर्वं द्रव्यं यथा दोषैः संस्कार्यं रसरूपतां तथा तत्त्वे स्वकर्माणि संस्कुर्वीतार्तदौ पुरुषः॥

MEANING: "just as all substances are purified by removing impurities, similarly, one must purify oneself to purify one's actions."

He had developed the science of Alchemy of turning the metals into Gold.

In Ayurveda, intake of swarna bhasma (gold powder) as a therapeutic agent is suggested for treating several ailments. This swarna bhasma is not the direct powder of the physical gold but the substance obtained after being chemically processed such as heating to high temperatures in air or oxygen (termed calcination) of metal (gold) and subsequent mixing with herbs.

Nagarjuna practiced ayurvedic alchemy (Rasayana). Kumārajīva's biography describes Nagarjuna making an elixir of invisibility. Taranatha and Xuanzang mentioned that he could turn rocks into gold. Eduard Sachau in his book Alberuni's Bharat quotes thus about the art, "They have a science similar to alchemy which is quite peculiar to them. They call it Rasayana, a word composed with rasa, i.e. gold. It means an art which is restricted to certain operations, drugs, and compound medicines, most of which are taken from plants."

There are evidence of his experimental laboratory in Nagalwadi village in the district of Nagpur of Maharashtra where Nagarjuna migrated from Gujarat. Considered the most prominent scholar in Bharatiya Alchemy, Nagarjuna is featured in the National Science Centre (Delhi) in the 'Our Science & Technological Heritage' gallery. His typical alchemical laboratory called the Rasashala is recreated in this gallery.

His RasaShastra describes the use of metals, gems, minerals and poisons, to produce special formulations which help in combating acute conditions or serious diseases. Mercury was identified with the male principle (Shiva), while sulphur (gandhaka) was associated with the female principle (Shakti) in most parts of Ras Shastra.

In Rasa shastra texts, eight maharasas, eight uparaasas, seven dhaatus, navaratnas or nine precious stones, and poisons are the broad categories of chemical substances discussed below.

Maharasas are the substances that are useful in enhancing the medicinal values of Parada (Mercury). According to Rasaratna Samucchaya Maharasas are:

*abhravaikrantamaksikavimaladrijasasyakam |
capalo rasakasceti jñātva'stau samgrahedrasān || (RA.RA.SA.2/1)*

1. Abhraka (Mica)
2. Vaikranta (Tourmaline)
3. Makshika (Pyrite)
4. Vimala (Iron Pyrite & Cubic sulphide of Iron)
5. Adrija or Shilajatu (Asphaltum Punjabinum)
6. Sasyaka (Copper sulphate or Blue vitriol)
7. Chapala (Bismuth ore)
8. Rasaka (Zinc)

The eight uparasas are sulphur, red ochre, iron sulphate, alum, orpiment (arsenic trisulphide), realgar (arsenic sulphide), collyrium (compounds of antimony), and tintstone or cassiterite (tin dioxide).

Uparasas are very significant because without them, the Marana of Maharasas is not possible. Marana is an Ayurvedic process of incinerating metals and minerals to create a fine, tasteless, and absorbable

powder called Bhasma. They are also helpful in imbibing Dehasiddhi and Lohasiddhi qualities into Parada.

Types of Uparasa:

*gandhāśma gairikāśisa kāmksi tāla silañjanam |
kamkustham cetyuparasascastau pārada karmani ||*

1. Gandhaka (sulphur)
2. Gairika (Red oxide of Iron) (Ochre / Hematite)
3. Kasisa (Green Vitriol/Ferrous Sulphate)
4. Kankshi/Sphatika (Alum)
5. Haratala (Arsenic trisulphide/orpiment)
6. Manashila (Realgar/arsenic sulphide)
7. Anjana (Collyrium/antimony compounds)
8. Kankushtha (gum of Gambose tree)

Navaratnas or nine gems include pearl, topaz, emerald, ruby, sapphire and diamond.

*manayo pi ca vigneayah sutabandhanakarakah I | (ra.ra.sa.4/1)
dehasya dharaka nrnām jara vyādhivinasakāh |
jātau jātau yadutkrstam taddhi ratnam pracaksate | (raghuvamsa) dhannartino janāh sarve
Ramantesminativa yata |
ato ratnamiti proktam sabdasastravisaradai h ll (ayu pra 5/2)
kulisam kenapi no likhyate |*

A gemstone or gem, a piece of attractive mineral, when cut and polished, is used to make jewelry or other adornments. The gems are precious stones, having a special kind of shining. The Hindus believe that the ratnas mitigate the bad effects of Navagrahas (9planets).

The nine Ratnas mentioned are associated with the nine Grahas (planets). They are:

- Maanikya - Ruby - affects Sun.
- Mukta - Pearl - affects Chandra/ Moon.
- Pravala - Coral - affects Mangala/ Mars
- Tarkshya - Emerald - affects Budha/ Mercury
- Pushparaga - Topaz - affects Guru/ Jupiter
- Vajra - Diamond - affects Shukra/ Venus
- Neela / Indraneela - affects Sapphire - Shani/ Saturn
- Gomeda - Hessonite - affects Rahu/ Ascending lunar node
- Vaidoorya - Cat's eye - affects Ketu/ Descending lunar node

In Rasashastra, Suvarna (gold), Tamra (copper), Rajata (silver), Naga (Lead), Vanga (Tin), Yashad (Zinc), Loha (Iron) are the seven important Dhatus which are commonly used in Bhasma form for treatment. These were administered as a treatment modality in a specific Anupana (measure) indicated for various diseases distinctively.

A few alloys such as brass, bronze and panchalohas (combinations of five metals) are also included at times. Nagarjuna describes the conversion of zinc into brass (golden metal):

kramen kritwambudharen ranjitah karoti shulvam triputen kaanchanam

-(RASRATNAAKAR-3)

If one part of zinc is mixed with three parts of copper and heated, it changes into brass, which is a golden coloured mixture.

Visha are some minerals and herbs, substances of animal origin and undesired combinations of drugs. Visha refers to substances that, upon entry into the body, disrupt the healthy bodily elements or even cause harm to a person. Visha is classified into Jangamavish (animal-based poisons) and Sthavaravish (plant and mineral-based poisons). References to Visha can be found in Ayurvedic works like Charak Samhita, Sushrut Samhita, and Rasatarangini.

The concept of "Vishachikita" (treatment through poison) is elaborated in the Brahmavaivarta Purana. The distinctions between "Sthavara" and "Jangama" poisons are described in the Atharvaveda. The classification of poisons is there in the Kalpa Sthan of Sushruta. Vaagbhatt categorized poisons as "Sthavara," "Jangam," and "Garvisha". According to Rasatarangini, poisonous substances are classified based on their origin into two types: plant and mineral origin (Sthavara) and animal origin (Jangama). The field of Rasashastra literature categorizes "Visha" and "Upavisha" as types of poisonous substances.

Sthavaravisha is divided into ten types based on plant parts: kanda (root), Sara (exudate), niryasa (oleoresin), pushpa (flower), mula (root), phala (fruit), patra (leaf), twacha (skin), dugdha (milky exudates), and khanija (minerals). On the other hand, Jangamavisha encompasses poisons from animals, including snake venom, scorpion stings, rodent bites, dog bites, leech bites, and insect stings. Symptoms associated with this category often include dizziness, burning sensations, swelling, and diarrhea. Another classification is: Akritrimavisha (natural poison) and Krutrima Visha, represents poisons that don't fall into the plant or animal categories,

Vishas have to be purified through Shodhana procedure prior to their application in medical treatments. Procedures for poisonous substances before consumption

- Gomutra Nimajjana involves immersing substances in cow urine for a designated duration.
- Swedana is boiling items in different liquids, such as cow milk, goat milk, cow urine, vegetable extracts, and Kanjika.
- Bharjana refers to frying with or without clarified butter (ghee).
- Bhavana involves macerating and / or grinding with vegetable juices.
- Nihsnehana aims to reduce oily content.
- Kshalana is the act of cleansing with hot water.
- Nistvachikarana is the process of removing outer coverings.

Among the mentioned methods, cow urine and boiling with cow milk are the most prevalent techniques used for almost all 'Vishopavisha'. These harmful elements, once purified, could serve as therapeutic remedies known as Rasaushadhi. The unique qualities of these substances, such as their

subtle, light, and non-slimy attributes, allowed for rapid effects, easy absorption through narrow channels, and beneficial responses even in small doses.

Many minerals were known during the Vedic times. The table gives the names of them in both languages.

Names of some important minerals:

Sr. No.	Name of Specimen
1	Parada (Mercury)
2	Abhrak (Ferromagnesium)
3	Makshik (Chalkopyrite)
4	Vaikrant (Tourmaline)
5	Vimal (Iron pyrite)
6	Shilajeet (Black Bitumen)
7	Tuttha (Copper Sulphate)
8	Kharpar (Zinc Sulphate)
9	Gandhak (Sulphur)
10	Gairik (Hematite)
11	Sphatika (Alum)
12	Hartal (Orpiment)
13	Manashila (Realgar)
14	Neelanjana (PbS)
15	Kankushtha (Gamboge tree resin)
16	Kampilaka (Mallotus philippensis)
17	Navasadar (Ammonium chloride)
18	Mruddarshung (PbO)
19	Girisindur (HgO)
20	Hingula (Cinabar)

The Rasashastra text gives instructions related to the layout of a laboratory and various yantras for heating, steaming, distilling, and extracting substances. Thus, resulting in practical applications in metallurgy, gemmology and medicine.

Purification of Parada, other metallic and mineral substances by the method of shodhana and marana is dependent on Yantras classified as:

Based on shape- Damaru yantra, Kachapa-yantra.

Based on function- Svedana yantra, Jarana-yantra, Patana Yantra. Based on material- valuka yantra, Lavana-yantra, Bhasma yantra Based on the designer of Yantra - Vidyadhara yantra by Vidyadhar

Some examples of Yantras are:

Baluka Yantra, Palika Yantra, Damaru Yantra, Kachapa Yantra, Lavana Yantra, Dola Yantra, Khalwa Yantra, Patana Yantra, Darvik Yantra, Valuka Yantra, Bhudhara Yantra, Patala Yantra, Svedani Yantra, Jaran Yantra.

The method of destroying certain qualities of metal in order to make it worthy of use, has been described in various texts which was done in laboratories. Sulphur (Gandhak) was used to destroy all metals. Hence, in his book, 'Rasarnav', Govindacharya has compared sulphur to a lion and the other metals to an elephant:

*Naasti tallohamatango yanna gandhakakeshari
Nihanyadwandhamaatrena yadwa makshikakeshari*

(Rasarnava-7-138-142)

Govindacharya has described the sequence of the abilities of metals to fight rusting and corrosion from the least to the most. The same system is still followed:

*Suvarnam Rajatam Tamram Teekshnavangam Bhujangamah,
Lohakam Shadvidham Taccha Yathapurvam Tadakshayam* (Rasarnav-7-89-90)

This means that the sequence of the metals staying unaffected and undecayed by rusting or corrosion is gold, silver, copper, brass, lead and iron. Of these, gold rusts the least.

It also describes the process of forming Copper Sulphate from Copper:

Tamradaah jalairyoge jayate tutyakam shubham.

When copper is mixed with sulphuric acid, Copper Sulphate is formed.

When the harmful attributes of a metal are removed by chemical action and the metal is converted to ash, it is known as Bhasma. The ash of iron (lauh bhasma), gold (suvarna bhasma), silver (rajat bhasma), copper (tamra bhasma), tin (vanga bhasma) and lead (sees bhasma) are primarily used for medicinal purposes.

The hymn from Rasarnavakalpa of Rudrayamala Tantra taken from 'Rasaratnakara' of Nagarjuna with slight variation is:

*Kimatra Cimtyam Yadi Pitagamdhakam Palasa Nisthivita Kalko-Marditam Aranyakasyopala-
Pacitam Subham Karoti Tāram Triputena Kāncanam*

Meaning: What wonder is it that yellow sulphur, rubbed with the sediment (kalka, also means 'a kind of tenacious paste') from Butea frondosa (Palasa) and digested with wild lily, converts silver into gold when roasted thrice over the fire of cow-dung cake?

The first part, verses(1-55) of this book forms an introduction of the entire text and categorizes it into (i) dhatu-siddhi (perfect use of metals), ii) ratna-siddhi (perfect use of gems and other precious stones) and (iii) rasa-siddhi (perfect use of mercury and plant juices). The second part, verses (56-230) describes a variety of processes like roasting (dhamana, putapaka), heating (tapana), steaming (svedana), digestion (pacana), calcination (jarana) and blending (sarana) of mercury with vegetable products and mineral substances. The third part is subdivided into a number of sections, describing the properties of mineral substances, plants and the character of soils of different regions for alchemical purposes. The names of subdivisions, based on the properties of mineral substances, are as follows:

1. Gandhikakalpa (properties of sulphur)
2. Talakakalpa (properties of orpiment)

VAAGBHATT's Rasaratnasamucchaya describes:

"Leaves of teekshnaloha (cast iron, steel) are repeatedly to be heated and plunged into water and then to be powdered in a stone mortar with an iron pestle. The powder of iron thus obtained is to be roasted 20 times in a covered crucible in combination with mercury and sulphur, and after each roasting the powder of iron is to be pounded as directed above – iron thus reduced to ashes is to be used in medicine." (Rasaratnasamucchaya) "Bell-metal is obtained by melting 8 parts of copper and 2 parts of tin together." (Rasaratnasamucchaya)

A whole chapter of RasaRatna Samuchchay is dedicated to purification of juices.

RAMCHANDRA mentioned in the text of Rasendra Chintamani:

Svarna(gold) is considered as energizer of life and booster of health

Rajat(silver) is helpful in curing the disease like Leprosy, Hair-fall, Wrinkles and lack of energy.

Mercurial preparations were supposed to bestow long life and youthful vigour.

CHARAK gave nine ways of distillation:

1. Dhanyasava—made from grains and seeds
2. Phalasava—made from fruits
3. Moolasava—made from roots
4. Saraasava—made from wood
5. Pushpaasava—made from flowers
6. Patraasava—made from leaves
7. Kaandaasava—made from stems and stacks
8. Twagaasava—made from barks
9. Sharkaraasava—made from sugar

Using them, medicines, perfumes, itr and other fragrant products were developed.

Among the various metal-based drugs which utilize Parad (Mercury), the red sulfide of mercury which is known in ancient Bharatiya literature as Rasasindur, is used extensively in various ailments and diseases.

*Hatohanti Jaravyadhir Murchito Vyadhivaatkeh,
Baddah Khechratam Dhatee Ko Anyam Sootaatkripakarah*

It means that the processed mercury (Bhasma) eliminates all sorrows of elderly and diseases of body and mind.

The bonding of mercury with certain herbs and sulphur provides khechari – gati (able to fly). There isn't any material as kind in the universe as mercury.

*Sametu Gandhake Jeerne Samanyadnaashnah,
Dwigune Tu Visheshena Maharog Vidhunnah.
Trigune Tu Vishesheshenakshyapunsatva Prakashanah, Chaturgune
Mahoutsahamedhasmiritivivardhnah.*

*Tatha Panchgunasheshgadsantapnashnah,
Raseshwarah Shadgune To Vividhaadbhutkaryakrit.*

The mercury that has absorbed an equal amount of Sulphur will treat all general types of diseases. The Mercury that has absorbed two times its amount of Sulphur in it could eliminate major disorders. When sulphur is absorbed thrice by the mercury, then that will have special properties of enhancing fertility and reversal of aging process.

The four times processed mercury with Sulphur will increase energy, enthusiasm, intelligence and memory.

The five times Sulphur-absorbed mercury can treat remaining disorder and the mercury that has absorbed six times Sulphur, will do many wonders.

The processes followed to improve the quality of Parada (Mercury) is known as Samskara. There are three main purposes of Samskara -

- Beeja Dosha Nivrutti - Removal of intrinsic defect
- Guna Vruddhi - Improve quality
- Angapoorti - making it a complete medicine.

While a specific Rasa has capability to treat a particular disease, Rasayana prepared with Rasa, which has gone through different processes, has the capacity to relieve the disease as well as all the other complications related to the disease. In Rasashastra, Parada has been described as Rasa.

Eighteen samskaras of Parada are done to remove impurities and prepare it for medicinal use as these steps enhance its therapeutic properties and minimize potential toxicity:

*Svedanamardanamürcchotthapanapatananirodhaniyamasca |
Dipanam Gaganagrasap ramanamatha Cārana Vidhānam Ca |
Garbhadrutibahyadrutijaranarasaragasaranam Caiva |
krāmana vedho bhaksanam mastadasadheti rasakarma || (ra hr ta 2\12)*

Meaning: 1. Swedana 2. Mardana 3. Murchana 4. Utthapana 5. Patana 6. Rodhana 7. Niyamana 8. Deepana 9. Graasamana 10. Chaarana 11. Garbhadruti 12. Bahyadruti 13. Jarana 14. Ranjana 15. Sarana 16. Kramana 17. Vedha 18. Bhakshana.

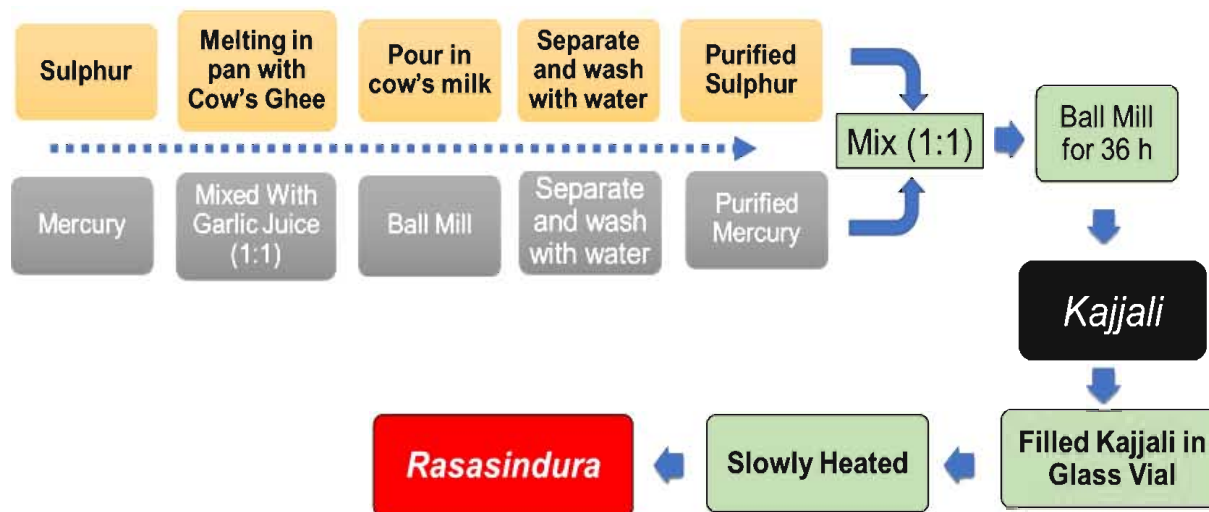
The first 8 are called as Ashta Samskaras of Parada. For making Rasayana, the parada which has undergone these 8 Samskaras should be used. They are considered useful to make mercury eligible for adding into medicines and for internal administration, which is called dehavada. The remaining ten are aimed at alchemical and body- transmutation processes, which is called lohavada.

Mercury cannot be consumed in its natural form and also it is very difficult to convert mercury into powder form in atmospheric conditions. Therefore, kajjali forms the basic component in maximum herbo-mineral (rasaushadi) formulations and it provides a structural and functional stability to a variety of medicinal preparations.

Kajjali is preparation of purified mercury and sulphur used as a base for over 90% of herbo- mineral formulations in Ayurveda and is used as a rejuvenator. It acts as a catalyst. It is a black powder or paste

made by triturating different proportions of Mercury(Hg) and Sulphur(S) which can be either samaguna (Hg:S = 1:1) or shadaguna(Hg:S = 1:6).

Cinnabar ore was a well-known mineral to extract Mercury. An Ayurvedic practitioner uses a specialized technique called "Kupipakva" to use Mercury as medicine called Rasasindur, during which Kajjali is an intermediate part. It is used to treat high fever, jaundice, sexual diseases, immune and nervous system related diseases.



Savrikar S. S., Afr J Tradit Complement Altern Med-2011

Kupipakwa method – In this method, the ingredients of mineral origin are mixed together to form fine powder. In this process, a kupi (glass flask) is used which is filled one third with mixture of minerals. This glass flask is covered with a cloth coated with clay paste seven times and let dry. Now the kupi is immersed in balukayantra (the earthen pot filled with sand, at the center of which the Kupi is immersed for heating) up to neck and start the process of heating. The heat is provided in three stages – the mild, mid and high flame. Then the mouth of the flask is sealed using chalk pieces coated with jaggery or clay. When it cools down the flask is broken in the middle and the material is collected that is present in the neck.

Kajjali and Rasasindur are incorporated into various Ayurvedic dosage forms like vati(tablets), churna(powders), lepa(pastes), or taila(oils).

DHANURVED

युद्धशस्त्रास्त्रकु शलो रचनाकु शलो भवेत्। यजुर्वेदोपवेदोऽयं धनुर्वेदस्तु येन सः॥३७

Studying which a person becomes excellent in war, weapons and army formations is known as the Upaved of Yajurveda, named as Dhanurved.

Vedas were divided into 4 parts by Vyasa: Rig, Sama, Yajur, and Atharva. Each Veda has 4 parts: Samhita (mantras) Brahmana (ritual) Aranyaka (mix of ritual and philosophy) Upanishad (philosophy) So, a collection of these 4 types is called a Sakha or recension.

The Vedas were thus divided into 1180 such shakhas (branches) and given to different families. They were supposed to be passed on to the future generations based on their gotras:

Rigved had 21 shakhas

Yajurved had 109 (Shukla-15, Krishna-94)

Samaved had 1000 shakhas

Atharvaved had 50 shakhas

It was a must for a Brahmin to know at-least one Shakha (the one assigned to his gotra), but one could learn as much as one wanted to and was capable of learning. Then, there were Upavedas: Ayurveda (medicine) Dhanurveda (warfare) Artha Sastra (wealth) Gandharva Veda (music).

Many texts like Shiv Dhanurved, Vaashishth Dhanurved; Smriti texts like NitiPrakashika, ManuSmriti, AtriSmriti, ShukrNiti, ChanakyaNiti; Puranas such as Agni Puran, Vishnudharmottara Puran and other later encyclopediac works- Manasollas, Yuktikalptaru, Akash-Bhairava Tantr, include important chapters on Dhanurved.

The term "Dhanu" (Bow) in "Dhanurved" does not imply archery but is a representation of all Shastrs (weapons) encompassing Khadg (swords), Gada (mace), Shul (spear, Shakti, Vel, Simh), Shataghni (cannons), Bhushundi (guns), and all other armaments elucidated in the definitions within Niti-shastra (Vash.Dhanur. 2.3). The term "Ved" translates to knowledge. Consequently, the meaning of Dhanurved is the comprehensive knowledge of an array of weapons, warfare strategies, and combat methods.

Dhanurved is the systematic and comprehensive study of the five arts and includes different fitness regimes, training schedule, nutrition, medicines & pranayam:

1. Weapon Mastery and Release in Various Asan:- This art encompasses the adept wielding and striking with weapons in different stances, styles, grips, and postures.
2. Niyuddha (Bare-Hand Combat)- This involves expertise in various facets of Mallayuddha, which includes knowledge of different categories such as striking at Marma points, grappling, pulling techniques, and Bahuyuddha, where combatants engage in punching or Mushthi-yuddha (referred to as boxing).
3. Astravidya and Yantravidya- Proficiency in aiming and hurling weapons through the use of Yantras and throwing Astras (projectiles).
4. Military Formations- Mastery in different styles of organizing armies and formations.

5. Management of Chaturangini Sena- Expertise in building and organizing the armies of elephants, horses, and chariots, known as Chaturangini Sena.

Knowledge of Asanas, Mudras, chariot driving, and the training of horses and elephants are integral components Dhanurved and Niti-shastras manuals.

Niyuddha kala or martial art skills, including hand-to-hand combat, the stances, bare-hand combat, involving diverse styles of striking, blocking, and counter-attacking, weapon wielding and fitness exercises as described in many available treatises on Dhanurved, reflect perfectly on the current martial arts and fitness regimes.

A statue of a spear thrower was discovered at an Indus Valley location. Also, two men are depicted spearing towards one another on an Indus valley civilization seal.

The Mahabharata recounts combat between Arjuna and Karna employing bows, swords, trees, boulders, and fists. It also describes soldiers using only daggers and defeating animals.

The Sangam literature contains written evidence of martial arts in Southern Bharat. The use of spears, swords, shields, bows, and Silambam throughout the Sangam era is described in the Akananuru and Purananuru.

Various texts describe the martial arts of ancient Bharat. Shastravidya (art of weapons), Dhanurvedya (archery), Kharadvidya (sword wielding), Ashwarohan (fighting riding a horse), Gajarohan (fighting riding an elephant) were practiced.

Bharat always fought a just war - 'Dharm Yudha'. It means, the king fought a war only when it was required for the welfare of the kingdom. Similarly, the warrior or soldier had a code of conduct. Being disciplined was the first code. Some of the warrior codes or laws that were followed by ancient armies in Bharat were:-

1. A warrior (Kshatriya) in armour must not fight with the one who is not wearing armour.
2. A soldier will not fight an opponent who is unarmed (without weapons).
3. One should fight only one enemy and cease fighting if the opponent is disabled.
4. Aged men, women and children, the retreating, or the one who holds a straw in his lips as a sign of unconditional surrender should not be killed.

In Ramayan Kaal, this shlok tells that every man and woman was well versed in Ved, Niti and all the Kalas including Dhanurved.

गदे द्वे चैव काकु तस्थ मोदकीं शिखरी शुभे॥७

-Valmiki Ramayana - Balkand- २७

Vishwamitra giving Modki & Shikhri Gada to Ram: among other Shastr & Astr.

In Mahabharat: there is mention of various Akharas (place for combat fighting) such as Jarasandh Akhara. Shri Krishna and Balram were the epitome of warriors be it Malla-Yuddha (combat) with Chanur, use of Shastra & Astra or Raj- Dharma. The whole of Gita can be seen as the fundamental essence that forms the basis of Niti- Shastra.

अचरद्भीमसेनस्तु मागान्बहुविधांस्तथा। मण्डलां विचित्राणि गतप्रत्यागतां च॥ १७

- महाभारतः शल्यपर्वः, गदापर्व – ५८ (on different gada rotations)

In Mahabharat, we can see many women such as Draupadi and Kunti showing their prowess in Niti-shastra, debates. Satyabhama, Chitrangada, Ulupi, Maurvi, Hidimb aetc. are seen participating in combats, wars and being actively involved in the ruling of their Kingdoms.

Malla-yuddha, also known as battle-wrestling, is the earliest known structured unarmed combat in the Bharatiya subcontinent and Kalaripayattu is considered the earliest form of Martial art, taught by Shri Krishna and later Agastya Muni to their disciples.

AYURVEDA

Ayurvedic literature of medicinal plants had the period of documentation which can be categorized into four distinct phases: the Vedic period, the Samhita period, the Medieval period (eighth – fifteenth century) and the Modern period (sixteenth century onwards). The medicinal plants find a place in three of the four Vedas . Rigveda mentions 67 medicinal plants while Yajurveda and Atharvaveda mentions 82 and 288 medicinal plants, respectively. Medicinal plants also find a place in the Upanishads, where about 31 plants are recorded.

Samhitas are the next source of information on medicinal plants. Among them Charaka Samhita and Sushruta Samhita are the first to describe different types of plants and their medicinal uses. Charaka Samhita gives exhaustive descriptions on 620 plants while Sushruta Samhita describes 775 plants. The texts include detailed information on various aspects of medicinal plants like therapeutic uses, classifications, pharmacology, pharmacy, time and methods of collection, incompatibility, medical recipes, parts used etc. The other Samhitas of the period are, Ashtanga Samgraha and Ashtanga Hrudaya.

Ashtanga Samgraha has 755 medicinal plants.

Other Samhitas written are Harita Samhita, Bhela Samhita, Kashyapa Samhita, Sharangadhara Samhita and Bhavaprakasha Samhita

Later, Vyakhyas and Nighantus ere written. Vyakhyas are critical commentaries written on the Samhitas. Elaboration on identity and usage of medicinal plants, mentioned in the Samhitas form an important part of Vyakhyas. Nighantus are glossaries written based on medicinal plants mentioned in Samhitas. There are 16 important Nighantus written, among whom the last is Saligram Nighantu with 4200 plant references.

The Nighantu period signifies a golden era in Ayurvedic Materia Medica, marked by the creation of essential lexicons and the incorporation of new drugs, enhancing the detailed descriptions of plants and their medicinal applications.

Folk healers use around 6400 species while the entire Ayurvedic literature documents only about 1550 species. Knowledge of folk traditions is limited by identification of medicinal plants by local names and their limited medicinal uses.

ASHVINI KUMARAS

The twin Gods of Ayurveda Ashvini Kumaras (अश्विनी कुमारौ) are known as ideal physicians in Ayurveda. They learned the knowledge of Madhuvidya and Pravargyavidya from Atharvan Dadhichi. A few examples of Ayurvedic management protocols from Ashvini Kumaras which are mentioned in Rig Veda include the treatment of Varma Rishi from madatyaya (मदात्ययः | Alcoholism). They successfully treated Chyavana Rishi (च्यवनऋषि) from Senility (R.7.71.5). The popular concoction, Chyavanprasha (च्यवनप्राशः) is said to be the boon of Ashvini kumaras to mankind which was designed originally for Rishi Chyavana (According to some historians) and hence named after him. In Rigveda (RV 1.176.15), Ashvini Kumaras did the iron leg replacement during the war, indicating the surgical knowledge and its application.

According to Rigveda, Rudra (रुद्रः), Agni (अग्निः), Maruta (मरुत्), and Varuna (वरुणः) who are considered deities are mentioned as Bhishaks or physicians.

Vajikarana (वाजीकरणम्) which is a blooming branch of Ayurveda now, has its references in Rigveda in the context of the treatment of certain diseases from its root. (R.10.97.110)

The documentation of medicinal plants finds its place in Rigveda in Aushadhi Sukta (औषधीसूक्तम्). In Rigveda, there are references of Indra (इन्द्रः | the king of God) as he treated Charmoroga (चर्मरोगः | skin disorder), Khalitya (खालित्यम् | hair fall), andhatva (अन्धत्वम् | blindness), and many more diseases. Thus, he is referred to as a physician as well.

DHANVANTARI

Dhanvantari, the practitioner of the art of healing is known as the God of Medicine. God Dhanvantari passed the knowledge to his follower Divodasa, who then instructed Sushruta. The surgical operations performed during Vedic periods were completely done under aseptic conditions where the wounds were washed and made germ free using warm water and antimicrobial herbal pastes. This shows that the concept of sterilization or disinfection existed during that period. The 'havan kundas' were the integral part of the hospitals which were used to produce fumes, beneficial in disposing off the nosocomial infections.

Ayurveda claims that about 22 types of diseases were effectively controlled by Agni Hotra with curative and preventive power.

The theory of antimicrobial action of the Agnihotra- fire ritual has been scientifically reported by Nautiyal et al. The study reported over 94% reduction in aerial bacterial population and absence of pathogens with 60 min of Yajna. The cleanliness of the environment in the room was maintained up to 24 h in the closed room. A recent study by Singh and Singh, has demonstrated the role of chanting mantras during agnihotra resulting in higher antimicrobial activity of the smoke, suggesting that

chanting of mantras generated electric charge which had changed the properties of phyto-medicines present in Yagya smoke enhancing antimicrobial properties.

Precious stones or gems were also used therapeutically in certain diseases. There are certain references where aushadhi (औषधी | medicinal herbs) are worn as ornaments for the management of diseases.

According to Ayurveda, the entire universe is composed of five elements: Vayu (Air), Jala (Water), Aakash (Space or ether), Prithvi (Earth) and Teja (Fire). These five elements called Pancha Mahabhoota, are believed to form the three basic doshas of human body in varying combinations. The three humors; Vata dosha, Pitta dosha and Kapha dosha are collectively called as “Tridoshas”. In Ayurveda it is believed that a perfect balance between the nature elements and the Tridoshas of the human body should be maintained for a healthy state of living by following the principles of divine wisdom. The catabolism of the body is believed to be governed by Vata, metabolism by Pitta and anabolism by Kapha. Pitta dosha regulates the body temperature, optic nerve coordination and hunger and thirst management. Heat conditions of the body aggravates Pitta. Kapha dosha is increased due to sweet and fatty food though healthy fat provides lubrication to the joints for proper functioning.

The human body consists of Saptadhatu (seven tissues); Rasa (tissue fluids), Meda (fat and connective tissue), Rakta (blood), Asthi (bones), Majja (marrow), Mamsa (muscle) & Shukra (semen) and 3 Mals (waste products) of the body; Purisha (faeces), Mutra (urine) and Sweda (sweat). Vata dosha maintains cellular transport, electrolyte balance, elimination of waste products and its effect is increased by dryness. These seven tissues work in coordination with each for proper physiological functioning of the human body.

The biological fire of the body for all the metabolic functions is called as “Agni”. There are thirteen categories of Agni in a human body and the most important is the one responsible for digestive fire, called Jatharagni, which has a close relation with Pitta and ultimately Vata of the body.

Ayurveda also implies that each individual has his unique constitution called prakriti, which determines the characteristic response of each individual to medications, environmental conditions and dietary factors.

Rotti et al, have published several studies correlating the concept of prakriti in Ayurveda to present-day science.

Ayurveda has eight ways to diagnose illness: nadi (pulse), mootra(urine), mala (stool), jihva (tongue), shabda (speech), sparsha (touch), druk (vision), and aakruti(appearance).

Ayurveda therapies are varied and include herbal medicines, special diets, meditation, yoga, massage, laxatives, enemas, and medical oils. Ayurvedic preparations are typically based on complex herbal compounds, minerals, and metal substances (rasashastra).

Ancient ayurveda texts like Sushrut Samhita also taught surgical techniques, including rhinoplasty, lithotomy, sutures, cataract surgery, and the extraction of foreign objects.

TREATMENT

Pancha karma therapy applies various processes for the rejuvenation of the body, cleansing and enhancing longevity which comprises five karma (actions) that are used for removal of toxins from the body tissues. They are the Virechan (purgation through use of powders, pastes or decoction), Vaman (forced therapeutic emesis by use of some medicines), Basti (use of enemas prepared from medicated oils), Rakta moksha (detoxification of blood) and Nasya (administration of medicines like decoctions, oils and fumes through nasal route).

Also, Ayurveda has eight disciplines called as “Āshtanga Ayurveda”. They are Kayachikitsa (internal medicine treatment), Bhootavidya (treatment of psychological disorders), Kaumar Bhritya (pediatric treatment), Rasayana (study of geriatrics), Vajikarana (treatment through aphrodisiacs and eugenics), Shalya (surgical treatment), Shalakya (otorhinolaryngological and ophthalmological treatment), Agada Tantra (toxicological studies).

Triphala, a herbal formulation of three fruits, Amalaki, Bibhitaki, and Haritaki, is one of the most commonly used Ayurvedic remedies. The herbs Withania somnifera (Ashwagandha) and Ocimum tenuiflorum (Tulsi) are also routinely used in ayurveda.

The sedative and pain-relieving properties of opium are found in the ancient ayurvedic texts and is first mentioned in the Sarngadhara Samhita.

Bhang (Cannabis indica) is also mentioned in the ancient ayurveda books like the Sarngadhara Samhita as a treatment for diarrhea.

Uses of alcoholic beverages called Madya was prescribed in a particular dosage, to adjust the doshas by increasing pitta and reducing vatta and kapha. Madya are classified by the raw material and fermentation process, and the categories include sugar-based, fruit-based, cereal-based, cereal-based with herbs, fermented with vinegar, and tonic wines.

Massage with oil is commonly prescribed by ayurvedic practitioners. Oils are used in a number of ways, including regular consumption, anointing, smearing, head massage, application to affected areas, oil pulling & shirodhara (on the forehead).

Yoga originated in Bharat in ancient times. Through its therapies and diagnosis based on pulse and analysis of Tridosha state of an individual, it suggests meditative exercises and lifestyle management to obtain tranquility and improve health. The Asanas (postures) of Yoga are applied in various clinical and nonclinical conditions for curing various physical and emotional conditions.

- The Bṛhat-Trayī, literally translated as "The Great Triad (Of Compositions)", refers to three early Sanskrit encyclopaedias of medicine: Trayī:
- Charaka Samhita (चरकसंहिता) was composed by Agnivesha (अग्निवेश) and later edited by Charaka (चरक).
- Sushruta Samhita (सुश्रुतसंहिता) was composed by Sushruta (सुश्रुत).

- Ashtanga Hridayam Samhita (अष्टाङ्गहृदयसंहिता) was composed by Vagbhata(वाग्भट) (fl. ca. AD 610, in Sindh). A work called Aṣṭāṅgasamgraha (अष्टाङ्गसंग्रह) is also ascribed to the last author, Vāgbhaṭa वाग्भट.

CHARAK SAMHITA

Charak (the first physician) presented the concept of digestion, metabolism and immunity and discussed physiology, etiology and embryology in Charak Samhita. He described illness as a result of imbalance among the three dosha namely, bile, phlegm and wind. It is one of the three works that constitute the Brihat Trayi.

The Charaka Samhita states that the content of the book was first taught by Atreya, and then subsequently codified by Agniveśa (described to be the chief pupil of Punarvasu Atreya). His Agniveśatantra, consisting of 12,000 verses, was the foundational text of the Agnivesha school, one of the six schools of early Ayurveda (others being Parashara, Harita, Bhela, Jatukarna, and Ksharpani). This tantra was compiled, edited and modified by Charaka (*agniveśakṛte tantrē carakapratisamskṛte*).

Charaka Samhita describes all aspects of Ayurvedic medicine and Sushruta Samhita describes the Science of Surgery. Both these legendary compilations are still used by practitioners of traditional medicine. These ancient texts are available in various translations and languages like Tibetan, Greek, Chinese, Arabic and Persian.

Charak Samhita describes the causes of diseases, their diagnosis, treatments, and necessary medicines for controlling them. It also includes sections on the importance of diet, hygiene, prevention, and medical education, the teamwork of physicians, nurses, and patients which are necessary for recovery of health. Rishi Charak has also classified microorganisms in his Charak Samhita as internal and external microorganisms. These microorganisms were further subdivided on the basis of their place of origin such as dirt, phlegm, blood or stool. The literature describes the etiologies, signs and symptoms of different diseases. The knowledge about communicable diseases (Sankramak roga) which are due to microbial invasions has been reported in these Samhitas.

Samhita contains 120 chapters in eight books:

1. Sutra Sthana (General principles) - 30 chapters deal with philosophy, definitions, prevention through healthy living, and the goals of the text. It is divided into quadruplets of 7 and 2 concluding chapters.
2. Nidana Sthana (Pathology) - 8 chapters on causes of diseases.
3. Vimana Sthana (Specific determination)- 8 chapters describing the training of a physician, ethics of medical practice, pathology, diet & nourishment and taste of medicines.
4. Śarira Sthana (Anatomy) - 8 chapters describe embryology & anatomy of a human body (with a section on other living beings).
5. Indriya Sthana (Sensory organ-based prognosis) - 12 chapters on diagnosis & prognosis, mostly based on sensory response of the patient.
6. Cikitsa Sthana (Therapeutics) - 30 chapters dealing with medicines and treatment of diseases.

7. Kalpa Sthana (Pharmaceutics and toxicology) - 12 chapters describing pharmacy, the preparation and dosage of medicine, signs of their abuse, and dealing with poisons.
8. Siddhi Sthana (Success in treatment) - 12 chapters describing signs of cure, hygiene and healthier living.

It mentions that there are four important parts of medical practice – the patient, the physician, the nurse and the medicines, thus prescribing an ethical charter for medical practitioners as Charaka's approach to medicine was holistic.

SUSHRUT SAMHITA

Acharya Suśruta is considered as the father of Surgery. Every scholar of Ayurvedic medicine needs to study this compendium along with Carakasamhitā to attain comprehensive knowledge in Ayurvedic medical science

The Susruta-samhita, in its extant form contains 184 chapters descriptions of 1,120 illnesses, 700 medicinal plants, 64 preparations from mineral sources and 57 preparations based on animal sources.

Entire saṁhitā can be divided into two parts, the original tantra is pūrvārdha having five sections and the latter half uttarardha was added later. Those two parts together encompass details on specialties like Śalyatantra (Surgery), Śālākya (ENT & Ophthalmology), Kāyacikitsā (General medicine), Kaumārābhrtya (Pediatrics), Rasāyanatantra (Rejuvenators), Agadatantra (Toxicology), Vājīkaraṇa (Aphrodisiacs). It also dealt in a great detail about the fundamental concepts of medicine such as Anatomy, Physiology (Śārīrasthāna), Pathology (Rōganidāna) to attain proficiency of medicine.

The sūtrasthāna, nidānasthāna, śārīrasthāna, kalpasthāna and cikitsāsthāna are the five sections of the pūrvatantra containing 120 chapters. The uttaratantra, sixth section of Suśrutasaṁhitā, added later on, contains 66 chapters.

Among the commentaries available for Sushrut Samhita, Nibandhasaṅgraha commentary available for entire saṁhitā, is popular and most useful one. The reason being presentation of explanations in simple and expressive language.

Saṁhitā begins with first section i.e., sūtrasthāna, containing 46 chapters. First chapter of it gives symbolic description of the beginning of medical teaching, followed by śiṣyōpanayanīya, consisting of suggestions about how a medical student should be selected, initiated, and take the oath for Adhyayana. In the first section itself, the division of eight branches of Āyurvēda is given and it also deals with the basic doctrines, seasonal regimen, surgical instruments, para surgical measures, diet and drugs etc.

The second section, nidānasthāna has 16 chapters dealing with the etiology, pathogenesis, signs and symptoms of diseases and important surgical diseases.

The third section, śārīrasthāna contains 10 chapters, describing fundamental concepts of embryology, anatomy and physiology of human body. This also includes the essentials of obstetrics.

The fourth section, cikitsāsthāna has 40 chapters and deals with the principles of management of surgical as well as general diseases, obstetrical emergencies. It also includes a few chapters on

rejuvenation and aphrodisiacs. Under the surgical management of some diseases, to produce insensibility to the pain of the operation and as an anesthetic it is advised to use wine before operation. This was the contribution of Suśrutasamhitā to the field of anesthesia. This section also deals with the pañcakarma therapies.

The kalpasthāna, fifth section, containing 08 chapters, describes mainly viṣatantra (Toxicology), along with the nature of poisons and their management. It also deals with food poisoning, vegetable poisons, animal poisoning like snake, dog, scorpion, spider, rat etc and their management.

The uttaratantra, sixth section of Suśrutasamhitā, deals with the details of specialties like śālākya (26 chapters), kaumārabhrtya (12 chapters), kāyacikitsā (21 chapters) bhūtavidyā (3 chapters), and tantrayukti etc (04 chapters). The greater portion of it is dedicated to śalyatantra. It gives a list of blunt and sharp instruments to facilitate the surgical procedures while hand is considered as the most important and the best instrument. Classification and description of these instruments became the basis for the development of instruments of modern surgery.

The text discusses surgical techniques of making incisions, probing, extraction of foreign bodies, alkali and thermal cauterization, tooth extraction, excisions, and trocars for draining abscess, draining hydrocele and ascitic fluid, removal of the prostate gland, urethral stricture dilatation, vesicolithotomy, hernia surgery, caesarian section, management of haemorrhoids, fistulae, laparotomy and management of intestinal obstruction, perforated intestines and accidental perforation of the abdomen with protrusion of omentum and the principles of fracture management; traction, manipulation, apposition including fitting of a prosthetic.

It enumerates six types of dislocations, twelve varieties of fractures, and classification of the bones and their reaction to the injuries and gives a classification of eye diseases including cataract surgery.

His meticulous method involved submerging bodies in flowing water to aid decomposition and then examining them layer by layer. Sushruta specified the use of only bodies free from disease, not older than 100 years, and not poisoned. After seven nights of decomposition, the body was carefully cleaned and dissected.

His teaching methods included using clay, wax, and ghee to simulate human tissues, enabling students to practice surgical techniques in a controlled setting before performing them on real patients.

Rhinoplasty or nose reconstruction is one of the surgeries elucidated in the text. The nose is reconstructed by using the flap of skin cut from the patient's cheek. This principle is exactly what present day plastic surgeons name as pedicle grafting. Hence, Sushruta is known as the father of plastic surgery.

While describing the method of Rhinoplasty (Nasikāsandhāna) Sushruta says:

The portion of the nose to be covered should be first measured with a leaf. Then a piece of skin of the required size should be dissected from the living skin of the cheek, and turned back to cover the nose, keeping a small pedicle attached to the cheek. The part of the nose to which the skin is to be attached should be made raw by cutting the nasal stump with a knife. The physician then should place the skin

on the nose and stitch the two parts swiftly, keeping the skin properly elevated by inserting two tubes of eranda (the castor-oil plant) in the position of the nostrils, so that the new nose gets proper shape. The skin thus properly adjusted should then be sprinkled with a powder of liquorice, red sandal-wood and barberry plant. Finally, it should be covered with cotton, and clean sesame oil should be constantly applied. When the skin has united and granulated, if the nose is too short or too long, the middle of the flap should be divided and an endeavour made to enlarge or shorten it.

Sushruta describes eight types of different surgical acts that includes all the present days diagnostics and therapeutic procedures in any of these eight acts. This indicates that Sushurta was well versed with all the surgical prodeures and as he had performed them, he was able to include all these details.

1. Chedana (Incising)
2. Bhedya (Excising)
3. Lekhya (Scraping)
4. Vyadana (Puncturing)
5. Eshana (Probing)
6. Ahasrana (Extracting)
7. Visravaya (draining Secreting fluids)
8. Seevya (Sututring)

All the 121 instruments were classified into two, Yantra (Blunt instruments)-101 and Shastra (sharp instruments)-20.

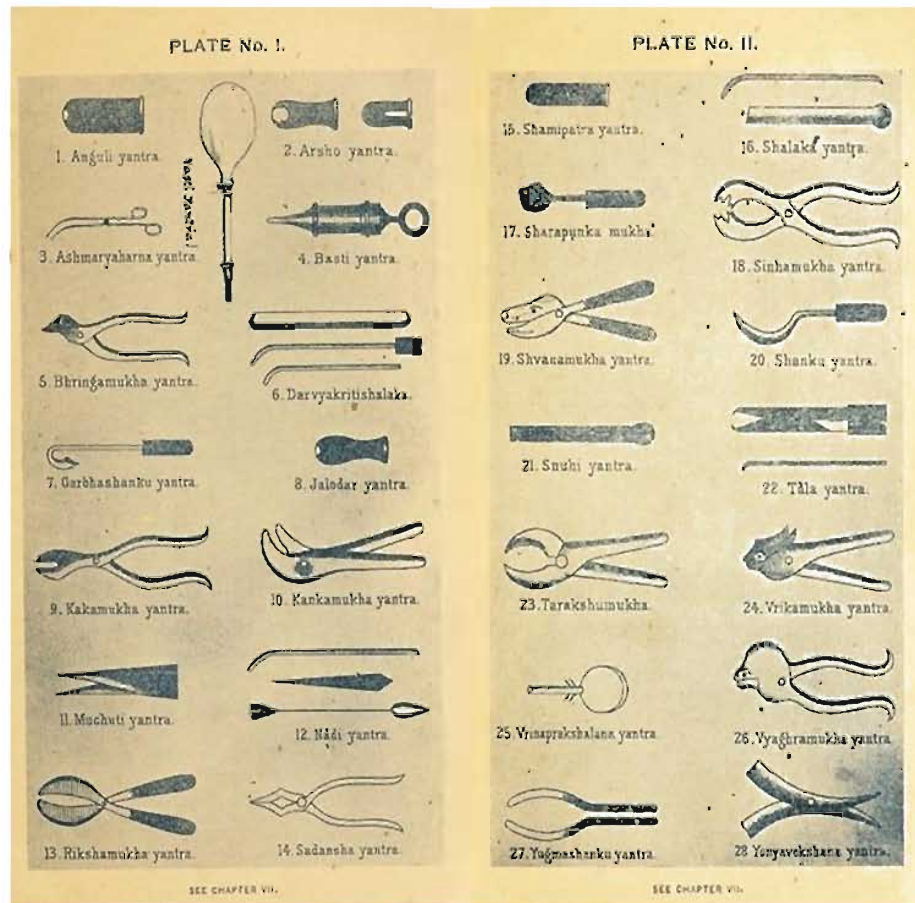
Sushruta provided detailed descriptions of each instrument, highlighting their usage and design. Yantras were again classified into 6 types based on shape and their utility:

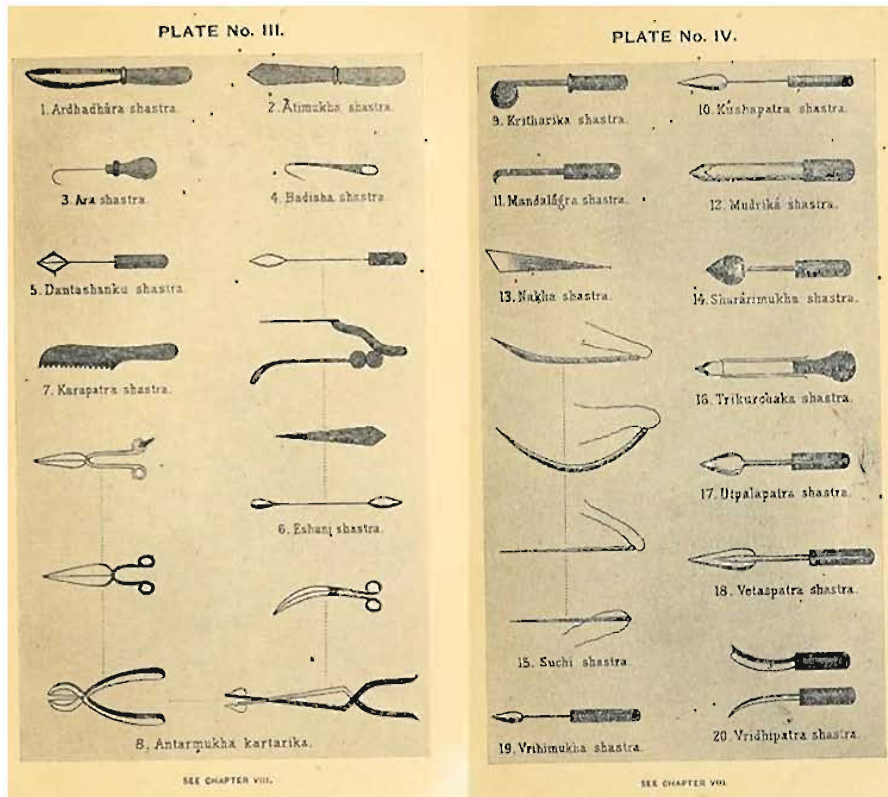
Type of instrument	Meaning	Numbers
Svastika,	Cruciform instrument	24
Sandansha,	Dissecting forceps or tongs	2
Tala,	Spoon shaped instruments	2
Nadi Yantras	Tubular instruments	20
Shalakas	Rod like instruments	28
Upayantras	Accessory instruments	25

Shastrs are:

1. Mandalagra shastr (Circular knife)
2. Karapatra (Bone saw)
3. Vrddhipatra (Scalpel)
4. Nakhashastr (Nail parer)
5. Mudrika (Ring knife)
6. Utpalapatra (Lancet)
7. Ardhadhara (Single-edged knife)
8. Suci shastr (Suturing need

9. Kusapatra (Bistoury)
10. Atimukha (Hawk bill scissors)
11. Sararimukha (Scissors)
12. Amtaramukha (Curved bistoury)
13. Trikurcaka (Three-edged knife)
14. Kutharika (Chisel)
15. Vrihimukha (Trocar)
16. Ara (Awl)
17. Vetasapatraka (Scalpel of different types)
18. Badisa (Sharp hook)
19. Dantasanku (Tooth scaler)
20. Esani sastra (Sharp probe)





Courtesy: from An English Translation of the Sushruta Samhita, by Kaviraj Kunja Lal Bhishagratna

These instruments were made of iron which might be substituted with any other similar or suitable substance, where iron wasn't available. The detailed description of different types of instruments, and their making, pre-operative preparations, sterilisation of operation theatre and post-operative ward etc. clearly indicate wide ethical surgical practice in Sushruta's time. These are equally relevant in the present times also.

Beeja Chatushtaya or Chikitsa Chatustaya, an important unique methodology explained by Acharya Sushruta, is the fundamental principle that establishes the foundation for the Sushruta Samhita. Beeja Chatushtaya includes Purusha (individual person), Vyadhi (diseases), Aushadha (medicine) and Kriyakaal (time of administration of treatment). Purusha is believed to be the combination of Panchamahabhuta and Atma. Karma Purusha provides Adhishtana and Ashraya for Vyadhi and Chikitsa. Every type of problem- Shareerika (inside body), Manasika (mental), and Agantuja (external) Vedana are included in the Roga, Dukkha, or Vedana.

The book was translated into Arabic in 8th century CE as Kitab-ul-Susrud. A statue of Maharshi Sushruta, considered the "Father of Surgery," is located at the Royal Australian College of Surgeons (RACS) in Melbourne, Australia.

VAGBHATTA'S ASHTĀNGAHRIDAYASAMHITĀ

Vāgbhaṭa (वाग्भट) was one of the most influential writers of Ayurveda. Several works are associated with his name as author, principally the Ashtāṅgasāṅgraha(अष्टाङ्गसंग्रह) and the Ashtāṅgahridayasamhitā (अष्टाङ्गहृदयसंहिता). Vāgbhaṭa was a disciple of Charaka. Both of his books were originally written in Sanskrit with around 7000 sutras. Ashtanga in Sanskrit means 'eight components' and refers to the eight sections of Ayurveda: internal medicine, surgery, gynaecology & paediatrics, rejuvenation therapy, aphrodisiac therapy, toxicology, psychiatry or spiritual healing, and ENT (ear, nose and throat).

It gives detailed descriptions on longevity, personal hygiene, the causes of illness, the influence of season and time on the human body, the significance of the sense of taste, pregnancy and possible complications during birth, Prakriti, individual constitutions and various aids for establishing a prognosis. There is also detailed information on pañcakarma, including therapeutically induced vomiting, the use of laxatives, enemas, complications that might occur during such therapies and the necessary medications.

Vāgbhaṭa is said, in the closing verses of the Ashtāṅga sangraha, to have lived in Sind, to have been the son of Simhagupta and pupil of Avalokita. He was a vedic, as is shown by his explicit praise for the Shiva at the start of the Ashtāṅgasāṅgraha as well as in Ashtāṅgahridayasamhitā.

The 3rd verse on the origin of Ayurveda says:

Brahma, remembering Ayurveda, taught it to Prajapathi, he in turn taught it to Ashwini Kumaras (twins), they taught it to Sahasrakṣa (Indra), he taught it to Atri's son (Atreya Punarvasu) and other sages, they taught it to Agnivesa and others and they (Agnivesha and other disciples) composed treatises, each one separately!

Other sutras of Ashtāṅgahridayasamhitā:

4.5-5.5 – Branches of Ayurveda

कायबालग्रहोर्ध्वाङ्गं शल्यदंष्ट्रा जरावृषान् ॥ अष्टावङ्गं गात्रिन तस्याहुः चिकित्सा येषु संश्रिता ।

kāyabālagrahordhvāṅga śalyadamṣṭrā jarāvṛṣān ॥ aṣṭāvaṅgāni tasyāhuḥ cikitsā yeṣu saṁśritā |

1. Kaya Chikitsa – General medicine

2. Bala Chikitsa – Paediatrics

3. Graha Chikitsa – Psychiatry

4. Urdhvanga Chikitsa – Diseases and treatment of Ear, Nose, Throat, Eyes and Head (neck and above region)

5. Shalya Chikitsa – Surgery

6. Damshṛta Chikitsa – Toxicology

7. Jara Chikitsa – Geriatrics

8. Vrushya Chikitsa – Aphrodisiac therapy These are the eight branches of Ayurveda.

9. Verse 5.5 – 6.5 Tridosha

वायुः पतं कफचेत यो दोषाः समासतः ॥ वक्तुं ताऽवक्तुं ता देहं िनत ते वतियत च ।

vāyuḥ pittam kaphaśceti trayo doṣāḥ samāsataḥ ॥ vikṛtā'vikṛtā dehaṁ ghnanti te varttayanti ca |

Vayu – Vata, Pitta and kapha are the three Doshas of the body. The perfect balance of three Doshas leads to health and imbalance in Tridosha leads to diseases.

10. Types of Prakruti – Body Types

शुतवथैः जमादौ वषेणैव वषकृ मेः ॥

तैच तः कृ तयो हनमयोतमाः पथकृ ० ॥

समधातः समतास ० ० ० े ठा नया वदोषजा ॥

śukrārtavasthaiḥ janmādaḥ viṣeṇaiva viṣakṛmeḥ ॥

taiśca tisraḥ prakṛtayo hīnamadhyottamāḥ prthak |

samadhātuḥ samastāsu śreṣṭhā nindyā dvi-doṣajā ॥

Like the poison is natural and inherent to poisonous insects, similarly, the Prakruti (body type) is inherent to humans. The body type is decided during conception, based on qualities of sperm and ovum.

Vata prakruti – Vata body type is considered as low quality

Pitta Prakruti – Pitta body type is considered as moderate quality

Kapha Prakruti – Kapha body type is considered good quality.

11. Verse 13.5- Six tastes

रसाः वावललवणततोषणकषायकाः ष यमाताते च यथापू व बलावहाः

Svadu – Madhura – sweet, Amla – Sour, Lavana – Salt, Tikta – Bitter, Ushna – Katu – Pungent, Kashaya – Astringent are the six types of Rasa.

They are successively lower in energy. That means, sweet taste imparts maximum energy to body and the astringent, the least.

12. Effect of tastes on Tridosha

ताया मातं िनत यः ततादयः कफम । ० ० कषाय तत मधुराः पतमये त कु ० ० वते ॥

tatrādyā mārutam ghnanti trayaḥ tiktādayaḥ kapham |

kaṣāya tikta madhurāḥ pittamanye tu kurvate ॥

In the list of tastes, the first three, i.e. Sweet, sour and salt mitigates Vata and increases Kapha. The last three, i.e. bitter, pungent and astringent tastes mitigates Kapha and increases Vata. Astringent, bitter and sweet taste mitigates Pitta. Sour, salt and pungent tastes increase Pitta.

Ashtāṅgahridayasaṃhitā has been translated into many languages, including Tibetan, Arabic, Persian and several modern Bharatiya and European languages. Selected passages of it have been translated into English and published in the Penguin Classics series.

YOG SUTRA

The yoga sutras of Patanjali are a rich and contemplative arrangement of 196 sutras (aphorism) that help in reaching the highest level of consciousness and understanding of reality.

There are six principal Darsanas, or schools of Hindu philosophy: viz.,

1. The Nyáya, founded by Gautama.
2. The Vaisesika, by Kanáda.
3. The Sánkhyā, by Kapila.
4. The Loga, by Patanjali.
5. The Mimansa, by Jaimini.
6. The Vedánta by Bádaráyana Vyása.

Among them, Sankhya system is intimately connected with the Yoga.

The Sankhya System is attributed to sage Kapila, who reduced the 60,000 sons of king Sagara to ashes.

The chief exponents of the system are the Sánkhyā Karika and the Sankhya Pravachand. Sankhya Pravachand consists of six books and 526 sutras.

Sankhya starts with the propositions that the world is full of miseries of three kinds, physical (adhibhautika), supernatural (ádhidaivika), and corporeal (udhyátnika) which are the results of the properties of matter (Prakriti), and not of its inseparable consciousness (purusa).

The immediate cause of the bondage of the soul is the conjunction of Prakriti and the soul. The remedy is the liberation of the soul by knowledge. According to the Sankhya philosophy, there are two eternally existing entities, Prakriti and souls. Prakriti denotes that which produces or brings forth everything else.

Prakriti is supposed to be made up of three principles, called Gunas, or cords, to bind the soul. They are Satva, Rajas, Tamas; or Truth, Passion, and Darkness. These principles enter into all things; and the relative quantity of each in any object depends on the quality of the object.

According to the Sankhya system, the five grosser elements (mahábhúta) with their distinguishing properties and corresponding organs of sense are the following:

1. Akáśa, ether- Sound- The Ear
2. Vayu, air- Tangibility- The Skin
3. Tejas, fire, light- Colour- The Dye
4. Apas, water- Taste-The Tongue
5. Prithvi, earth-Smell-The Nose

There are eleven organs produced by Ahankára, the five organs of senses - ear, skin, eye, tongue, nose; and five organs of actions - the throat, hand, foot excretory & generative organs, and an eleventh organ standing between them viz., Manas, "the mind" which is regarded as an internal organ of perception, volition, and action.

The Yoga Sutras of Patañjali is a compilation of 195 Sanskrit sutras (aphorisms) on the practice of yoga. The Yoga Sutras were compiled in Bharat in the early centuries by the sage Patanjali, who collected and organized knowledge about yoga from Samkhya.

Yoga consists of meditative practices culminating in attaining a state of consciousness, free from all modes of active or discursive thoughts and of eventually attaining a state where consciousness is unaware of any object external to itself. The archaeological record, dk 6847-Pashupati seal found at Indus Valley sites, in a clear yogic posture suggests that Yoga has been practiced in the Bharatiya subcontinent for more than 4000 years.

Neither the Upaniṣads nor the Gītā mention posture in the sense of stretching exercises or bodily poses and Patañjali dedicates three brief sūtras from his text to this aspect of the practice.

The Yoga Sutras is best known for its sutras on ashtanga yoga, eight elements of practice culminating in samadhi. The eight elements, known as limbs, are yama (abstinences), niyama (observances), asana (yoga posture), pranayama (breath control), pratyahara (withdrawal of the senses), dharana (concentration of the mind), dhyana (meditation) and samadhi (absorption or stillness).

यमिनयमासनप्राणायामप्रत्याहारधारणाध्यानसमाधयोऽष्टावङ् गांिन

YAMA NIYAMA ASANA PRANAYAMA PRATYAHARA DHARANA DHYANA SAMADHI
ASHTAU ANGANI (II SUTRA 29)

“Restraint, observance, postures, regulation of breath, substitute food for the mind, ability of the mind to focus, meditation, and higher states of consciousness are the eight limbs of yoga.”

When the mind is stilled (vritti nirodha) kaivalya (solitude) can be attained.

Patanjali divided his Yoga Sutras into 4 chapters or books (Sanskrit pada), containing 195 aphorisms, divided as follows:

SAMADHI PADA (51 SUTRAS)

Samadhi refers to a blissful state where the yogi is absorbed into the One. The author describes yoga and then the means to attaining samadhi. This chapter contains the most famous verses: “Atha yoga anusasanam” (“Yoga begins with discipline”) and “Yogas citta vritti nirodha” (“Yoga is control of citta vrittis” – i.e., thoughts and feelings).

SADHANA PADA (55 SUTRAS)

Sadhana is the Sanskrit word for “practice”. Here the author outlines two forms of Yoga: kriya yoga (action yoga) and ashtanga yoga (eightfold yoga).

Kriya yoga, sometimes called karma yoga, is a part of the Bhagavad Gita, Chapter 3, where Arjuna is encouraged to act without attachment to the results of action. It is the yoga of selfless action and of service.

Ashtanga yoga consists of the following levels:

1. Yama = abstinence. These are 5 in number:
 - ahimsa = non-violence to all beings
 - satya = truth

- asteya = abstinence from theft, not stealing
 - brahmacharya = celibacy
 - aparigraha = abstinence from worldly possessions
2. Niyama = observances. These also are 5 in number:
- Saucha = purity & cleanliness
 - Santosha = contentment
 - Tapas = austerities
 - Svadhyaya = study
 - Ishvarapranidhana = surrender to God
3. Asana – Postures of the body to help settle it for meditation. Equilibrium at the physical level enables balance at the mental, intellectual, and, ultimately, spiritual level.
4. Pranayama – Control of prana or vital breath
5. Pratyahara – senses turn inwards towards consciousness. Pancha Kosha, that envelop the inner Atman or consciousness:
- Annamaya Kosha – the food sheath
 - Pranamaya Kosha – the breath sheath
 - Manomaya Kosha – the mind sheath
 - Vijnyanmaya Kosha – the intellect sheath
 - Anandamaya Kosha – the bliss sheath
 - Through meditation, one transcends the koshas to ultimately connect with the consciousness, the objective of pratyahara.
6. Dharana– Focused attention on a single object; concentration
7. Dhyana– Meditation
8. Samadhi– Super-conscious state or trance

VIBHUTI PADA (55 SUTRAS)

Vibhuti is the Sanskrit word for “power” or “manifestation”. It describes the “higher” states of awareness and the techniques of yoga to attain them.

KAIVALYA PADA (34 SUTRAS)

Kaivalya literally means “isolation”, which means emancipation, liberation, used interchangeably with moksha (liberation), which is the goal of Yoga.

ARTHASHASTRA

In ancient Bharat, students were taught 64 arts and 14 science-arts. Artha shastra was also taught because it is an Upaveda. It is one of the 14 sciences. The 4 vedas, 4 Upavedas and 6 Vedangas are collectively known as 14 sciences.

The Mimamsâs, Tarka, Samkhya, Vedanta, Yoga, Itihasas, Puranas, Smritis, theory of Sceptics, Artha Shastra, Kama shastra, Silpa Shastra, Alañkâra (Rhetoric), Kavyas, language of the folk (vernacular),

the art of speaking, the theory of Yavanas, and manners and customs of countries and nations—these are the thirty-two Vidyās.

The sixty-four arts and fourteen sciences were taught in the past in the Gurukulas. The names of these arts and sciences along with a brief description are present in Shukra Niti given by Shukracharya.

Shukracharya in the Shukra Niti (moral code of conduct) says who is an expert of arts and sciences should be a preceptor. Who is unlearned should not be a preceptor. This text mainly discusses duties of princes, Kings, war and political strategies to be followed by a king to rule the kingdom prosperously.

According to Bhagavatam, Balaram and Shri Krishna each learnt all art in a day from Sandipani Muni as seen in the following verses:

SB 10.45.34 — He also taught them the Dhanur-veda, with its most confidential secrets; the standard books of law; the methods of logical reasoning and philosophical debate; and the sixfold science of politics.

SB 10.45.35-36 — O King, those best of persons, Kṛṣṇa and Balarāma, being Themselves the original promulgators of all varieties of knowledge, could immediately assimilate each and every subject after hearing it explained just once. Thus with fixed concentration They learned the sixty- four arts and skills in as many days and nights. Thereafter, O King, They satisfied Their spiritual master by offering him guru-dakṣiṇā.

Shri Krishna & Balaram learned these 64 skills:

(1) gītām, singing; (2) vādyam, playing on musical instruments; (3) nṛtyam, dancing; (4) nāṭyam, drama; (5) ālekhyam, painting; (6) viśeṣaka-cchedyam, painting the face and body with colored unguents and cosmetics; (7) taṇḍula-kusuma-bali-vikārāḥ, preparing auspicious designs on the floor with rice and flowers; (8) puṣpāstarāṇam, making a bed of flowers; (9) daśana-vasanāṅga- rāgāḥ, coloring one's teeth, clothes and limbs; (10) maṇi-bhūmikā-karma, inlaying a floor with jewels; (11) śayyā-racanam, covering a bed; (12) udaka-vādyam, ringing waterpots; (13) udaka- ghātaḥ, splashing with water; (14) citra-yogāḥ, mixing colors; (15) mālya-grathana-vikalpāḥ, preparing wreaths; (16) śekharāpīḍa-yojanam, setting a helmet on the head; (17) nepathya-yogāḥ, putting on apparel in a dressing room; (18) karṇa-patra-bhaṅgāḥ, decorating the earlobe; (19) sugandha-yuktiḥ, applying aromatics; (20) bhūṣaṇa-yojanam, decorating with jewelry; (21) aindra-jālam, jugglery; (22) kaucumāra-yogaḥ, the art of disguise; (23) hasta-lāghavam, sleight of hand; (24) citra-śākāpūpa-bhakṣya-vikāra-kriyāḥ, preparing varieties of salad, bread, cake and other delicious food; (25) pānaka-rasa-rāgāsava-yojanam, preparing palatable drinks and tinging draughts with red color; (26) sūcī-vāyā-karma, needlework and weaving; (27) sūtra-kṛīḍā, making puppets dance by manipulating thin threads; (28) vīṇā-ḍamarukavādyāni, playing on a lute and a small x-shaped drum; (29) prahelikā, making and solving riddles; (29a) pratimālā, capping verses, or reciting poems verse for verse as a trial of memory or skill; (30) durvacaka-yogāḥ, uttering statements difficult for others to answer; (31) pustaka-vācanam, reciting books; and (32) nāṭikākhyāyikā-darśanam, enacting short plays and writing anecdotes.

Kṛṣṇa and Balarāma also learned (33) kāvya-samasyā-pūraṇam, solving enigmatic verses; (34) paṭṭikā-vetra-bāṇa-vikalpāḥ, making a bow from a strip of cloth and a stick; (35) tarku-karma, spinning with a spindle; (36) takṣaṇam, carpentry; (37) vāstu-vidyā, architecture; (38) raupya-ratna-parīkṣā, testing silver and jewels; (39) dhātu-vādaḥ, metallurgy; (40) maṇi-rāga-jñānam, tinging jewels with various colors; (41) ākara-jñānam, mineralogy; (42) vṛkṣāyur-veda-yogāḥ, herbal medicine; (43) meṣa-kukkuṭa-lāvaka-yuddha-vidhiḥ, the art of training and engaging rams, cocks and quails in fighting; (44) śuka-śārikā-pralāpanam, knowledge of how to train male and female parrots to speak and to answer the questions of human beings; (45) utsādanam, healing a person with ointments; (46) keśa-mārjana-kaūśalam, hairdressing; (47) akṣara-muṣṭikā-kathanam, telling what is written in a book without seeing it, and telling what is hidden in another's fist; (48) mleccita-kutarka-vikalpāḥ, fabricating barbarous or foreign sophistry; (49) deśa-bhāṣā-jñānam, knowledge of provincial dialects; (50) puṣpa-śakaṭikā-nirmiti-jñānam, knowledge of how to build toy carts with flowers; (51) yantra-mātrkā, composing magic squares, arrangements of numbers adding up to the same total in all directions; (52) dhāraṇa-mātrkā, the use of amulets; (53) saṁvācyam, conversation; (54) mānasī-kāvya-kriyā, composing verses mentally; (55) kriyā- vikalpāḥ, designing a literary work or a medical remedy; (56) chalitaka-yogāḥ, building shrines; (57) abhidhāna-koṣa-cchando-jñānam, lexicography and the knowledge of poetic meters; (58) vastra-gopanam, disguising one kind of cloth to look like another; (59) dyūta-viśeṣam, knowledge of various forms of gambling; (60) ākarṣa-kṛīḍa, playing dice; (61) bālaka-kṛīḍanakam, playing with children's toys; (62) vaināyikī vidyā, enforcing discipline by mystic power; (63) vajjayikī vidyā, gaining victory; and (64) vaitālikī vidyā, awakening one's master with music at dawn.

These sciences were also present during the time of Ramayana. We will find some principles of politics, strategies in the Valmiki Ramayana also.

*vīrāḥ ca niyatotsāhā rāja śāstram anuṣṭhitāḥ |
śucīnām rakṣitāraḥ ca nityam viśaya vāsinām || 1-7-12*

They are valiant ones with engineered enthusiasm, administrators of political science, clean persons and protectors of subjects of their kingdom at all times.

Rama gives instruction to Bharat, his brother, as regards the duties of a king:

*iṣu astra vara sampannam artha śāstra viśāradam |
sudhanvānam upādhyāyam kaccit tvam tāta manyase || 2-100-14*

"O, dear! I hope that you treat with due respect; Sudhanva, your teacher in archery, who is furnished with the most excellent arrows and darts and well-versed in political economy."

Vedic seers such as Brhaspati, Usanās, Visalakṣa, Bharadvāja, Parasara etc. are considered as the founders of Arthashastra.

A copy of the Arthashastra in Sanskrit, written on palm leaves, was presented by a Tamil Brahmin from Thanjavur to the newly opened Mysore Oriental Library. The text was identified by the librarian Rudrapatna Shamasastri as the Arthashastra.

STHAPATYAVEDA

Some schools hold Sthapatyaveda as fourth Upaveda in place of Arthashastra. Sthapatya Veda is the most ancient and supreme system of country, town, & home planning in accord with Natural Law, connecting individual life with Cosmic Intelligence and creating ideal living conditions on earth for everyone.

Sthapatya Veda comes from the Sanskrit, 'Sthapana', which means 'to establish', and 'Veda', which means 'knowledge'.

It uses precise mathematical formulas, equations, and proportions to design homes, offices, institutional buildings, commercial places and industries in perfect harmony with Natural Law. Sthapatya Veda is the only science that has the precise knowledge and time-tested formulas for site selection, proper orientation, positioning, and placement of rooms according to their purpose.

The strongest influence of Natural Law on earth comes from the sun. As it crosses the sky, it generates differing qualities of energy. Homes should be designed so that the different energies of the sun correspond to the specific function and activity in each room and in this way natural law will support every aspect of our daily activity. Buildings should be sustainable with natural, non- toxic materials suitable to the local climatic conditions. Sthapatya Veda promotes construction according to Natural Law, which takes into account the orientation of buildings in view of direction

—north, south, east, and west.

Examples of such laws: the front entrance of a building must face east or north. North-facing is believed to ensure prosperity and happiness, and east-facing promotes spiritual health. Other factors considered are the location in relation to the sun at particular times of the day and in relation to bodies of water, among other factors.

God Shri Vishvakarma is the source of the knowledge contained in the Sthapatyaveda who passed the knowledge to Rishis.

Mahamuni Maya was the progenitor of Sthapatya Veda teachings. He is considered as the Divine architect, scientist, technical wizard, poet and builder.

In ancient scriptures, Mayasura was a great ancient king of the asuras, daityas and rakshasa races. Mayasur was known for his brilliance in architecture. In Mahabharata, Mayasabha - the Hall of Illusions - was named after him. Mayan is credited with the authorship of the Mayamatama Sthapatya Veda, the Surya Siddhanta.

Sthāpatya Veda’ is the knowledge necessary to create anything in harmony with the cosmic order.

When applied to architecture, it is often called ‘Vastu Vidya’ (the science of building) or ‘Vastu architecture’.

Our brain works differently when we look towards the east. Certain neurons in the hypothalamus react to our spatial orientation and are particularly strongly stimulated when we look towards the east, which is also the direction of rotation of Earth. Therefore, Sthapatya Veda recommends orienting the head to

the east while meditating, resting and writing. A house should have the entrance towards the east direction for the well-being of the family.

Vāstu-Śāstras (science of dwelling) are ancient Sanskrit manuals of architecture.

Ancient Vastu Shastra principles include those for the design of Mandir and the principles for the design and layout of houses, towns, cities, gardens, etc. The Pandit or Architects of Vastu Shastra are Sthapati, Sūtragrāhin (Sutradhar), Vardhaki, and Takṣhaka.

Six of the most studied, complete and referred to Bharatiya texts on Vastu Vidya are – the Mayamata, the Manasara, the Samarangana Sutradhara, the Rajavallabha, the Vishvakarmaprakasha and the Aparajitaprccha.

According to ancient architectural science, Vastu Shastra, Vastu Purusha Mandala is a geometric diagram or a grid that is used as a reference for designing rooms, doors and various elements of a house. While Purusha refers to cosmic man or energy, power or soul, mandala refers to a 9X9 grid, square in shape and divided into 81 parts. Each grid is assigned to a deity.



The Vastu Purusha Mandala has been the foundation of Vastu design for temples, homes, offices, and industries for thousands of years.

Vastu Purusha Mandala dictates that the floor plan of a structure, especially its main gate, be designed in line with the principles of Vastu. If this is done, it will provide abundant riches to its residents.

Aspects of Vastu Purusha mandala architecture include the concept of using magnetic waves emanating from the North Pole and sun rays emanating from the East.

Following the Vastu Purusha Mandala architecture, the following is a guideline for the critical positions of rooms:

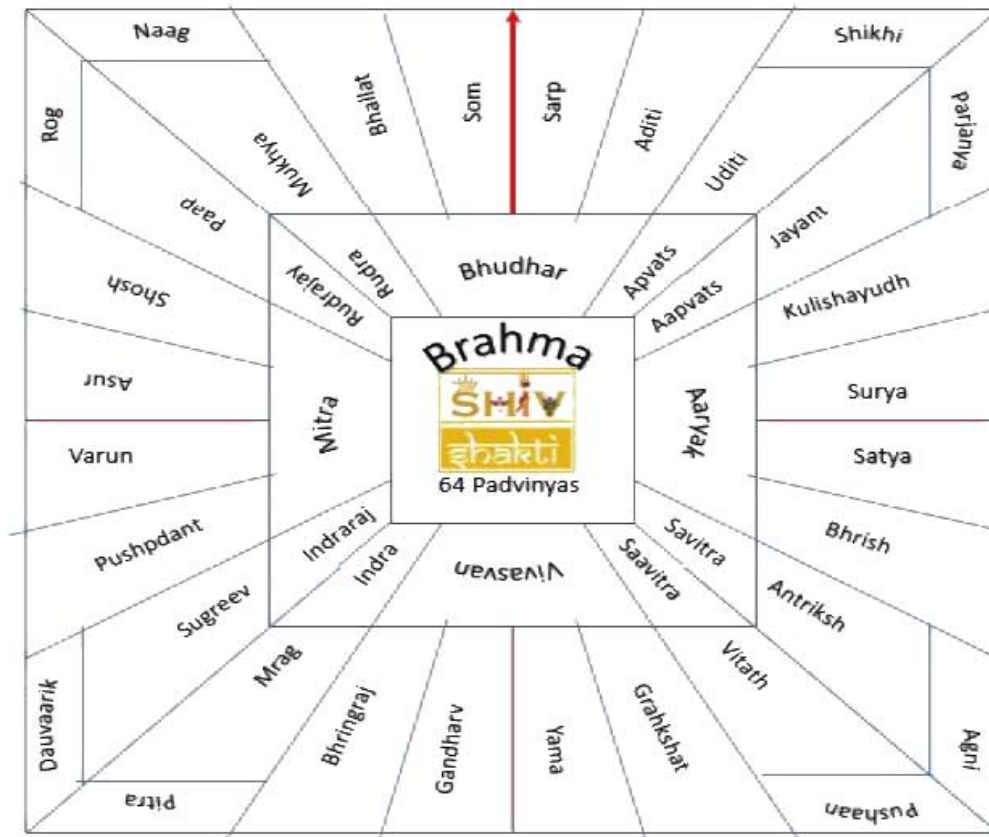
1. Ishanya (Northeast): Pooja room or prayer room

2. Purva (East): Windows/doors/ bathrooms
3. Agneya (Southeast): Kitchen
4. Dakshin (South): Bedroom/storeroom/office
5. Paschim (West): Study room/children's room
6. Vayavya (Northwest): Living room/guest bedroom/ dining
7. Uttara (North): Treasure room
8. Nairutya (Southwest): Master Bedroom

Legend is - When Brahma created The Universe, he also created a man along with other creatures. Soon after his creation the man started growing and as time passed, he became extremely huge. With his size, his hunger also increased and he started eating everything that came in his way. Eventually, he became so big that his shadow cast a permanent eclipse on earth. Brahma understood that he needs to rectify the man. But the man was too powerful for Brahma, hence he requested the Gods of eight directions (Astha Dikpalakas) to help him.

Upon his request, Gods came to rescue. They grabbed the man and pinned him against the ground with his head in North-East and legs in South-West direction. Brahma had to hold the man down from the centre. Since then, he has become an inseparable part of earth forever. Brahma ordered him to reside on earth in every place/house and that he would bless every occupant with health, wealth, and prosperity and in return, the occupants would worship him.

45 deities held his body, 13 from within & 32 from outside his body. In this way, the Vastupurush and 45 deities formed a Vastu Purush mandala which is the most important spiritual aspect of Vastu evolution. The body parts of Vastupurush are given the names of those deities who touched there. Like – brahma touched his navel, so center of the house, where the navel of Vastupurush is located is called the Brahmasthal.



With the construction of the building, different energy fields are created at every stage.

- When the foundation stone is laid, it leads to the creation of God Brahma (the creator of whole universe),
- With the construction of pillars, 4 energy fields develop in each direction- North, East, South and West.
- When the construction of wall starts, 16 energy fields get created till the completion of walls in all the cardinal directions ahead of previously constructed energy fields.
- With the construction of roofs, 8 energy fields get developed in all cardinal directions, north east, south east, south west and North West.
- When the interior work of a building starts, 16 more energy fields are created till the completion of building.

In Vastu, all zones get their energy from Brahmasthaan, The Center. All the types of Urja(energy) in Vastu (Dev Urja, Manushya Urja or Asur Urja) originates from this center.

Dev energy means powerful & positive energy which influences our thoughts or emotions in a positive way. Asur energy means negative energy. Manushya whose creation is a combination of Dev & Asur means mix energy.

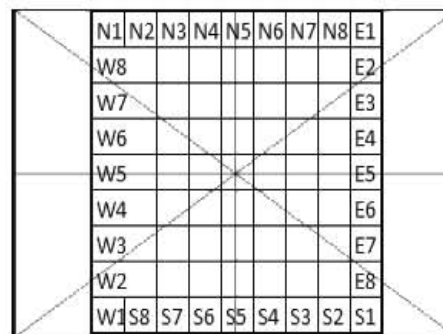
Colours are believed to have a profound impact on the energy flow within a home. Choosing the right colours for different rooms in your home according to Vastu principles can help create a harmonious and positive environment.

ROOM	VASTU COLOURS
Kitchen	Orange, Red, Yellow, Pink
Bedroom	Light Blue, Green, Lavender
Living Room	Yellow, Green, Blue
Pooja Room	White, Light Yellow, Light Blue

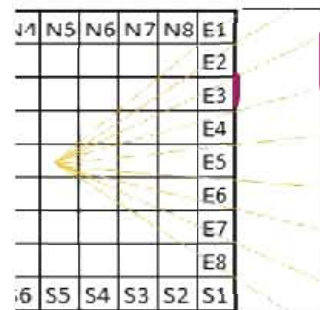
DIRECTIONS & COLOURS

North	Green
East	White
South	Red, Yellow
West	Blue
Northeast	White, Light Blue
Southeast	Silver, Light Grey
Southwest	Peach, Light Brown
Northwest	White, Light Grey

This gridding is base of any Vaastu where 81 cell division method, also called as 81 padvinyaas, is used. Our ancient texts mainly suggest to have a Square Plot with 0-degree North. For correct vastu measurement, one needs to find the center of the rectangular plot & create square grid taking into account lower dimension.

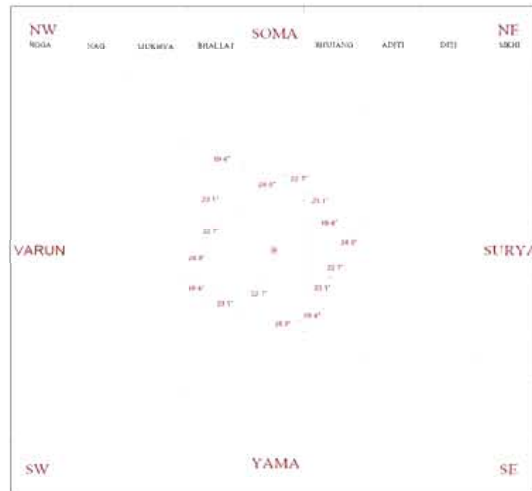


Then, extend the lines from center so they cut the corner of the plots.



This is the way to grid the rectangular plot with perfect North at 0 degree.

The above example can be repeated with different sizes of plot. In all the cases the angles of the square area remains the same. But these angles are not equal for the plots of different shapes & sizes and definitely not $360/16 = 22.5$.



Vastu remedies for abundance & peace at home:

- Home should be well-lit, well-ventilated with plenty of windows facing east or north.
- Balance the five elements in each room.
- Use light colours to balance the energy.
- Maintain cleanliness.
- Use sea salt or camphor for positive energy.
- Blowing conch shells, ringing of bells and praying/meditation repels negativity.

GANDHARVAVED

Gandharva veda is one of the four main upavedas, which are derived from the four Vedas. In Sanskrit, gandharva means “skilled singer” or “master of music” and veda means “knowledge” or “wisdom.”

It is the study of all art forms including music, dance and poetry. This Vedic text contains information about the laws and ways to practice music. It is associated with musical rhythms, intonation and different ways of chanting the mantras.

Gandharva veda offers a detailed account on the association of music with various aspects of creation and the positive impact of music on the body and mind. It also gives insight on the association of different sounds and rhythms with different species on Earth. Gandharva veda is effectively used in meditation as it helps the yogi transcend to the innermost level of the mind. The ancient texts associated with Gandharvaved include:

- Bharata’s Natya-Shastra
- Dattila’s Dattilam
- Matanga’s Brihad-desi
- Narada’s Sangeet Makarand

- Someshwara's Manasollasa
- Sharanga Deva's Sangeet Ratnakara

The Natya Sastra is an ancient Bharatiya treatise on the Performing Arts, which encompasses theater, dance and music. It is based on much older Gandharva Veda, which contain 36000 Slokas. Each Gandharva Veda melody (Raga) traces the vibrations and patterns of a particular time of the day. When a raga is played during a specified time period, it creates a natural balance and harmony in awareness and in the environment. Through the particular quality (Rasa) of each Raga, characteristics such as greater courage, self-confidence, wisdom, and happiness are enlivened.

All swara (notes), raga (melodies) & Taal(rhythms) in the universe are expressions of rhythms of nature and are present in physiology or body of all creatures. They rectify all imbalances in their nature as well as balance doshas-Vata, Pitta and Kapha in physiology.

geetam vadyam tatha nrityam trayam sangeet muchyate

Meaning: Geet (song), Vadya (instrument) and Nritya (dance) - the three arts are collectively known as Sangeet (music)

Gandharva Veda includes all 3 branches: Vocal music-singing, Instrumental music and Dance.

Components of Music:

SWARA:

The word swara (meaning notes) is derived from the Sanskrit word 'Svar', which means sound. They refer to the individual notes of the musical scale. The 7 notes of music Sa, Re, Ga, Ma, Pa, Dha, and Ni are frequently used to symbolize the musical notes, known as Swaras, in Bharatiya music.

These usually are in ascending order of Sa - Re/Ri - Ga - Ma - Pa - Dha/Da - Ni - Sa, called Aaroh And in descending, reverse order of Sa - Ni- Dha/Da - Pa - Ma - Ga - Re/Ri - Sa, called Avaroh.

Their full forms are as follows:

1. Sa - Shadja: It is the first Swara and the base of the pitch foundation in Bharatiya music. The singer begins singing with this note usually.
2. Re/Ri - Rishabh: As the second Swara, it is one pitch higher than Sa and is pronounced as Re in Hindustani Classical music and as Ri in Carnatic music.
3. Ga - Gandha: Gandha is the third musical note and has a melodious middle ground to the scale and is pronounced as Ga in both Carnatic and Hindustani Classical Music.
4. Ma - Madhyam: With many songs that are sung throughout the two Bharatiya classical genres, the Madhyam Swara is very important and is also pronounced as Ma, across the musical genres.
5. Pa - Pancham: One of the most important notes in the pitch scale, knowledge of a detailed take on the Pancham Swara, generally known by its acronym, Pa, is considered crucial.
6. Dha/Da - Dhaivat: The second last note in the pitch scale, this Swara is called Dhaivat and is known more commonly as Da in Carnatic Music and Dha in Hindustani Classical Music.
7. Ni - Nishad: The highest point on the pitch scale, this seventh musical note is called the Nishad Swara and is universally pronounced as Ni in Bharatiya music.

The well-known Shiksha texts are: Paniniya, Yagnyvalkya, Vashisthi, Katyayani, Manduki and Naradiya. The last one- Naradiya is associated with Sama Veda. Naradiya Shiksha is written by the sage Narada. Naradiya Shiksha is a branch of Veda lore (Vedanga) and it deals with elements of chanting and phonetics.

Acharya Narada, a Vedic sage famous in Vedic traditions as a travelling musician and storyteller, carried news and enlightening wisdom. He is also referred to as the king of all sages or rishis, meaning Rishiraj. He was gifted with the boon of knowledge, past, present and future. He is depicted carrying a KHARTAL (Musical Instrument) and TANPURA, with the name Mahathi, which was used to accompany his singing of hymns, prayers & mantras. He is regarded as one of the great masters of the ancient musical instrument.

Each note corresponds to a specific sound found in the natural world (Naradiya Shiksha (1.5.3; 1.5.4) verses):

षड् जं वदित मयूरो गावो रम्भिन्त चषर्भम् अजाविके तु गान्धरं क्रौञ्चो वदित मध्यमम् ३ पूष्पसाधारणे माले कोकिलो
विक्र पञ्चमम् अश्वस्तु धैवतं विक्र िनषादं विक्र कुञ्जरः ४

1. Sa (Shadja): Derived from the cry of the peacock.
2. Re (Rishabha): Inspired by the bellow of a bull.
3. Ga (Gandhara): Associated with the bleating of a goat.
4. Ma (Madhyama): Resembles the call of the heron.
5. Pa (Panchama): Based on the song of the nightingale (kokila).
6. Dha (Dhaivata): Originates from the neighing of a horse.
7. Ni (Nishada): Reflects the trumpeting of an elephant.

RAGA:

Swaras when combined in a specific sequence forms Raga. They are a collection of Sur and Swaras sung in a way that reflects a feeling or emotion.

The six main ragas are Raga Bhairav, Raga Malkauns, Raga Hindol, Raga Deepak, Raga Shree, and Raga Megh.

Some of the most powerful ragas in Hindustani classical music include Bhairavi, Darbari, and Bhairav.

- Raag Bhairavi: Known as the "Queen of Morning Raagas", it's a peaceful and devotional raga that's often sung at the end of classical concerts. It's used in many popular songs, including "Laaga Chunari Me Daag" and "Mile Sur Mera Tumhara".
- Raag Bhairav: An ancient raga that's said to have originated from the mouth of Shiva or Surya. It's a vast raga that allows for many note combinations and a wide range of emotions.
- Raag Darbari: Considered the "King of Ragas" and one of the most difficult to play.
- Raga Deepak: A raga that's said to have the power to light lamps through its performance.
- Megh Malhar: It is a rousing raga that is said to have the power to summon rains after a dry spell. It is sung even today to celebrate the first rains after summer.

The famous Dhrupad style of singing is believed to be started by Tansen and his teacher Swami Haridas.

TAAL:

Taal is any rhythmic beat or strike that measures musical time. The tala system of the north is called Hindustani, while of the south is called Carnatic. In the Northern Bharatiya Hindustani music system, the most common tala is Teental while in Southern Carnatic system, it is Aditaal. A metric cycle of a tala contains a specific number of beats, which can be as short as 3 beats or as long as 128 beats. Other common Taals:

Carnatic music: The Sapta Tala system has seven basic talas: Triputa, Dhruva, Matya, Rupaka, Jhampa, Eka, and Ada.

Hindustani music: There are many talas, including Ektal, Teen taal, Dadra taal, Keharwa taal, Roopak taal, and Jhap taal.

Matra: The beats, or pulses within each rhythmic cycle are called matras. Each beat is expressed by syllables that are equidistant from one another. Eg Teental: A 16-beat taal with four equal division. The first matra(beat) of any rhythmic cycle is called the sam.

The common Taals are:

Dadra of 6 matra- The basic pattern for Dadra taal is dha dhi na, dha tu na. It is heard in qawwalis, film songs, bhajans, gazals, and folk music.

Roopak of 7 matra- Unlike the popular Teental, the vibhags of Rupak Tala are not of equal length. It is popular in Bhajans & Geet. It's avartan (pattern) is Tin Tin Na | Dhin Na | Dhin Na.

Jhaptal of 10 matra- It has ten beats in four divisions (vibhag). the third of which is the khali. It's avartan is dhi na | dhi dhi na | ti na | dhi dhi na.

Other common Taal:

Kaharva of 8 matra,, Ektaal of 12 matra, Dhamar and Deepchandi of 14 matra.

Tali and khali- Tali (ताली) is a stroke or clap, marking the start of a cycle (Tal) while Khali (खाली) means Empty or silent, a pause or rest in music.

Vibhag- The matras (beats) in every tal are grouped into divisions called vibhags.

A vibhag is a rhythmic unit made up of a certain number of beats and are either stressed (tali) or unstressed (khali), indicated by claps and waves of the hand. Eg. In teentaal, there are four vibhags of four matras each, for a total of 16 matras.

Avartan- An avartan is the full cycle of a tal, or rhythmic pattern. It's made up of measures called vibhags, which are made up of beats called matras. The number of matras in an avartan is always the same, but the number of beats in a vibhag may vary. Eg in Teental, which has 16 beats, one avartan is 16 beats long. In Rupak tal, which has 7 beats, one avartan is 7 beats long.

THEKA

The basic rhythmic phrase of a tala when rendered on an instrument such as tabla/Drum is called a theka.

The standard sequence of beats that defines a Taal in its simplest form is called Theka. For instance, the Theka of Teentaal is:

Dhaa dhin dhin dhaa / dhaa dhin dhin dhaa / dhaa tin tin taa/ taa dhin dhin dhaa

A theka is a composition that can be played on an instrument like the tabla or pakhawaj.

Dhrupada is said to be the most ancient form of music based on Samaveda and Gandharvaveda. Dhrupad is the oldest form of Bharatiya Classical music and its origin can be traced back to the chanting of vedic hymns and mantras. It is said to be a form of the Gandharva Veda, the Vedic science of music, which is a branch of Sama Veda.

Dhrupad coincided with the Bhakti movement (particularly that of the Vallabh Sampradaya) and consequently was more devotional in nature. It was rendered in temples facing Divinity, full of devotion and bhaav and came to be known as Haveli Dhrupad/Sangeet.

Famous proponents of this style- Ashta chaap (8 primary poets of the Vallabh Sampradaya), Swami Haridas (Nimbarka Sampradaya), Gurbani (Sikh Tradition).

This then evolved into a sophisticated classical form of music and in the 1500's came to be patronized by the royal courts. Raja Man Singh (King of Gwalior) in particular gave Dhrupad immense encouragement and introduced many refinements, being a musician himself. This style came to be known as the Darbari Dhrupad.

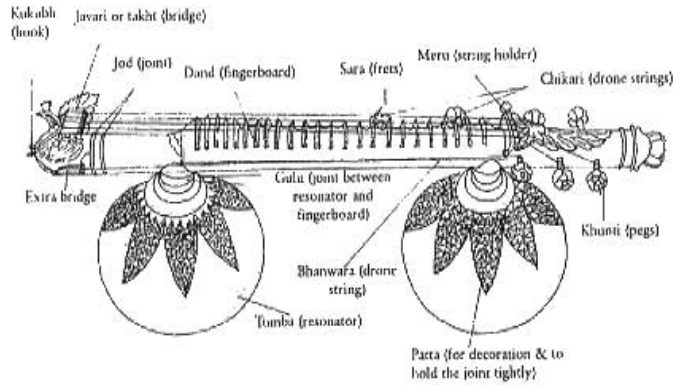
Famous proponents of this form - Tanna Mishra (Miyan Tansen) & Baiju Bawra, both received guidance from Swami Haridas.

The Haveli form is only practised in temples while the Darbari tradition is performed in a concert.

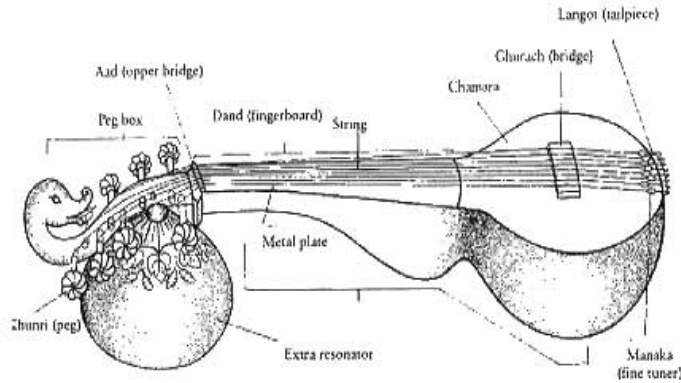
In Bharatiya classical music, the artist is accompanied by a Tanpura. For rhythmic accompaniment the Pakhawaj is traditionally used. Other than vocal, the Dhrupad style is also performed on stringed instruments such as the Rudra Veena, Surbahar, Surshringar. It can actually be performed on any instrument which can produce micro-tones and slides between the notes of a scale.

The Dhrupad form is set to Talas such as Chau Tala, Sool Tala, and Brahma Tala. Taals such as tivra taal-7 matra taal, Chautaal-12 matra taal, and Sooltaal-10 matra taal are taken when singing dhrupad. There is a long Aalap (sound) and then the dhrupad composition is sung. The alap in dhrupad is sung using a set of syllables, popularly derived from a Vedic mantra and Beejakshars, in a recurrent, set pattern: a re ne na, té te re ne na, ri re re ne na, te ne toom ne.

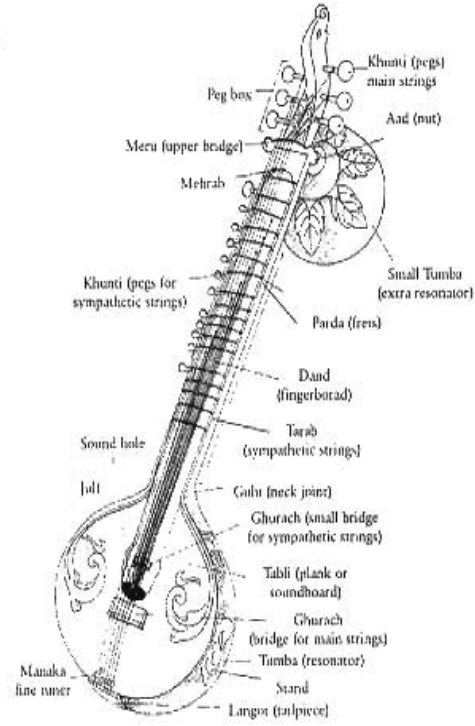
Rudra Veena



Sursingar



Surbahar



- Courtesy: Surbahar-Sreenivasrao

RASA:

In Sanskrit, the emotion is called as Bhava. The manifestation of a Bhava through the body is called a Rasa. As described by Bharatamuni, there are 8 Sthayi Bhavas (Emotions). The 8 Emotions are:

1. Rati (Love)
2. Hasya (Amusement/Extreme Happiness)
3. Shoka (Sorrow/Sadness)
4. Krodha (Anger)
5. Utsaha (Energy/Excitement)
6. Bhaya (Terror)
7. Jugupsa (Disgust)
8. Vismaya (Astonishment)

The 8 Rasa corresponding to the aforementioned Bhava are as follows:

- **Shrungar:** Beauty, Romance – Rati Bhava. Vishnu is the presiding deity of the Rasa. The Lush green colour signifies the Rasa.
- **Hasyam:** Laughter – Hasya Bhava. The purity of happiness is expressed through White as the colour with Shiva being the presiding deity

- Karunyam: Compassion (at times tears) – Shoka Bhava. The of Death – Yama is the presiding deity and Grey is the colour of compassion.
- Raudram: Fury – Krodha Bhava. Red is the colour of anger and Shiva is the presiding deity of the Raudra Rasa
- Veeram: Heroism or Courageousnes- Utsaha Bhava. The king of the Devtas, Indra is the presiding deity and is expressed by Saffron colour.
- Bhayanakam: Fear - Bhaya Bhava or Terror. Again, the of death, Yama is the preceding deity of the Rasa while Black is the colour used for expressions of fear.
- Bibhastam: Aversion- Jugupsa Bhava or the emotion of disgust. Shiva is the presiding deity of the Rasa while it is expressed by using a deep hue of blue.
- Adbhutam: Amazement or Surprise -Vismaya Bhava. Brahma the Creator is the presiding Deity and is expressed by the colour Yellow.

The tenth Rasa “Shantam” was added later:

- Shantam: Peace or Tranquillity. Vishnu is the presiding deity and is expressed by using the colour of Clear White

GARBHOPANISHAD

One of the ancient Upanishads, Garbhopanishad, has precise detailed information on embryology, matching very closely with modern scientific embryology, excluding some details still unknown to modern science. Garbhopanioshad is written much earlier than 3000 BC, at least 1500 yrs before papyrus.

In Vedic scriptures, it is clearly mentioned that the gender of the unborn child is dependent on the seed (male aspect) and not on prakriti (female aspect). Decades of modern scientific research in laboratories across the world has finally proved this Vedic truth. (that Y/X chromosome from father is only responsible for the gender of the child).

Below are some of the details of Fertilization, Embryology and Gynaenacology from Garbhopanishad:

What is garbha (pregnancy)?

The factors required for the conception of fetus ought to be

- Father’s semen
- Mother’s menstrual blood (artava)
- Atman, or subtle body made up of five elements (fire, earth, air, water and spirit)
- Manas or mind, united to a particular embryo subjective to its past karma.

Atman (spirit of supreme soul) unites with sonitum (ovum) and shukra (Sperm) inside the uterus to form garbha (embryo). In addition to atman, there is also the role of prakriti (nature) and vikaras (emotion or feeling) behind the formation of embryo (for fertilization to happen).

Symptoms of pregnancy is divided into two parts:

1. Sadyo garbha laksana (symptoms just after conception):

Weakness of thighs, fatigue, thirst, quivering of vagina and retention of shukra (sperm) and sonitum (ovum).

2. Vyakta garbha laksana (symptoms after child body parts is formed inside embryo):

Vomiting without cause, development of linea nigra, anorexia, heaviness of body especially legs, craving for pleasant aroma, salivation, blackened lips and areola, tiredness, aversion for sour taste, etc.

Body features from parents:

Intensity of features inherited from parents depend upon the gender of the unborn child,

Components from father:

Beard and moustache, Nail, Hair, Bones, Tendons, Veins, Arteries, Semen, Teeth.

Components from mother:

Muscles, Fat, Kidney, Pancreas, Spleen, Urinary bladder, Bone marrow, Skin, Liver, Stomach, Blood, Rectum, Intestines, Heart.

Body features from nature (surroundings) Components from Satva (mental faculty):

Consciousness, Determination, Pride, Endeavour, Memory, Knowledge and Longevity. Components from Satmya (habituation):

life, living style of parents and sibling, Natural immunity, refined intelligence and function, Absence of idleness, Freedom from diseases, Longevity, Absence of greediness, Strength or energy.

Components derived from Rasa (food):

Growth of body, Origin of body, Nourishment, Health, Formation of various body parts, Enthusiasm or zeal, Attachment to life, Energy or strength, Contentment, Complexion. Fetal nourishment

Connected to maternal “rasavaha-nadi”, the umbilical cord provides the crux of mother’s diet to the child forming inside fetus. Child gets the vital nutrients for its sustenance from Upasneha (Moisture inside fetus) that runs obliquely along all his/her body parts. This continues since conception till the parts of a child are fully formed inside embryo.

Phases of embryo formation:

1st month:

Embryo takes the shape of kalala (random or irregular form). 2nd month:

Five elements of nature combines together to form the solid mass inside embryo. Sex of the child can be predicted at this stage. If the shape of the solid mass is elongated, baby is female, male if oval and hermaphrodite if the shape of the solid mass is round.

3rd month:

Sense organs and body parts of the child starts developing inside fetus.

4th month:

Formation of different body parts like thorax, abdomen becomes stable and conspicuous. Heart is formed and hence, the Consciousness manifests inside the embryo. Character and behavior of the child is determined by the preference of taste and food the mother asks for during this period of pregnancy. If the preference and desires of mother is not met, the unborn child may undergo dwarfism, kyphosis, squint, or other congenital defects.

5th month:

Mind is developed and hence the increase in mental consciousness.

6th month:

Mind becomes more developed. Hair, nails, veins and other similar organs develop in this month.

7th month:

All minor and major parts of the body becomes fully developed or almost conspicuous.

8th month:

Immaturity of fetus keeps the ojas (Vigor or energy) unstable. Ojas moves from fetus to mother and vice versa through fluid carrying channels. This movement of Ojas inside the fetus provides pain, itchiness or happiness to the mother alternately.

How to take care of pregnant woman-

Cold liquid and sweet diet is recommended during the first five months of pregnancy. Ghee and rice mixed with goksura (*Tribulus terrestris*) must be given in the sixth month of pregnancy. During the seventh month, consumption of Sarivana (*Desmodium Gangeticum*) medicated with ghee facilitate the proper development of embryo.

If the child is born naturally, Clean the venix caseosa and Cut off the umbilical cord. Apply Bala Taila (Child oil) on head and body of the born baby or herbs like vaca, jatamanasi after cleaning the oral cavity with ghee and rock salt.

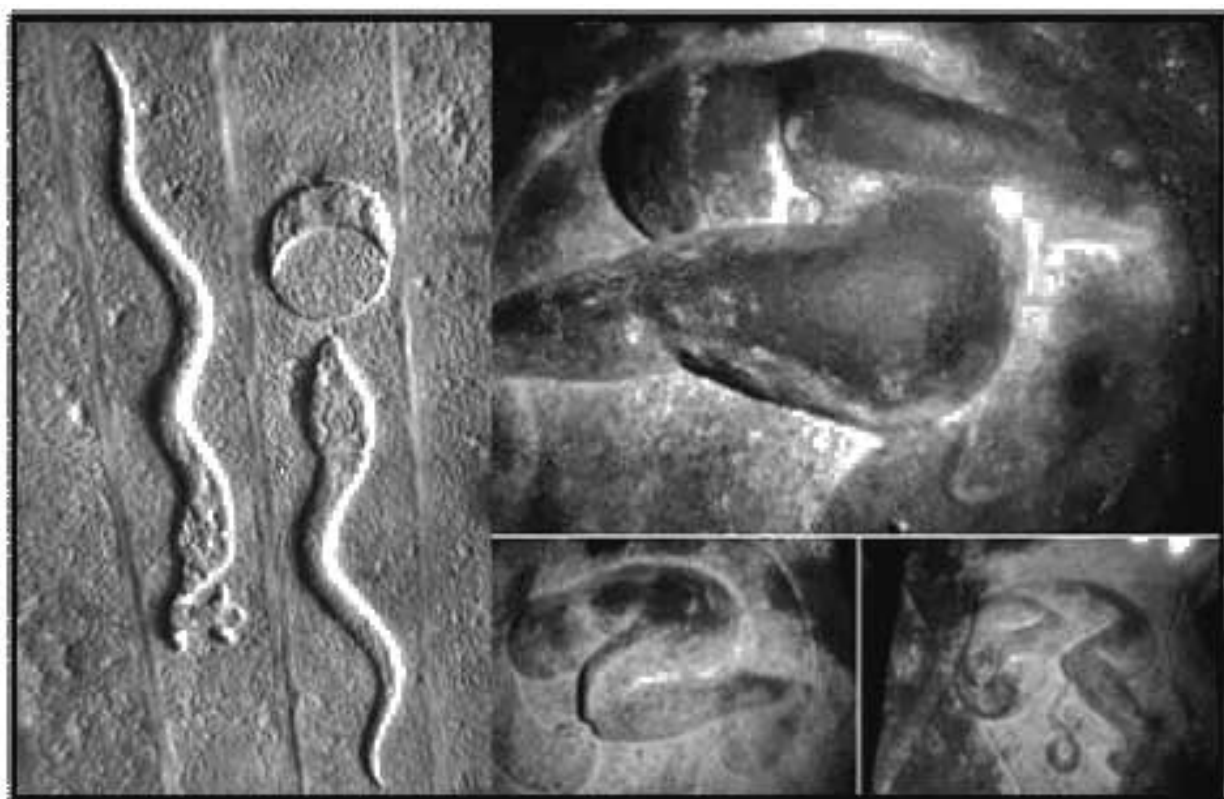
Ayurvedic treatise and medicines for pregnant woman, Garbhini roga (Pregnancy diseases) and causes for abortion/miscarriage are dealt in details as separate chapters in the book.

Bharatiyas believed that (at that time), Rahu and Ketu in the form of snake will engulf moon during "Grahana". Rahu and Ketu are referred as "Chhaya Grahas ". So, eclipsed moon happens because of "Chaya or shadow" was also known to Bharatiya astrologers and astronomers.

Now, let us see the picture below. Initially, it looks the picture is depicting "sun eclipse". But a closer look shows a "fish" with a bud in its mouth. The fish is trying to deposit the "bud" in what seems to be an inverted Kumbh or a Pot.

Ancient Tamils were burying their dead ones in a big Kumbh / Earthen pot in fetal position. So, the inverted pot symbolizes the "womb". A bud being dropped in to a mother's womb by stars (or heaven) means "soul entering the mother's womb from heaven", it actually means "fertilization". There was also a belief that, forefathers will twinkle like "stars" in sky and they will take rebirth as grandchildren. The second picture clearly shows human fertilization of egg. So, the small snake touching the disk is nothing but human egg fertilization.

This kind of set of images (snake, moon, sun, fish, pot, lizard, etc) are sculpted in many temples. Varamurtheeswarar temple is just one of them.



CHAKRAVYUH AND MARTIAL ART FORMS OF BHARAT

Bhārat has been the land of wars so that Dharma should prevail. The senabal or the army was one of the most essential constituents of any state.

The senabal was composed of four divisions (chaturanga)- infantry, cavalry, chariots, and elephants. They were all deployed in the battlefield in a particular formation called vyuha, according to the enemy's strength and army. The different formations:

SARVATOMUKHI DAND VYUHA

This was the formation used by Bhishma on the 1st day of the Kurukshetra war. The head of the formation had six Maharathis (strongest soldiers) arranged in a circular form and the rear end is shaped like a rod (Dand) to keep resourcing the head. Pandavas deployed Vajra Vyuha.

KRAUNCH VYUHA (Heron shaped)

It is a formation in the form of a pattern supposed to resemble a heron with an outstretched beak and spreading wings. Krauncha vyuha, a very offensive formation, was generally attempted to induce fear in the opponent army. Pandava army was arranged in this vyuha on the 2nd day of the Mahabharata war. Drupada was at the head and Kuntibhoja was placed at the eye. The army of the satyaki formed the neck of the Kauncha bird. Bhima and Dhristadhyumna formed both wings of the Vyuha. The sons of Draupadi and Satyaki were to guard the wings.

The Krauncha Vyuha was also arranged by Bhishma. Bhurishrava and Shalya were to guard the wings. Somdatta, Ashwatthama, Kripa, and Kritavarma were positioned at different important places in the formation.

GARUDA VYUHA (eagle shaped)

The Heron Formation (Krauncha Vyuha) was usually met with Garuda or eagle Formation. Eagle is a Natural Enemy of Heron.

On the 2nd day, Bhishma arranged his army in Garuda vyuha to counter the Krauncha vyuha of the Pandavas. Bhishma himself got positioned at its beak. Drona and Kritavarna were the eyes. Kripa and Ashvatthama were at the head. The Trigartas and the Jayadratha with their armies made the neck. Duryodhana, and his brothers, Vinda and Anuvinda made the body of the formation whereas the King of Kashala, Brihadbala formed the tail of the formation.

MAKAR VYUHA (Crocodile formation)

On the 5th day of the war, Bhishma arranged his army in Makarvyuha. Arjuna, Yudhisthira, and Dhristadhyumna decided the SYENA VYUHA (Hawk formation) of their army.

On the 6th day, the Pandavas preferred the Makara Vyuha while the Kauravas chose Krauncha Vyuha. Bhima was coming in and out of the Vyuha of the Kauravas, killing soldiers with his terrible mace.

SYENA VYUHA (Hawk shaped)

It was used on the 5th day. The Syena Vyuha was in the shape of a hawk. The Syena is just any other hawk. In the Mahabharat, Bhimasena got the beak, Shikhandi and Dhrishtadyumna became the eyes, and Satyaki led the division that formed the bird's eyes. Arjuna was on the neck.

MANDALA VYUHA (Galaxy shaped)

It was a defensive circular formation very difficult to penetrate. The Commander at the centre of the formation leads the army, surrounded by several small groups of soldiers, each group led by a Maharathi. On the 7th day of the war, Bhishma made Mandala Vyuha. The Pandavas countered it with Vajra Vyuha.

VAJRA VYUHA (Thunderbolt/diamond shaped)

To counter Mandala Vyuha formation, Pandavas chose Vajra Vyuha on the 7th day. This formation was also used by the Pandavas on the 1st day of the war. In this formation, all maharathis are at the centre of the squared formation, surrounded by infantry from all sides. Drishtadyumna lead the formation followed by the five Pandavas, on the 7th day, though it was Bhima who lead the formation on the first day.

KURMA (Turtle formation)

The Kurmavyuha was formed by Bhishma on the 8th day of the war. TRISHUL VYUHA (Trident formation)

The Pandavas countered it with the Trishula vyuha.

OORMI VYUHA (Ocean formation)

In this formation, the army is arranged on either side like the waves of the sea. In the afternoon of the 8th day, Bhishma changed his formation to Oormi Vyuha.

SRINGANTAKA VYUHA (Horned shaped)

A sringataka is a horn to maximize depth. Dhrishtadyumna chose this as the counter-array for Bhishma's Oormi Vyuha. Arjuna, Bhimasena, and Satyaki fought at the tip of the Sringataka that morning, with Yudhishtira concealed out of sight in the middle, flanked by Nakula and Sahadeva.

SARVATOBHADRA VYUHA (Grand formation) & NAKSHATRAMANDAL VYUHA (constellation shaped)

On the 9th day, Bhishma used Sarvatobhadra Vyuha which meant safety from all sides. Bhishma was in the front, guarded by Kripa, Kritaverma, Shakuni, Jayadratha, Kamboja and sons of Dhritarashtra. Trigartas were also there. The Pandavas formed a Vyuha called Nakshatramandal vyuha in the shape of a constellation. The Pandavas and sons of Draupadi were leading in the front. Shikhandi and Ghatotkacha were holding important positions to defend. Abhimanyu, Kekaya brothers, and Drupada were guarding the rear.

ASURA VYUHA & DEVA VYUHA (demon & godly shaped)

On the 10th day Kauravas army chose Asura Vyuha and the Pandavas countered it by arranging their army in Deva Vyuha. In the lead was Shikhandi with Bhima and Arjuna to protect his sides. Behind him were Abhimanyu and the children of Draupadi. Satyaki and Dhristadyumna were with them. Virata and Drupada had two charges over the rest of the army. Kekaya brothers, Dhristaketu and Gatotkacha

were in their ranks. The Pandavas had the single-pointed aim to kill Bhishma and were successful in the same.

SHAKAT VYUHA (Cart shaped)

On the 11th day for the Kauravas, Drona used this formation. In Shakata vyuha the army is drawn up in a narrow, compact order and its rear expands in extended columns like the back of a cart.

ARDHA CHANDRA/CHANDRAKALA VYUHA (Half crescent formation)

On the 12th day of the war, Arjuna arranged this formation in consultation with the commander of the Pandava army Dhristadhyumna. At the right end was the powerful Bhima. Abimanyu was at the left end. Ghatotkacha and Kokaya brothers were at the left rear. Satyaki and the five sons of Draupadi were at the rear centre. Yudhisthira was placed at the centre of the formation. The armies of Drupada and Virata led from the front guarding Yudhisthira. Neel and Dhristadyumna were placed next to them with Dhristaketu and Shikandi following at the rear end. At the tip was Arjuna on his Chariot with Krishna.

CHAKRA VYUHA (wheel shaped)

The Chakravyuha, is a multi-folding defensive formation that looks like a disc (chakra, चक्र) when viewed from above.

The number of soldiers to be deployed and the size of the Chakravyuha is calculated as per the enemy's resistance. First, the foremost soldiers come on either side of the enemy to be captured, engage him briefly and then let him move ahead inside the circle. If killed, their place is taken up by the next soldiers on either side, who again engage the enemy briefly and then let him move. In this way, a number of soldiers keep on letting the the enemy pass, while they, themselves keep on moving in a circular pattern. By the time the enemy encounters the innermost soldiers, he, oblivious of the design, is captured within seven tiers of soldier's formation surrounding him from all sides. The last soldiers of the formation give the signal of completing the Chakravyuha. On the signal, every soldier who so far has been facing outwards turns inwards to face the enemy. It is only then that the captured person realizes his captivity. The Chakravyuha keeps on moving in a spherical order and can easily lead the component away in captivity as well.

It is the most renowned among the different formations used in the Mahabharata war, because it was the turning point in the war. On the 13th day, Drona made the Chakravyuha with 6 layers under the guard of 6 Maharathis – Karna, Drona, Ashwatthama, Dushasana, Shalya, and Kripacharya. Duryodhana was positioned at the center with different warriors at the various layers. Jayadratha and his army were at the gate of this vyuha.

SUCHIMUKHA VYUHA (Needle shaped)

On the 14th day of the war, Drona created a complex triple-layered formation called Chakrashatak Vyuh (cartwheel shaped). First was the Chakravyuha where he was standing guard himself. That Vyuh opened into the second, Sakatavyuha, the charge of which was in the hands of Duramarshana, the brave brother of Duryodhana. The third was the Suchimukha Vyuh with Karna, Bhurishrava, Ashvatthama, Shalya, Vrishasena & Kripa to guard it and Jayadratha was at the very end of the Vyuh.

PADMA VYUHA (Lotus shaped)

It was formed on the 15th day. The Padma Vyuha is often confused with the Chakravyuha. There is a considerable difference between these formations though there are many similarities. Similar to Chakra-Vyuha, this is also a multi-folding defensive formation in the form of a blooming lotus. Again only a handful of warriors knew the technique of breaching this formation like Chakravyuh.

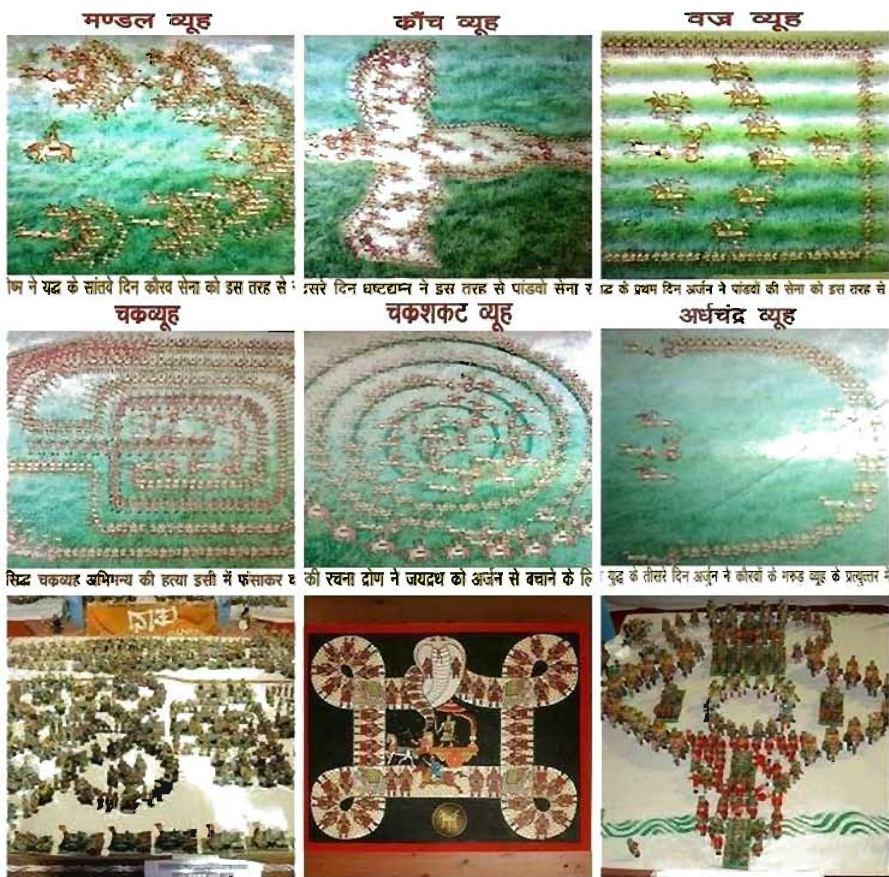
SURYA VYUH (Sun or round shaped) & MAHISH VYUH(Bull shaped)

Surya vyuh was used by Kauravas on the 16th day while Mahish vyuh was deployed by Arjun.

MALA VYUHA (Garland shaped)

Mala Vyuha or a 'garland formation' which was oval shaped was another Vyuha.

'The Advanced Strategic Battle Formations Vyuhas, used in Kurukshetra War (Mahabharata)



KNOW THE MARTIAL ART FORMS PRACTICED SINCE ANCIENT TIMES (SELF-DEFENCE SYSTEM):

KALARIPAYATTU

The term 'Kalari' refers to martial art and the arena where it is taught and practiced, while 'payattu' means combat or practice.

Parshurama and the saptarishi Agastya are regarded as the founders of kalaripayattu, the oldest martial art in the world. Parshurama was a master of shastravidya, or the art of weaponry, as taught to him by Shiva. As such, he developed northern kalaripayattu, or vadakkan kalari, with more emphasis on weapons than striking and grappling. Southern kalaripayattu was developed by Agastya and focuses more on weaponless combat. Kalaripayattu is known as the 'mother of all martial arts'.

Vadakkan or Northern style – The Vadakkan Kalarippayattu is predominantly practiced in the Malabar region of Kerala. The Vadakkan style emphasizes more on graceful body movement and the weaponry.

Thekken or Southern Style- The Thekken Kalarippayattu or Adi Murai is practiced mainly in the Travancore region, this style involves more free armed techniques & powerful movements.

Parshuram established 42 Kalaris and taught twenty-one masters of these Kalaris to protect the land of Kerala.

The training begins with an oil massage called Uzhichil, of the entire body until it is agile and supple. Feats like chattom (jumping), ottam (running) and marichil (somersault) are also integral parts of the art form. There are also lessons in using weapons like swords, daggers, spears, maces, bows and arrows.

The practice of Kalaripayattu is divided mainly into four stages.

- Maithari – Body Control Exercises
- Kolthari – Practise of wooden weapons
- Ankathari- Practice of metal weapons
- Verumkai – Bare hand fighting techniques

GATAKA

Sikh martial art 'Gatka', based on stick-fight, developed as self-defensive style in Punjab and is an integral part of Sikh Shastar Vidiya (skills to use weapons). The sixth Guru, Sri Guru Hargobind Ji had promoted the flamboyant techniques of Shastra Vidya (Sikh Martial Art), among the Sikhs who passed on these skills through generations. The tenth Guru, Sri Guru Gobind Singh Ji was known as the greatest master of weaponry of his time. Visiting the Hola Mohalla festivities in Anandpur in March, Gatka can be seen in all its splendor or some of the top Gatka akharas, this Sikh warrior martial art form can be seen in action.

Guru Gobind Singh, the 10th Sikh spiritual leader, established the Sikh warrior community Khalsa in 1699. Khalsa Sikhs were given the name Singh, which means "lion," and vowed to fight against all atrocities. And so Gatka, the Sikhs' ancestral fighting technique, became a sacred obligation for all Khalsa Sikhs.

The stick used in Gatka is made of wood and is usually 91–107 cm (36–42 in) long, with a thickness of around 12.7 mm (0.50 in). It comes with a fitted leather hilt, 15–18 cm (5.9–7.1 in) and is often decorated with Punjabi-style multi-coloured threads.

The other weapon used in the sport is a shield, natively known as phari. It is round in shape, measuring 23 by 23 centimetres (9.1 in × 9.1 in), and is made of dry leather. It is filled with either cotton or dry grass to protect the hand of player in case of full contact hit by an opponent. Guru Hargobind Sahib Ji

wore two swords of Miri (Temporal Power) and Piri (Spiritual Power) after martyrdom of Guru Arjan Dev Ji. He never allowed the temporal aspect to overpower spiritual aspect of his life. Guru Hargobind Sahib Ji transformed the Sikh saints into saint-soldiers.

SILAMBAM

Silambam is an ancient weapon-based martial art that emerged in Tamilakam, which is now Tamil Nadu. Silam stands for a 'hill' and bam stands for 'bamboo' which is the main weapon used in this form of martial art. The art, which is also known as "Silambattam," combines aspects of martial arts, yoga, and Ayurveda, and is considered to be one of the oldest martial arts in the world.

It was Agasthiar who invented this art of Silambam. So, it is closely related to Kalaripayattu. Later on the Chera, Chozha and Pandiya kings introduced this art in their warfare and made it compulsory for all the soldiers in the five wings of their military.

It is believed that sage Agastya was traveling to Vellimalai and on the way he met an old man who is said to be Murugan in disguise, and from him he learnt about Kundalini yoga and how to focus prana through the channels of the body known as nadi. He wrote down all the teachings on palm leaf manuscripts of which Kampu sutra or staff classic is an integral part, where advance fighting theories are laid down in verse. This knowledge was passed on to other sages in Agastya muni's akhara (or gymnasium).

Foot movement is the key element to silambam and also kutta varisai (empty hand version). There are sixteen movements needed to master the movement of the foot to keep pace with the movement of the stick. The main goal of the training is to defend the user against several armed opposition.

Weapons Used in Silambam are:

- Bamboo staff- It is the main weapon and the length of the bamboo staff depends on the height of the practitioner.
- Maru- a thrusting weapon which is made from horns of deer.
- Aruva (sickle), Savuku (a whip), Vaal (curved sword), Kuttu Katai (spiked knuckle duster), Katti (knife), Sedikuchi (cudgel or short stick).

LATHI KHELA

Lathi Khela is a word combining Lathi, which means a stick, and Khela, meaning game. In the West Bengal region, Lathi Khela is divided roughly into two, the stick rotating technique called "Banethi" and Fighting technique called "Halwa".

In Banethi, the player holds the middle of the stick with one hand (or both hands) and rotates it fluently in high speed with various techniques.

In Halwa, he holds one end of the stick with both hands (or one hand) and wields it with full strength. The sticks used here are often bamboo or rattan. The lathi is made from bamboo and is ringed with iron. The length of the stick can vary between 2 to 2.5 meters long. The shorter blades are known as Bari and they look like batons. Just like any other martial art, footwork also matters in this form. The coordination between the feet and the hands is of utmost importance. The wrists are trained in such a manner that even if one moves slow or fast while striking or defending, the grip will never be lost on the lathi. The lathi is moved in circles with the grip being in the middle in order to defend. To strike, either the lower end is grabbed with the upper end of the lathi being the part used to hit the opponent.

Else, the lathi is held with both hands and the edges are used to strike. The person who practices this form is known as a lathia.

MARDANI KHEL and BOTHATI

Mardani khel is an armed Bharatiya martial art from Maharashtra. It is particularly known for its use of the uniquely Bharatiya patta (sword) and vita (corded lance). Bothati is a Bharatiya martial art involving fighting with spears on horseback. A hilly region of Maharashtra, characterized by valleys and caves, the inhabitants became expert horsemen who favoured light armour and highly mobile cavalry units during war.

Different weapons used in this form of combat are:

- Pata: Sword with a hollow handle acting as a handguard
- Talwar: Curved single-edge sword
- Bhala: Short spear with a broad head, used by infantry
- Barcha: Heavy spear made entirely of iron and wielded by infantry
- Vita : Lance with a length of cord tying the weapon to the wielder's hand
- Bothati: Lance used from horseback
- Lathi: Stick or staff
- Dhala: Circular shield
- Madhu: A thrusting weapon inspired by deer's horns
- Kulhadi : axe
- Danda: Battle-axe
- Khukuri: Inward-curving knife
- Danush: Bow and arrow
- Katar: Push-dagger with a H-shaped handle
- Bagh nakh : Iron claw
- Bichuwa / Bichawa: Scorpion knife

MUSHTI YUDDH

Mushti Yuddha in Sanskrit literally translates to 'fist combat'.

Mushti is mentioned in the Vedas as well as the Ramayana and Mahabharata. From the time of Rudraman of the Satraps to the army of Ranjit Singh, Mushti yuddh(boxing) was considered a prime skill for a warrior. It is an unarmed martial art discipline similar to boxing that originated in Varanasi, one of Bharat's oldest cities.

The Mushti Yuddha martial art is called by other names in South Asia eg. Muay Thai in Thailand, Muay Lao in Laos, Pradal Serey in Cambodia, and Lethwei in Myanmar.

INBUAN WRESTLING

Inbuan wrestling is said to have originated in 1750 and played as a sport after the Mizo tribes migrated from Burma, specifically in the village of Dungleland. This form of wrestling is held in a 16-foot ring

of level ground and prohibits kicking or bending the knees. Players must lift their opponent off his feet by means of a cloth belt worn around the waist.

MALLA YUDDHA

Mallayuddha literally "wrestling combat", is the martial art of classical Bharatiya wrestling. Mallayuddha is described in the Bharatiya ancient epics as the fighting style of warriors such as Bhima in Mahabharat. Incorporating techniques used in grappling, boxing, wrestling, and some martial arts, it was a highly variable and very entertaining combat sport. Kicks, punches, knee and elbow blows are among the tactics used.

The battles of this art form have been classified into four categories, each of which is named after a Hindu God who excelled in that specific form of art.

- Jambuvanti, which refers to the practice of locking and holding an opponent till he surrenders.
- Hanumanti, which stands for technical superiority.
- Bhimaseni, which focuses on brute strength.
- Jarasandhi, which focuses on a limb and joint breaking.

The Guru Hanuman Akhara is one of the most important centers for the training of champions in this discipline and is named by the great international champion and coach "Guru" Vijay Pal, 1901 known as Guru Hanuman.

HUYEN LANGLON

It is a Bharatiya martial art from Manipur. It is composed of two components Thangta & Sarit Sarak. Thang-Ta is an ancient Manipuri martial technique founded by the Meitei from the Manipur military context. Thang-Ta was also known as Huyen Lallong, which means sword and spear art. In this art form when unarmed combat is used or no weapon is involved it is called Sarit Sarak.

Manipur's war-torn surroundings influenced the art. Thang - ta involves using a sword or spear against one or more opponents. Sarit - Sarak is the technique of fighting against armed or unarmed opponents, but on many occasions, there is a combined approach to the training of these martial arts.

Thang is a sword, and a Ta is a spear.

Thang - ta is practiced in three different ways. The first way is absolutely ritual in nature, related to the tantric practices. The second way consists of a spectacular performance involving sword and spear dances. These dances can be converted into actual fighting practices. The third way is the actual fighting technique. The spear can be used in its non-missile form while in close or thrown from afar. Other weapons used include the shield and axe.

The most basic stance is known as the "lion's posture" which involves standing with one's feet at a forty-five-degree angle, leaning forward with the toes and chin in a straight line, thus, forming a straight line at the back. Rather than a fight to death, the duel is often won by the opponent who draws the first blood.

SQAY

The history of "SQAY" can be traced in early days of Kashmir history, when man learnt to protect himself from wild animals, individually or collectively. The Shaivite snake-worshipping Naga people are said to have created the art prior to the Indo-Aryan invasions, and it was later patronised by kings.

Armed sqay makes use of a curved single-edge sword paired with a shield, or one sword in each hand. Unarmed techniques incorporate kicks, punches, locks and chops. Sqay have different techniques like single sword, double sword, free hand techniques and lessons of both free hand and sword.

The sword (tora or tura) is made of synthetic fibre covered in leather. Depending on age group, it measures 2-2.6 feet long. The sword is paired with a shield (bargula) measuring 9-10 inches in diameter, also covered in leather. The official uniform is blue, sometimes with red or yellow piping, consisting of trousers and a cross-front jacket with a belt around the waist.

Before 4012 BC, Sqay skills were used by Kashmiris for self-protection as well as for hunting animals for food. But after 3905 BC, King Diya Dev trained his soldiers in this art to defend Kashmir against invaders and gave strict orders on its implementation to soldiers. In 3889 BC, a storm known as Tophani Nuh A.S had destroyed the whole nation including Kashmir. The few who survived this calamity took refuge in the Kohistan forests of Kashmir and used this art, both individually and collectively, for protection and hunting animals for food. After the storm subsided, Kashmir was rebuilt in the period of Kashyap Rishi and saw the emergence of a democratic society.

King Puran Karan of Kashmir reintroduced compulsory training of Sqay Martial Art for his soldiers. Kashmir saw many wars and Kashmiri soldiers used their Sqay skills to defend the kingdom of Kashmir.

PAIKA AKHADA

The word "Paika" is derived from Sanskrit's "padatika (footman)" means infantry, and Akhada means training arena or school. Paika Akhada is a traditional martial art that originated in the ancient Kalinga kingdom of Odisha, Bharat. It's still practiced in the state capital of Bhubaneswar, Khurda, and Puri. The Paika Akhada was very much known to all the countries of South-East Asia due to their valour, bravery and feat. Odisha also displayed its military supremacy due to the Paika Akhada. During the Gajapati rule, the Paika Akhada became more prominent and paramount.

Paika's military system consists of three classes:

Pahari with swords and shields, Banua leading the army during the expedition, and Dhenkiya, the archer of the bow and arrow.

The whole troops were led by the specific Kshatriya group Khandayat during the march. The king gave them various privileges, such as tax exemptions and subsidies.

The weapon used in the existing Paika start with a bamboo (or cane) stick for practice, a straight sword called khanda, a straight sword with a guard that covers the middle of the forearm to the fist called dand patta, its bamboo mock sword, a Tarwar curved sword and its 3m giant version, a Mudgal which is a huge weight bar combined with chain, and so on. Paika Rebellion in 1817 can be reviewed as the true opening of the Independence War. The rebels formed by volunteers, including Paika, suddenly arose at once on April 1, 1817, just 13 years after the fall of the Khurda fort.

The Paika's army, led by the last Bhoi commander-chief Baxi Jagbandhu, was the main force to invade the center of the city of Khurda, expelled the British army and succeeded to recapture Khurda fort on the 4th April.

KATHI SAMU

Kathi Samu, rooted in Bharatiya heritage and recognized for its precision and discipline, has been practised for centuries and continues to thrive today. It is famous martial art form of Andhra Pradesh. Kathi Samu, also known as “Kathi Samu Kalari,” has profound roots in Bharatiya history. The phrase “Kathi Samu” approximately translates to “sword and shield” in Sanskrit, indicating the game’s significant concentration on armed conflict. Kathi Samu’s emphasis on precision and timing makes it an excellent self-defence method that promotes physical fitness, mental conditioning, and self-discipline. Students start with fundamental sword techniques. Practitioners learn to block and parry attacks efficiently with various shields, including the classic “paricha” shield. Also, strikes, joint locks, and throws can be used without weapons. The place where Kathi Samu is performed is known as 'garidi'. Stick fight known as 'vairi' has an important role in Kothi Samu. 'Gareja' in which a participant holds four swords, two in each hand and 'Dal Farri Khadga' are other important aspects of sword skills.

BANDESH

Bandesh is one of the ancient Bharatiya Martial Arts forms. It is basically a collection of martial techniques mainly used to disarm and defeat an armed opponent without taking his life. Bandesh can also be regarded as an empty-handed combat technique. Different types of lock holds are utilised against different kinds of weapons like daggers, swords, long staff etc. In the competition of this ancient martial art, the conqueror is the one who takes the weapon from the other. There are six different stages namely, Pavithra (footwork), Rokh (blocking), Lapet (Twisting), Fekan (Throw), Cheen (Snatching) and Bandesh (Lock hold). Nowadays, it is mostly practiced in Andhra Pradesh.

MALLA KHAMB

The word ‘Mallakhamb’ comes from coalescing two words- ‘malla’ meaning wrestler and ‘khamb’ meaning pole. One of the earliest mentions of Mallakhamb is found in the “Manasollasa,” a Sanskrit encyclopedia written by King Someshvara III in the 12th century. This text provides detailed instructions on how Mallakhamb was practiced and its significance in physical fitness and well-being. It was used to perform aerial yoga postures on a wooden pole, a cane or simply a rope. Traditionally, a wooden pole is used to perform yoga postures, which is made of Sheesham or Rosewood and smoothened by castor oil. The height of the pole ranging from 2.6 metres above the ground. In cane Mallakhamb the pole is shorter in length and is left hanging from a hook. In Rope Mallakhamb, the performer is supposed to exercise the postures on a 5.5 metres long rope suspended from the top. The performer is not allowed to tie a knot in the rope.

Many times during wars, soldiers might need to climb huge walls of the enemy’s palace and Mallakhamb perfectly serves the purpose. The rigorous exercises performed on the wooden pole also helped them develop exceptional balance and coordination, qualities essential for success in wrestling. Pune and nearby cities in Maharashtra have been the centre of this martial art since the Peshwas reinforced its practice and performance.

PARI KHAND

Pari-khanda is a martial art whose name comes from the weapons - pari (sword) and khanda (shield). It originated in the regions of Saraikela and Singhbhum in Jharkhand and was established as a form of physical training for the soldiers.

Pari-khanda training begins with the practice of chaalis, or steps, which involve the movements of birds and animals such as the haathi chaali (the elephant movement) and baagh chaali (tiger movement). These are followed by upalayas or combined movements inspired by movements occurring in daily life, such as gutti-koora, lifting a pebble with one's toes; gobar-goola, mixing cowdung with water; kula-pachra, husking paddy; bota-cheera, splitting a bamboo; and finally the khel, consisting of ten movements. Pari-khanda is generally performed early in the morning and on the banks of the Kharkai river, on a stretch of raised land, known as Bhairavsal.

KIRIP SALDU

It is an indigenous form of wrestling quite popular with the Nicobarese tribe. Wrestlers grip each other from behind with their hands, and this grip is not to be slackened till the very end of the competition. The wrestler, using various parts of the body, including the leg, tries to thrust the opponent to the ground.

In Saldu, another wrestling style, the field is divided by a line in the centre, and there are no boundary lines.

CHEIBI GAD-GA

The name "cheibi" refers to a stick that is 2 to 5 feet long, although a shield has a diameter of 1 metre. Originally, the fighting instrument of this martial art constituted a sword and a shield.

Currently, the modified version of these equipments is used which comprise a stick enveloped in soft leather and a shield, also made of leather.

THODA

This martial art form of Himachal Pradesh, relies on one's archery prowess, dating back to the days of the Mahabharata, when bows and arrows were used in the epic battles, between the Pandavas and the Kauravas. This martial art has its origin in Kulu. Thoda, the name is derived from the round piece of wood fixed to the head of the arrow. Wooden bows measuring 1.5m to 2m, to suit the height of the archer and wooden arrows in proportion to the length of the bow, are prepared by skilled and traditional artisans.

The archers are divided into parties, just before the competition takes place. One team is called Saathi, and the other Pashi. It is believed that Pashis and Saathis, are descendants of the Pandavas and Kauravas. The members participating in the thoda are collectively known as Khashiya, and belong to the Thakur community of the region. Thoda derives its name from thod, meaning a raised platform, upon which the Khashiya would do Yagya before combat. the martial art form comprises two teams – known as the saathi and pashi, where the former represents Kauravas (saath referring to the sixty) and the latter Pandavas (pashi is derived from paanch Pandavas). The pashi group forms a chakravyuh, a military formation in the form of a circle, surrounding its opponents the saathis who have to attempt to break through this formation.

AKI KITI

Akikiti aka kick-fighting is a form that originates from the tribes of Nagaland.

Akikiti is a form of martial art where soles of the feet are their only weapon and defense.

VARMA KALAI

Varma Kalai, a distinct branch of ancient Siddha System of Medicine, involves manipulation of energy points on the body to heal, and/or revive from injury. The stasis of this vital energy in certain points are called varmam points (varma pulligal). They are 108 in number. There are two branches in varmam

1. Therapeutic manipulation
2. Defense manipulation

The defence manipulation, is more of pressure point striking, for defense, to paralyze or bring about an injury. Some are fatal, some can be treated by varmam therapy.

Chinese kings used to invite Sanskrit scholars to translate the Vedic knowledge into Chinese, namely Kumarjeev, Dharampal, Buddhabhadra and Bodhidharma. Bharatiya Buddhist priest named Bodhidharma (Tamo in Chinese), was the founder of Kung fu who traveled to China to see the emperor. At that time, the emperor had started local Buddhist monks to translate texts from Sanskrit to Chinese. The intent was to allow the general populace the ability to practice this religion. Bodhidharma who lived in Bharat (Tamilnadu) moved to China & reached a place which is today called Shaolin & saw the people over there weak who were attacked by Red turban bandits. He taught them ancient ayurveda & Kalaripayattu moves which is known as Kung-Fu today. He taught them 'Dhyan' as well as Martial Arts. This Dhyan technique of meditation evolved into 'Chan,' and later as Zen in Japan.

SACRED MOUNTAINS

The sacred or holy Mountains are the abode of the gods and hold religious importance for Hindus. The famous mountains known since ancient times are:

HIMALAYAS

Himalayas are the king of mountains, father-in-law of Shiv. Himalaya is considered as the Himavan god, the father of Goddess Parvati. There are too many holy rivers like Ganga that emerge from the Himalayan glaciers. Pilgrimages like Badrinath, Kedarnath, Gangotri, Yamunotri are situated in the Himalayan hill range. The Shivalik hill range of the Himalayas contains many sacred temples. Saints often choose the Himalayan region for spiritual meditation practices. Its pure, calm and natural environment is suitable for meditation. The Himalayan range also contains rare and precious herbs.

In the epic Ramayana, Hanuman brought Sanjeevani booti from the Himalayas to heal the wounded Lakshman during the war with Ravana and his army. Himalayas range also contains the world's highest peak, Mount Everest.

MAHENDRA PARVAT

It is the abode of sage Parashuram, is a sacred mountain in Odisha, part of the Eastern Ghats. Parshurama, a chiranjeevi (long-lived) and the sixth avatar of Vishnu, meditated and performed tapasya (penance) on Mahendragiri. It's one of the "Kula Parvatas" (sacred mountains) along with Malaya, Sahyadri, Parijatra, Shuktiman, Vindhya, and Malyavaan.

MALAY PARVAT

The hill where Manu's boat stopped after the great flood. These mountains are believed to have formed the southernmost part (southwards starting from the Mangalore region) of the Western Ghats, modern day Kerala, while the Northern part of the same was called the Sahya Mountains. The peaks of these Malaya mountains were said to be higher than those of the Sahya Mountains. Sangam Literature calls these mountains Pothigai.

VINDHYA PARVAT

It has the great story of sage Agastya associated with it. Once it was growing in size challenging the divine Mount Meru. It grew so big in size that it blocked the Sun. At the request of gods, sage Agastya while going South, asked the mountain to stop growing and let him pass, until he reaches south. Vindhya honored the sage, stopped growing and waited until he returns, but Agastya never returned and thus Sun was obliged.

MAINAK PARVAT

It finds mention in Sundar Kand of Ramayana where it offers its help to Hanuman and requests him to take rest for some time. But Hanumaji replied that he can't take rest till he finds out Sita. To honor the request, he just touches the mountain with his feet as he jumps over it.

Mainak was son of Himalaya and was once a mobile mountain but its wings were chopped and Vayu submerged it into the ocean.

MERU PARVAT

The mountain of gods is said to be of golden color. Mount Meru, also called Sumeru or Mahameru, is considered the axis of the world and the center of all universes, both physical and spiritual. It's believed to be the home of gods and goddesses, with celestial kingdoms located on or near it. Many Hindu temples and Buddhist structures are built as symbolic representations of Mount Meru, with the roof tower crowning a shrine representing the mountain. It is a mountain located in the Garhwal Himalayas, in the state of Uttarakhand. Mount Meru is also mentioned in scriptures of other, external religions to Bharat, such as Taoism—which was influenced, itself, by the arrival of Buddhism in China.

Many Hindu, Jain and Buddhist temples have been built as symbolic representations of Mount Meru. The "Sumeru Throne" style is a common feature of Chinese pagodas. The highest point (the finial bud) on the pyatthat, a Burmese-style multi-tiered roof, represents Mount Meru. Meru is also the name of the central bead in a *mālā*, which is used for chanting mantras, generally made of Rudraksh containing 108 beads.

KAILASH PARVAT

Mount Kailash is considered the physical embodiment of Mount Meru by Hindus and Buddhists. Mt. Kailash is the striking peak standing in the south-west corner of Tibet in the Himalayan Mountains. Made up of black rock, Mt Kailash is a diamond shaped mountain. Mount Kailash is known as one of the most sacred mountains and has become an important pilgrim for four faiths : Buddhists, Jains, Hindus and Tibetan religion of Bon. The Hindus and Buddhists pilgrims do Parikrama in a clockwise direction but the Jain and Bon followers walk around counterclockwise.

According to Hindu legends, Shiva resides at the pinnacle of this famous mountain. Buddhists trust that Kailash is the home of the Buddha Demchok who symbolizes supreme harmony.

Buddhism in Tibet known as the religion “Bon” believes Mount Kailash as the abode of the sky goddess Sipaimen.

In Jainism, Kailash is known as Mount Ashtapada and is the place where the creator of their faith, Rishabhadeva, attained freedom from rebirth.

It is also the source of four major rivers—Indus, Sutlej, Brahmaputra, and Karnali.

Unlike surrounding peaks composed of sedimentary rock, Mount Kailash is made of black rock, a rare occurrence in the region. Mount Kailash is known for its magnetic anomalies, where compass needles do not point towards the North-South direction.

Mount Kailash is considered in many sects of Hinduism as heaven, the ultimate destination of souls and the holy center of the world. According to the narrative in the Puranas, Mount Kailash’s four faces are made of crystal, ruby, gold, and lapis lazuli.

Tibetan Buddhists call it "Kangri Rinpoche," meaning "Precious Snow Mountain" while Bon tradition refers to it by names like "Water’s Flower" and "Nine Stacked Swastikas Mountain." It is located near lake Mansarovar and lake Rakshastal. In the Ramayana, Vishvamisra tells Shri Ram that Brahma created a lake out of his consciousness (Manas), hence the name Manas Sarovar (lake of consciousness)

and a river was born out of that lake called Sarayu, which flowed through the kingdom of Ayodhya. Unlike the freshwater Mansarovar lake, Ravan Tal contains saltwater.

This high salt content forms a harsh environment, limiting plant and animal life. Rakshas Tal” translates to “Lake of the Demon,” reflecting its association with negative energies and evil forces. It starkly contrasts the sacredness and purity attributed to nearby Lake Mansarovar.

Mansarovar is placid even when the weather turns windy while the Rakshas Tal stays turbulent even without any external disturbance.

Legend also has it that when Ravana was on his way to visit Shiva on Kailasha, he halted and took a dip in Lake Rakshastal. He proceeded further and spotted Parvati, near Gauri Kund, for the first time. He was smitten by her beauty and lost his virtue. This is the reason people never take a dip in this lake. Gauri Kund is the place where Parvati created Ganesha from the saffron- sandalwood paste prepared for her body.

MANDAR PARVAT

The hill was used in the famous churning of the milky ocean. Mandar Hill, a panoramic landscape of 800 ft high granite hill situated 50 KM from Bhagalpur city, is associated with legendary Amrit Manthan or churning of nectar from the sea. The hill was used by Gods to churn the ocean for procuring nectar. Vasuki Nag, a holy snake, offered himself to serve as the rope, has it’s impression of coiling around it. Puranas also hold that while covering the Universe in three steps as Vamana Avatar, Vishnu put his one step at Vishnupad Hill and the other at Mandar Hill.

TIRUMALA PARVAT

Tirumala mountain is situated in Tirumala town of Chittoor district in the state of Andhra Pradesh, Bharat. This hill is famous for the temple of Venkateshwar swami, also known as Balaji and Srinivasa. The Venkateshwar swami is a form of the god Vishnu. Tirumala hill is also known as Sathagiri, as it contains seven peaks called Sheshadri, Neeladri, Garudadri, Anjanadri, Vrushabhadri, Narayanadri, and Venkatadri. Tirupati Balaji is one of the richest temples in Bharat.

GOVARDHAN PARVAT

Govardhan mountain is another sacred mountain in the Hindu religion. It is related to the god Shri Krishna. It is situated in the district of Mathura, Uttar Pradesh, Bharat. Shri Krishna had lifted the Govardhan mountain on his little finger to save the people and animals of Gokul from the heavy rain caused by the Indra. Govardhan parik Shri Ram is considered very sacred and it is believed that this mountain is reducing in size and will exist only till the end of Kaliyug.

VINDHYACHAL PARVAT

Vindhayachal mountain is dedicated to Vindhyavasani Devi, who is a divine form of goddess Durga. She is the sibling of God Shri Krishna. This mountain is the abode of the goddess. The goddess fulfills all the wishes of devotees and gives blessings. This mountain range is found in the states of Madhya Pradesh, Gujarat, Bihar, Uttar Pradesh, and Chattisgarh of Bharat.

NANDADEVI PARVAT

Nandadevi is a sacred mountain. It is situated in the Chamoli district of Uttarakhand, Bharat. It is a part of the Garhwal Himalaya range. Nandadevi is the second highest mountain in Bharat after Kanchanjunga. This mountain is the abode of the goddess Nanda, who is an incarnation of goddess Durga. Nandadevi temple in Almora city is a famous pilgrim. Nandadevi National Park is also a famous and beautiful site. The snow-covered mountain view seems very beautiful and a perfect place for tourists.

The Aravalli on the western side of Bharat are the world's oldest mountains.

DASRAJNA YUDDHA - THE BATTLE OF TEN KINGS

The first known battle mentioned in 7th Mandala of Rigved was fought between Bharatas led by king Sudas & ten tribes. Vishwamitra was the Purohit of Bharatas clan of King Sudas but the king appointed Vasishtha as the Purohit in place of Vishwamitra. To avenge this instance, Rishi Vishwamitra brought kings of 10 tribes together against King Sudas & Rishi Vasishtha. Though Tristus were a sub-group of Puru clan, they were led by King Sudas.

The 10 clans were: Puru, Yadu, Turvasu, Anu, Druhyu, Alina, Paktha, Bhalanas, Vishanin, Siva. Puru, Yadu, Turvasu, Anu, Druhya clans together were called Panchjanya.

King Sudas with his Bharatas clan, along with the Tristus won the battle, securing their dominance over the other Vedic tribes. Rishi Vasishtha and Sudas's strategy of attacking first, along with God Indra's blessings helped the Bharatas to be victorious. The battle was fought on the banks of River Prushni(Ravi). Sudas celebrated his victory with the Ashvamedharitual to commemorate the establishment of his kingdom called Bharat after his clan.

The clans that survived moved towards West (Puru's clan couldn't survive, kings of Anu & Druhya clans were killed, Alina clan went towards Greece).

MAHAJANAPADA

Mahajanapadas were ancient Bharatiya kingdoms or republics that emerged around the 6th century BCE after the consolidation of the various janapadas established in the later vedic period.



Located mostly across the Indo-Gangetic plains and northern Deccan region, these Janapadas evolved into 16 major states. Each of these has its own distinct culture, language, and customs. They were known for their advanced systems of administration, trade, and warfare. It was also the increased use of iron tools and weaponry that allowed tiny nations to coalesce into the Mahajanapadas monarchy.

Mahajanapadas	16 Mahajanapadas Capital	Significance
Anga	Champa	Anga Mahajanapada is mentioned in both the Mahabharata and the Atharva Veda. Under the reign of Bimbisara, the Magadha Empire captured it. It is now Bihar and West Bengal. Champa, the state capital, was situated at the confluence of the Ganga and Champa rivers. Merchants travelled from here to Suvarnabhumi(South East Asia).
Magadha	Rajagriha	Magadha has been the most important region of Bharat and is mentioned in the Atharva Veda. It was separated from Anga in modern-day Bihar by the Champa River. Magadha later became a Jain centre, and Rajagriha was the site of the first Buddhist Council.
Kashi	Kashi	The location was Varanasi. This city was called after the rivers Varuna and Asi, according to the Matsya Purana.
Vatsa	Kaushambi	Vatsa is also known as Vamsa. Located on the banks of the Yamuna. The Mahajanapada was ruled by a monarchical system. The capital was Kausambi/Kaushambi (which was at the confluence of the Ganga and Yamuna). This was a significant commercial centre. Trade and commerce prospered throughout the sixth century. The emperor Udayana adopted Buddhism as the state religion after Buddha's ascent.
Kosala	Shravasti (northern) Kushavati (southern)	It was in the modern Awadh region of Uttar Pradesh. The region also included Ayodhya, an important city associated with the Ramayana. The tribal republican area of Kapilavastu's Sakyas is also included in Kosala.
Shurasena	Mathura	This place is the centre of Shri Krishna worship. Its capital, Mathura, is situated on the Yamuna's banks.
Panchala	Ahichchhatra and Kampilya	The northern Panchala capital was Ahichchhatra (modern Bareilly), and the southern Panchala capital was Kampilya (modern Farrukhabad). The famous city of Kannauj was located in the Kingdom of Panchala.
Kuru	Indraprastha	Kuru Mahajanapada was most likely born in the Kurukshetra area. It switched to a Republican administration. A fight between two branches of the ruling Kuru clan is described in the Mahabharata, an epic poem.
Matsya	Viratanagara	It was located between the west of the Panchalas and to the south of the Kurus. The capital of Matsya was Viratanagara (modern Bairat). Jaipur, Alwar, and Bharatpur all in the Rajasthan come under Matsya area. Virata is the founder.
Chedi	Sothivathi	Chedi's reference is in the Rigveda. The capital was Sothivati/Shuktimati. It is presently in the Bundelkhand region (Central Bharat). The King was Shishupala.
Avanti	Ujjaini or Mahishmati	Avanti was the birthplace of Buddhism. Ujjaini (northern region) and Mahishmati (southern part) were the capitals of Avanti. Pradyota was a strong ruler.
Gandhara	Taxila	The capital of Gandhar was Taxila (Takshashila). Gandhara is mentioned in the Atharva Veda. The Persians conquered Gandhara in the late sixth century BCE.
Kamboja	Poonch	Kamboja's capital was Poonch. It is found in the Hindukush and Kashmir today. The horse breed of Kambojas was remarkable.
Asmara	Postal/Podana	It was on the Godavari's banks. It was Dakshinapatha's only Mahajanapada, located south of the Vindhya Range.

Vajji	Vaishali	The Vajjis dominated the Tirhut area of the state north of the Ganga. The Lichchhavis (Capital–Vaishali), Videhas (Capital–Mithila) and Jnatrikas were the most powerful clans (based in Kundapura). Mahavira belonged to the Jnatrikas family. The Vajjis were defeated by Ajatashatru.
Malla	Kushinara	The Mahabharata, Buddhist and Jain scriptures, describe it. Malla area stretched to the northern border of the Vajji state. The capitals are Kushinara and Pava. Before entering Mahaparinirvana in Kushinara, the Buddha ate his farewell supper at Pava.

SAPTAPURI, CHARDHAM AND KUMBHMELA

Chardham are the Hindu pilgrimage sites considered to be visited by Hindus at least once in their life time. They were created by Adi Shankarcharya and his disciples.

Saptapuris are the seven cities revered by Hindus as Mokshdayani tirth (pilgrimage cities which help in achieving salvation).

Ayodhya Mathura, Maya, Kashi Kanchi Avantika|

Puri, Dwaravati Chev Saptetaha: Mokshadayika:||

Kumbh mela is the congregation of Hindu religion who gather to take a dip in the adjoining river in the four cities of Bharat, having a religious significance.

AYODHYA

Ayodhya, also known as Saket, an ancient city of Bharat, is the birthplace of Bhagwan Shri Ram. Located on the banks of river Saryu, in the state of Uttar Pradesh, Ayodhya (Awadhpuri) has been regarded as first one of the seven most important pilgrimage sites (Mokshdayini Sapt Puris) for Hindus. Ayodhya used to be the capital of the ancient Kaushal Kingdom. Numerous great kings ruled the capital city of Kosaldesh, including Ikshvaku, Prithu, Mandhata, Harishchandra, Sagar, Bhagirath, Raghu, Dileep, Dashrath, and Shri Ram. During their reign, the kingdom's magnificence peaked and exemplified Ram Rajya. The famous epics, Ramayan and ShriRamcharitmanas exhibit the splendour of Ayodhya.

Over the centuries, Ayodhya witnessed the rise and fall of several dynasties, including the Mauryas, Guptas, and Mughals, each leaving their imprint on the city's architectural and cultural landscape.

The Ram Janmabhoomi Temple, with its majestic spires and intricate carvings, stands as a symbol of devotion and resilience, echoing the aspirations of millions who yearn to connect with the divine.

There are many historical monuments worth mentioning. Hanuman Garhi is a temple dedicated to Hanuman, known for its towering statue of the monkey god and panoramic views of Ayodhya. Kanak Bhawan is a beautifully adorned temple dedicated to Shri Ram and Goddess Sita, famous for its ornate architecture and exquisite idols. Dashashwamedh Ghat is a sacred bathing ghat on the banks of the Saryu River, where pilgrims gather to perform rituals and ceremonies. Nageshwarnath Temple is an ancient Shiv temple believed to have been established by Kush, Shri Ram's son. The Ram Mandir in Ayodhya is made entirely of stone and has 360 pillars in the Nagar style. The temple is 380 feet long, 250 feet wide, and 161 feet tall, and has 392 pillars and 44 doors. The ground floor depicts Ram's life, and the first-floor features Ram's Darbaar, which is made from pink sandstone from Rajasthan. The temple's foundation is made from sacred soil from 2,587 religious' sites, including the Golden Temple, Jhansi, and Bithoori. The temple also incorporates soil and water from Thailand. The 51-inch-tall Ram Lalla idol in the temple's sanctum sanctorum is made from a special rock called Shaligram, which is estimated to be 60 million years old.

MATHURA

Situated along the banks of the river Yamuna it is a district of Uttar Pradesh state of north-central Bharat. The city is mentioned in the oldest epic, the Ramayana. In the epic, the Ikshvaku prince Shatrughna slays a demon called Lavanasura and claims the land. Afterwards, the place came to be known as Madhuban as it was thickly wooded, then Madhopura and later Mathura.

In the 6th century BCE, Mathura became the capital of the Shurasena mahajanapada. The city was later ruled by the Maurya empire (4th to 2nd centuries BC) and the Shunga Empire dynasty (2nd century BC).

It is the traditional birthplace of the god Shri Krishna (Shri Krishna Janmabhoomi) and the primary site of pilgrimage for the annual celebration of Janmashtami.

Shri Krishna Janmabhoomi Temple is known to be the holiest place in Mathura and it is an important pilgrimage for Hindus since it is believed to be the birthplace of Shri Krishna. Before the temple was commissioned by the great-grandson of Krishna, Raja Veer Singh Bundela (as per the locals), it used to be a stone-walled prison cell of Krishna's uncle, King Kans. Besides that, at the back of the main sanctum of the temple, a small room that represents a prison where Shri Krishna was born, is located.

HARIDWAR

Haridwar is a district of Uttarakhand state in Bharat. Haridwar is a place where the river Ganges enters in plain areas of northern Bharat after flowing 250 km from its origin Gaumukh (Gangotri Glacier).

Haridwar, or the 'gateway to gods' (Hari ka dwar) is located where Ganga, the sacreddest of all Bharatn rivers, enters the Indo-Gangetic plains, at the foothills of the Himalayas. It is known by the names Mayapuri, Kapila, Gangadwar as well. The followers of Shiva(Har) and followers of Vishnu(Hari) pronounce this place Hardwar and Haridwar respectively.

According to Puranic legend, Haridwar, along with Ujjain, Nasik, and Prayagraj, is one of four sites where drops of amrita, the elixir of immortality, accidentally spilled over from a kumbha (pitcher).while being carried by the celestial bird Garuda during the Samudra Manthana(the churning of the ocean).

It is also an entry point to the Char Dham (the four main centres of pilgrimage in Uttarakhand viz, Badrinath, Kedarnath, Gangotri, and Yamunotri).

Sage Kapila is said to have an ashram here giving it, its ancient name, Kapila or Kapilasthan.King Bhagirath, the great-grandson of the Suryavansh King Sagar (an ancestor of Ram), is said to have brought the river Ganga from heaven to earth in order to provide salvation to his ancestors. It is also said that Haridwar has been sanctified by the presence of three Gods; Brahma, Vishnu and Mahesh. Vishnu is said to have his foot print on the stone that is set in the upper wall of Har-Ki- Pauri where the Holy Ganga touches it all the times .

On a particular day which is very auspicious when Jupiter (Brahhaspati) comes in the sign of Aquarius (Kumbh) once every twelve years, the Maha Kumbh fair is celebrated at Haridwar. Ardh Maha kumbh is celebrated every 6 years.

Written evidence of Haridwar is found in the accounts of a Chinese traveller, Huan Tsang, who visited Bharat in 629 CE during the reign of King Harshavardhana (590–647) and he recorded Haridwar as 'Mo-yu-lo'.

Pandas of the Haridwar have been known to keep genealogy records of most of the Hindu population. Known as Vahis, these records are updated on each visit to the city, and are a repository of vast family trees of the family in North.

Haridwar's long standing position as a great source for Ayurvedic medicines and herbal remedies as well as its unique Gurukul school of traditional education, adding the scenic beauty and lush greenery, makes this place stand out on the world map.

KASHI

Varanasi and Kashi refer to the same town, which is located in the northern Bharatiya state of Uttar Pradesh. The city has been a centre of Hindu culture, religion, and learning for centuries. It is home to several ancient temples, including the famous Kashi Vishwanath Temple, which is dedicated to Shiva. Varanasi is the world's oldest continually inhabited cities.

Kashi is the more traditional and cultural name of the city. It is often used in religious and spiritual contexts and has a deeper significance for Hindus. The term Kashi is also used to describe the ancient history and heritage of the city.

Varanasi is the official name of the city and is used in official documents and communications. The Kashi Vishwanath Temple stands on the west bank of the Ganges River. It is dedicated to Shiva, who has been worshipped here for hundreds of years as Vishwanatha or Vishweshwara, "God of the Universe." The temple stands on the western bank of the holy river Ganga, and is one of the twelve Jyotirlingas, the holiest of Shiv temples.

There were 72,000 shrines, the same as the number of nadis in the human body. The whole process is a manifestation of a "mega human body" to connect with the larger cosmic body, The Shiv.

Eight forms of Bhairavs were created by Shiv who were positioned at various places in kashi. These bhairavs protect the devotees from all sorts of evils and give the devotees happiness and prosperity in their lives. devotees who worship these bhairavs will develop a strong mental frame work and will be courageous.

The eight Kala Bhairava temples are located in eight cardinal directions of Kashi, protecting the whole Mandala. These are: Unmat Bhairava, Krodhana Bhairava, Kapal Bhairava, Asitanga Bhairava, Chandra Bhairava, Ruru Bhairava, Bhishana Bhairava and Samhara Bhairava.

It is believed that anyone who is graced to die on the land of Varanasi would attain salvation and freedom from the cycle of birth and death. Manikarnika ghat & Harishchandra ghat located on the banks of river Ganga are the great cremation grounds for attaining salvation where the pyre never stops burning. Brahma performed 10 Ashwamegha Yajna in Kashi on the banks of river Ganga, which is known as Dashaswamedh ghat.

Sarnath, the place where Buddha preached his first sermon after enlightenment is 10 km away from Varanasi. Knowledge, philosophy, culture, devotion to Gods, Bharatiya arts and crafts have all flourished here for centuries. Also a pilgrimage place for Jains, Varanasi is believed to be the birthplace of Parsvanath, the twenty-third Tirthankar. Vaishnavism and Shaivism have co-existed in Varanasi harmoniously.

Varanasi is associated with authors such as the ever-famous novelist Prem Chand. Tulsi Das, the famous saint-poet who wrote Ram Charit Manas, Kabir & Ravidas(main protagonists of Bhakti movement) belonged to Varanasi. Ravi Shankar, the internationally renowned Sitar maestro and Ustad Bismillah Khan(the famous Shehnai player) belong to Varanasi. Mrs. Annie Besant chose Varanasi as the home for her 'Theosophical Society' and Pandit Madan Mohan Malviya, to institute 'Benaras Hindu University, the biggest University in Asia.

Sushruta was a Bharatiya physician and surgeon who lived in the ancient city of Kashi, which is now known as Varanasi or Banaras in the northern part of Bharat. Sushruta is known as the "Father of Bharatiya Medicine" and "Father of Plastic Surgery".

KANCHI

Kanchipuram is a small town located on the banks of the Vegavathy river in South . Also called Kanchi, the town is renowned for its silk industry and its temples. Known as the City of Thousand Temples, Kanchipuram is known for its temple architectures, 1000-pillared halls, huge temple towers and silk sarees.

The place finds its name in Patanjali's Mahabhashya. It is the headquarters of the Kanchi matha, a Hindu monastic institution believed to have been founded by the Hindu saint Adi Shankaracharya. Kanchipuram was a centre of education and was known as the ghatikasthanam, or "place of learning". Tondaimandalam was an ancient division of Tamil Nadu comprising roughly the present districts of Kancheepuram, Chennai, Tiruvallur, Vellore and Tiruvannamalai. The capital of Thondaimandalam was Kancheepuram. It has been administered by the Pallavas, Cholas, Vijayanagar rulers, Muhammadan Kings, and the British before Independence.

Manimekalai, the famous Tamil classic, and Perumpanattu Padai, a great Tamil poetical work have described Kanchipuram city.

Kanchi was a major seat of Tamil learning as well as an important place of pilgrimage for Buddhists, Jains and Hindus. Kalidasa has described it to be the best among the cities (Nagareshu Kanchi), just as Jati (jasmine) is the sweetest amongst the flowers, Rambha the most beautiful amongst women and Grihasthashram the most ideal amongst the four ahrams of human life.

The historical monuments include the Kailasanathar Temple and the Vaikunta Perumal Temple. Varadharaja Perumal Temple, Ekambareswarar Temple, Kamakshi Amman Temple, and Kumara Kottam are some of major Hindu temples.

The navel part of Sati's body is believed to have fallen here in Kanchipuram, giving the name Nabhi Peetham or Odhyana Peetham.

Kanchipuram serves as one of the most important inland tourist destinations in Bharat. Kanchipuram has become a centre of attraction for foreign tourists as well.

UJJAIN

The city of Mahakal, Ujjain, is known by several names in Vedas and Puranas. The word 'Avanti' has repeatedly surfaced in the verses of Vedas. Another name Ujjayini has emerged in the sutra "Striyamwanti Kurubhyashcha" of great scholar Panini. The city was named after King Kartavirya Arjun's son Avanti which was later called as Avantika, Avantipuri, Avanti Nagri or Avantikapuri. The

city was even called as Vishala due to its large area and Padmavati due to its grand places and prosperity.

In ancient times, the city had several names including Padmavati, Swarnashringa, Kushashthali, Avantika, Amravati and Churamani. It was also called 'Kanakshringa' due to the golden designs on its structures. It was named as 'Kumudvati' because flowers were found in abundance here. The city was called as 'Pratikalpa' as it was ruined and settled frequently.

According to Brahma Puran, Ujjayini was described as one of the most significant city of the world. Equipped with all kinds of joys, it was called 'Bhogavati' while the city was also known as 'Hiranyavati' due to prosperity.

The city was called as 'Vikrampur' as it was the capital of king Vikramaditya, the founder of Vikram Samvat calendar while it was named Mahakalpuri or Shivrपुरi as world's famous Mahakaleshwar Jyotirlinga is situated here. The city has been named as Avanti in the epics like Vedas, Valmiki Ramayan and Mahabharat. The most popular name 'Ujjayini' is still in use with a slight modification as Ujjain.

The city was prosperous due to its richness of gardens. In 'Prakrit' language, garden is called 'Ujjain' and thus the city was titled Ujjayini which was later named as Ujjain.

A seal of terracotta bearing inscriptions "Nagabhudisa Pavajitasa" and "Asadevasa" in Brahmi characters of 1st century AD turned up during excavations at Ujjain. The Nasik Cave inscription of Vasisthiputra Pulumayi identifies Avanti as Akaravanti with its capital as Ujjayani whereas the Junagarh inscription of Rudradaman-I refers to two Akaravantis, namely, Purva (eastern) with capital at Ujjayani and Aparā (western) with its capital at Mahismati (Maheshwar). The first separate rock edict of Asoka refers to Ujjayani from where the Mahamatras were sent by the royal prince (kumara). Inscriptions of Bhoja, Udaditya, Naravarman, Devapaldeo and Vijayasinghadeva have been discovered at Ujjain and testify the rule of the Parmaras at Ujjain.

The ancient city of Ujjayini is said to have existed about 6 kilometers to the north of today's Ujjain. "Mahakal-van" is the favourite shamshana (cremation ground) of Shri Mahakal. It is this shamshana from where Vikram carries Vetā, to lose him every time he is forced to answer the questions posed by Vetā.

Ujjain is situated on a unique geographical location from where tropic of cancer passes. It is the 'Greenwich Mean Time' of Bharat for Panchang. The tilting of earth at angle of $23\frac{1}{2}^{\circ}$ on its axis and geographical line of tropic of cancer has special cosmic influence making it fit for absolute time location. Situated on the bank of river Kshipra, the only river that travels straight from South to North. This city has a Jyotirling out of 12 Jyotirlings, the two Shakti Peeths - Gadhkalika and Harsiddhi, and sacred Kumbh that takes place in four cities of Bharat. The cave of king Bhartari is found here and it is believed that Ujjain has foot prints of God Vishnu.

Great Scholars of varied fields like Kaalidas, Varahmihir, Banabhatta, Rajashekera, Pushpadanta, Shankaracharya, Vallabhacharya, Bhartrihari, Diwakar, Kattayayan and Bhas had their association with Ujjain.

In Ujjain, the Kumbh Mela is held after every 12 years when the zodiac position of Jupiter is in Leo (Simha in Hindu astrology). Thus, it is also known as Simhastha Kumbh. During Simhastha Kumbh,

pilgrims rejoice by taking a holy dip in the river Shipra. A great fair is held on this occasion on the banks of the river with a huge congregation of devoted pilgrims. The festival of Kumbh is a festival of knowledge, asceticism and devotion.

PURI

Puri, also known as, Jagannath Puri is a coastal city in the state of Odisha in eastern Bharat. Puri is one of the Chardham of the great Chardham of Hindu pilgrimage sites and is one of the revered 'Sapt Puris' Pilgrims flock annually to celebrate the Ratha Yatra besides the world-famous temples, visited throughout the year. Puri is famous for the world famous Shri Jagannath Temple & Longest Golden Beach. The importance of the town as a seat of Vaisnavism increased when Chodaganga Deva constructed the temple of Purusottama Jagannath and consecrated the images of the deities. Thereafter, it became famous as the abode of Purusottama and was popularly called Purusottama Kshetra.

Purusottama name was applied to this town from the drama Anargharaghava Natakam attributed to 9th century A.D. In the Nagari Plate of Anangabhim III of the Saka year 1151-52, i.e., 1229-30 A.D., the place is called Purusottama Kshetra.

The Jagannath Temple in Puri, Odisha, is a place of immense spiritual significance and cultural heritage. It almost took three generations to build and set up this humongous temple. At the top of the temple sits the Sudarshan Chakra, a massive metal structure that weighs in tons. While any ordinary flag would flutter in the direction of the wind, this flag moves against it. The priest climbs to the top of the temple to change the flag high on the dome. It is believed that if this ritual is skipped even for a day, the temple will be shut down for a period of 18 years. The temple casts no shadow. Once anyone steps in through the Singha Dwara entrance of the Jagannath temple, the sound of the ocean waves becomes completely inaudible and returns back as soon he steps out of the temple. For the Prashad, the Seven Pots on top of each other are stacked and are cooked over the firewood. Herein, the topmost pot gets cooked first and the rest of all follow the same order of cooking. Prashad here never falls short or is ever wasted, though any number of pilgrims visit the temple. After every 12 years, the 5 wooden idols are replaced with new ones. This entire process is known as Nabakalebara. It is believed that Krishna's heart resides in the Jagannath Temple.

Another attraction of the district is the world-famous, natural, Chilika Lake.

The handicraft and cottage industries of this District is famous the world over, its original source being the temple craft of Mahaprabhu Shri Jagannath and the World-famous Sun Temple at Konark. The rich traditional culture and heritage of the district gives a boost to this industry. The important products of this industry are applique, stone carving, patta chitra, wood carving, modern patch work, terracotta, bell metal, and seashell items etc.

Eminent personalities included Jayadeva, Gobardhan Acharya, Sridhara Swamy. Noted present personalities who have brought laurels for the district both in Bharat and abroad are Padma Bhusan Sudarsan Sahoo (Stone Sculptor) and Padma Shri Sudarsan Pattnaik (Sand Artist) .

DWARIKA

Dwarka is one of the Chardham of the great Chardham, the Hindu pilgrimage sites and is one of the revered 'Sapt Puris'. Located in the state of Gujarat along the banks of river Gomti, Dwarka is a major pilgrimage site for followers of Krishna. Dwarka is believed to have been the first capital of Gujarat.

The city's name means the "gateway to heaven" in Sanskrit, as Dwar means "gate" and ka refers to "Brahma". Dwarka has also been referred to throughout its history as "Mokshapuri", "Dwarkamati", and "Dwarkavati". It is mentioned in the ancient prehistoric epic period of the Mahabharata. According to legend, Shri Krishna settled here after he defeated and killed his uncle Kansa at Mathura. Dwarka was established as the capital in Saurashtra by the Aryans during the Puranic period. The Yadavs, who had migrated from Mathura, established their kingdom here, when the city was earlier known as "Kaushathali". The kingdom, also known as the Yaduvanshi empire, was established by Ugrasena, father of Kansa the then ruler and later Shri Krishna empowered it. The city's Dwarkadhish Temple dedicated to Shri Krishna was originally built around 2,500 years ago and rebuilt in 16th century. The temple is also the location of Dwaraka matha, also called Sharada Matha/Peeth and "western peeth", one of the four peeths (religious center) established by Adi Shankaracharya. Dwarka has several notable temples, including Rukmini Devi Temple, Gomti Ghat, and Bet Dwarka.

The lost city of Dwaraka, submerged in the depths of sea, continues to captivate minds and hearts. Excavations have revealed the foundations of Dwarka's ancient city walls and a bport . According to S. R. Rao "The available archaeological evidence from onshore and offshore excavations confirms the existence of a city-state"

THE CHHOTA CHARDHAM

The Chhota Char Dham is a sacred journey which comprises of Yamunotri, Gangotri, Kedarnath and Badrinath. The sequence of Char Dham Yatra is Yamunotri, Gangotri, Kedarnath and finally Badrinath. Akshaya Tritiya (April or May in the Gregorian calendar) marks the beginning of the Chota Char Dham Yatra and closes two days after Diwali, on the day of Bhai Dooj. The tradition is to visit the sites in the following order:

1. Yamunotri: the source of the Yamuna River.
2. Gangotri: the source of the River Ganga.
3. Kedarnath: The temple of Kedarnath is dedicated to Shiva, one of the main deities in Hinduism. The temple is one of the 12 Jyotirlingas or "pillars of light." It is believed to have been built by the Pandavas. This is also the foremost of the Panch Kedar Temples in Uttarakhand. The five temples, the Panch Kedars, designated in the strict pecking order to be followed for pilgrimage for worship are the Kedarnath Temple, the Tungnath Temple, the Rudranath Temple, the Madhyamaheshwar Temple and the Kalpeshwar Temple.
4. Badrinath: the seat of the Hindu god Vishnu in his form of Badrinarayan, one of the 108 Divya Desams.

Divya desam Temples are the 108 Vishnu temples that are mentioned in the works of the Tamil Azhvars (saints). "Divya" means "premium" and "Desam" indicates "place" (temple). Of the 108 temples, 105 are in Bharat, one is in Nepal, and last two are outside the Earthly realms. The last two are Thirupalkaddal and Paramapadam. Tirupalkaddal is the ocean of milk and Paramapadam is the Srivaikuntham where Narayana presides. The number of Divya desams are: Tamil Nadu (84), Kerala (11), Uttar Pradesh (4), Uttarakhand (3), Andhra Pradesh (2) and Gujarat (1), and the country of Nepal (1) (Mukthinath). The last two are believed to be outside earthly realms. The Divyadesams are revered

by the 12 Azhvars in the Divya Prabandha, a collection of 4,000 Tamil verses. Each temple is dedicated to Vishnu in one of his various forms, and they are considered his divine abodes on Earth.

NORTH AND ANDHRA PRADESH

1. Tirumala Venkateswara Temple – AP
2. Ahobilam – AP
3. Muktinath, Saligramam, Nepal
4. Naimisaranya – UP
5. Mathura – UP
6. Gokul – UP
7. Raghunathji Temple – UTK
8. Badrinath temple -UTK
9. Jyotirmath (Joshimutt) – UTK
10. Ayodhya – UP
11. Dwarka – Gujarat

MALAI NADU, KERALA

12. Sri Padmanabhaswamy temple
13. Thirukatkarai
14. Moozhikkalam
15. Tiruvalla
16. Thirukadithanam
17. Sengunroor
18. Thiruppuliyoor
19. Thiruvaaranvilai
20. Thiruvanvandoor
21. Thiru naavaay
22. Viththuvakkodu

MADURAI

23. Thirumeyyam
24. Thirukoshtiyur
25. Koodal Azhagar Temple
26. Azhagar Kovil
27. Tirumogoor
28. Srivilliputhur
29. Tiruththangal
30. Thiruppullani

KANCHIPURAM

31. Thirukachi
32. Ashtabujakaram
33. Tiruvenkata

34. Tiruththanka
35. Tiruvelukkai
36. Tirukalvanoor
37. Tiru oorakam
38. Tiru neeragam
39. Tiru kaaragam
40. Tirukaar Vaanam
41. Tiru parameswara vinnagaram
42. Tiru pavala vannam
43. Tiru paadagam
44. Nilathingal Thundam Perumal temple
45. Thiruputkuzhi

CHENNAI

46. Thiruvallikeni
47. Thiruneermalai
48. Thiruvidadai
49. Thirukadalmallai
50. Thiruninravur
51. Thiruvallur
52. Thirukkadigai

MAYILADUTHURAI AND SIRKAZHI

53. Thiruvazhunthoor
54. Thiruindaloor
55. Kazheesirama Vinnagaram
56. Thirukkavalampadi
57. Thiruchsemponsey
58. Thiruarimeya Vinnagaram
59. Thiru Vanpurushothamam
60. Thiruvaikunda vinnagaram
61. Thirumanimadam
62. Thiruthevanarththogai
63. Thiruthettriyambalam
64. Thirumanikkoodam
65. Thiruvellakkulam
66. Thiruppaarththanpalli
67. Thalai Sanga Nanmathiyam
68. Thiruchsirupuliyur

69. Thiruvai-Thirunagari

THANJAVUR

70. Thiruccithra kootam

71. Thirukkannangudi

72. Thirunagai

73. Thiru Thanjai

74. Thirukkoodaloor

75. Thiru Kavith Thalam

76. Thiru Adhanoor

77. Thirupullabhoothangudi

78. Thirukkudandhai

79. Thiruccherai

80. Thirunandipura Vinnagaram

81. Thiru Naraiyoor

82. Thiruvinnagar

83. Thiruvelliyangudi

84. Thirukkanamangai

85. Thirukkkannapuram

86. Thiruvahithipuram

87. Tirukkoilur

88. Thirukkandiyur

89. Sri Rangam

90. Thirukozhi

91. Thirukkarambanoor

92. Thiruvellarai

93. Thiru Anbil

94. Thirupper Nag

TIRUNELVELI

95. Thiruvaramangai

96. Thirukkurungudi

97. Srivaikundam

98. Thiruvaragunamangai

99. Thiruppulingudi

100. Thirukkurugoor

101. Thirutthulaivillimangalam

102. Thirukkuloor

103. Thirukkulandhai

104. Thentirupperai

KANYAKUMARI

105. Thiruvattaru

106. Paramamapadam

TRICHY

CHARDHAM

The Char Dham (चारधाम, the four abodes), or the Chatur Dhama(चतुर्धाम) is a set of four Hindu pilgrimage sites in Bharat, consisting of Badrinath, Dwarka, Puri and Rameshwaram. Badrinath, Dwarka, and Puri are shrines of Vishnu, whereas Rameshwaram is a shrine of Shiva.

Defined by Adi Shankaracharya, each Dham represents a particular yuga, with Badrinath representing Satya Yuga, Rameshwaram representing Treta Yuga, Dwarka representing Dvapara Yuga, and Puri represents Kali Yuga.

Badrinath initially was called badarikāvaṇan and here Nara-Narayana, avatar of Vishnu, performed Tapa. As the legend says, a large berry tree grew above Nara-Narayana to save him from the rains and sun. It is said that it was Lakshmi who became the berry tree to save Narayana. After completing Tapa, Narayana decreed that people would always invoke her name before his making his name as "Lakshmi-Narayana."

The second Dham, Rameshwaram, has its origins in the Treta Yuga when Shri Ram installed a Shivling at this place for atonement for slaying Ravana, a devotee of Shiva. It is believed that Ram's footprints are imprinted there & this is the place where Shri Ram, along with his brother Lakshman and devotee Hanuman, built a bridge (Shri Ram Setu) to reach Lanka to rescue his wife Sita. The deity in the form of a Linga is called Sri Shri Ramnathaswamy and is one of the twelve Jyotirlingas. The third Dham

Dwarika was established in the Dvapara Yuga when Shri Krishna left from Mathura and founded this city.

While the three Dhams remain open throughout the year, Badrinath Dham is open for pilgrims from April to October each year.

At the fourth Dham Puri, Vishnu is worshipped as Jagannath, his avatar for the Kali Yuga. The main worshipped deity there is Krishna, revered as Jagannath. It is the only shrine in where Subhadra, the sister of Krishna, is worshipped along with her brothers, Jagannatha and Balabhadra.

Adi Shankaracharya organised four mathas to correspond to the four sites of the Char Dham:

Dwarka in the West, Puri in the East, Sringeri in the South and BadarikAshrama in the North.

KUMBH MELA

Kumbh Mela is the largest religious congregation in the world which is associated with Jupiter which takes 12 years to complete one rotation around the Sun. It is organised at four places in Bharat and considered to be of utmost significance by Hindus:

Prayagraj on the confluence of rivers Ganga-Yamuna-Sarasvati, Uttar Pradesh Haridwar on the banks of river Ganges, Uttarakhand

Nasik-Trimbak on the banks of river Godavari, Maharashtra Ujjain on the banks of river Shipra, Madhya Pradesh.

Apart from Kumbh Mela happening every 12 years at these places, Ardh Kumbh mela takes place every 6 years at Haridwar & Prayagraj and Mahakumbh mela happens once in 144 years at Prayagraj.

Astronomical alignment for Kumbh mela:

When Jupiter enters in Aquarius or Kumbh (zodiac sign) and Sun and Moon in Aries and Sagittarius respectively, Kumbh is held at Haridwar.

When the Jupiter is in Taurus or Vrishabha (zodiac sign) and the Sun and Moon are in Capricorn or Makra, the kumbha is held at Prayag.

When the Jupiter enters Leo or Simha (zodiac sign) and the Sun and Moon in Cancer, the Kumbha is held at Nashik and Trimbakeshwar.

When Jupiter is in Leo and the Sun and Moon in Aries, the Kumbha is held at Ujjain.

In Shiva Purana, Brahma Purana and Narad Puran, it is mentioned regarding events of Kumbh that Kumbh festival starts from Haridwar. After Haridwar it is celebrated at Prayag, Nashik-Trimbakeshwar and then Ujjain. It is celebrated at these places after every 12 years while Ardh Kumbha (which is celebrated after every six years) is held at Haridwar and Prayagraj.

NASIK

In Nasik, Kumbha Mela is held at two different places for different sects as per the instructions given by Peshwas. Vaishnav Akhadas bathe at Nashik and Shaiva or Sanyasi's Udaseen Akhadas bathe at Trimbakeshwar.

Nashik is an ancient city in the northwest region of Maharashtra in Bharat. Situated on the banks of Godavari river, Nashik is best known for being one of Hindu pilgrimage sites.

It is believed that Ram had taken a bath at the Ramkund Ghat here. Shri Ram also performed

Tarpan (ritual for the deceased) for his father Dashrath on the banks of this Triveni Sangam. Panchvati is on the left bank of the Godavari river, near the Kalaram temple. Panchvati was the home of Ram, Sita, and Lakshman during their 14-year exile.

The name Panchavati was due to the presence of five banyan trees. These trees are marked even today. There is a cave nearby called Sita Guha where Shri Ram, Sita, and Lakshmana prayed to Shiva.

The Triveni Sangam, where the rivers Aruna, Varuna, and the Godavari meet, is considered a holy confluence or Tirtha for Hindus. It is often referred to as the Kashi of Maharashtra. It is considered as sacred river of South hence also called as Dakshin Ganga. The Kashiviswanath Temple, which is 1500 years old, is built on a single stone along the banks of the Godavari and symbolizes the connection to Kashi (Varanasi).

Arrangements made by the Peshwas due to clashes between ascetics of both sects, Vaishnva Akhadas bathe at Nashik while Shaiva or Sanyasis & Udasin Akhadas bathe at Trimbakeshwar, though they bathe together at Prayag, Haridwar and Ujjain.

Poets like Valmiki, Kalidas, and Bhavabhooti have praised the city in their works. The Godavari Mata Temple, which opens once every 12 years during the Kumbh Mela, also called Ganga Godavari Temple Panchvati Nashik is located on the banks of River Godavari. The Ganga Godavari Temple is one of the popular temples located quite close to Ramkunda Panchavati. Godavari Tir Shakti Peeth, one of the 51 Shakti Peeth Temples across Bharat is dedicated to Goddess Sati in her form as Vishweshwari. It is situated at Kabbur along the banks of Godavari River near Rajamundry in Andhra Pradesh and it is believed that Devi's left cheek fell here.

Trimbakeshwar Shiva Temple is located in Trimbak, one of the twelve Jyotirlingas, where the Hindu genealogy registers at Trimbakeshwar, Maharashtra are kept. The origin of the sacred Godavari river is near Trimbak.

Someshwar Waterfall, Kalaram Temple, Nashik Caves, Muktidham, Tapovan, Ramshej Fort, Sita Gufaa, Anjaneri Fort, Coin Museum and many others are among the top Nashik places to visit. [The city is also well recognised as the "Wine Capital of Bharat" due to its abundance of vineyards and wineries.]

PRAYAGRAJ

Prayagraj is one of the oldest cities in Bharat, called in ancient scriptures, as 'Prayag' or 'Teertharaj' and is considered the holiest of pilgrimage centres of Bharat. It is situated at the confluence of three rivers- Ganga, Yamuna and the invisible Saraswati. The meeting point is known as Triveni, very sacred place for Hindus. The Kumbh held in every six years and Mahakumbh in every 12 years at Prayagraj (Sangam) are the largest gatherings of pilgrims on this earth.

Prayagraj was also known as Kosambi in the late Vedic period, named by the Kuru rulers of Hastinapur, who developed it as their capital. Known as Purimtal in ancient Jain scriptures, it is also a sacred place for Jains, as their first Tirthankar, Rishabhdeva attained kevalya gyana here. It was believed that god Brahma performed the very first sacrifice (yāga, Yajna) in this place.

Prayagraj, meaning "the king among the five prayāgas", is used as a term of respect to indicate that this confluence is the most splendid one of the five sacred confluences in Bharat.

The five prayags - prayaga meaning "place of confluence of rivers" in Sanskrit - also termed as "Prayag pentad", in the descending flow sequence of their occurrence, are:

Alaknanda + Dhauliganga = Vishnu Prayag Alaknanda + Nandakini = Nand Prayag Alaknanda + Pindarganga = Karna Prayag Alaknanda + Mandakini = Rudra Prayag Alaknanda + Bhagirathi = Dev Prayag

While the Prayag at Prayagraj (King of Prayags), where the three rivers, the Ganges, the Yamuna and the Sarasvati confluence, is considered the holiest, the Panch Prayag of Garhwal Himalayas are the next in the order of piety.

The Panch Prayag located on the road to Badrinath refer to the Svargarohana (ascend to heaven) route followed by the Pandavas to attain salvation, after they completed Parikrama(circumambulation) of the earth.

An important city in Hindu scriptures - NAIMISHARANYA

Naimisha is a sacred forest frequently mentioned in Puranic literature, the Ramayana and the Mahabharata. Naimiṣīyā, for the first time was used in the Brāhmaṇas and the Upaniṣhadic Literature. Naimiṣāraṇya is derived from 'Nimesha', "a twinkling of the eye" and 'Aranya' meaning 'Forest'. Hence, Naimiṣāraṇya means "a forest or pool where, in the twinkling of an eye, Vishnu destroyed an army of Asuras. Gauramukha had obtained a divine crystal (Divya Mani) from Vishnu, through a terrible Tapas(penance). With the help of that divine crystal, Gauramukha could host a feast to the king and his entire army.

When Asura Durjaya wanted to take that jewel by force, Vishnu destroyed, just in a Nimisha(unit of time), Durjaya and his vast army using his Chakra.

According to the Rāmāyaṇa, Naimiṣa was situated along the Gomati river, where Shri Ram performed Ashwamedha Yajna and united with his sons- Luv & Kush. And here only, Sita took her final refuge, returning to Mother Earth.

In the Adi Parva of the Mahabharata, the forest is mentioned as situated towards east (prācīm diśam) of the mountain regions of Himavat. Here Shaunak had performed a twelve years Yajna which was attended by a large number of Rishis, of whom the most prominent and distinguished was Ugraśrava-Sauti, the son of Romaharṣhana.

Sutaji or Sauti narrated Puranas, including the Shiva Purana, Bhagavata Purana, Harivamsa Purana, Brahmavaivarta Purana, and Padma Purana, with the narrations taking place before the sages who were gathered in Naimisha Forest.

The entire Mahābhārata epic is structured as a dialogue between Ugrasravas Sauti/Sutaji(the narrator) and sage Shaunaka. The narration (Bharata) of the history of Bharata kings by sage Vaishampayan to Kuru king Janamejaya is embedded within this narration of Ugrasravas Sauti. Vaisampayana's narration (Jaya) in turn contains the narration of Kurukshetra War by Sanjaya, to Kuru king Dhritarashtra.

It is believed to be the place where Devi Sati's heart fell and Is a Shakti Peeth. The Lalita Devi Temple in Naimisharanya is a prominent site of worship for this deity.

Chakratirtha is one of the most popular Hindu pilgrimage sites in Naimisharanya, as according to a legend, it is the place where the wheel (Chakra) of Vishnu made an opening in the earth, thereby

resulting in the creation of an enormous body of water. A holy dip in the water of this pond is believed to sanctify one's mind, body, and soul.

नैमिषं नरक नीयेषु स्थान्वा भाग्यमनमः।
सर्वं व्याधि विनिर्मुक्तो ब्रह्मलोकं महीयते ॥

Another legend is, when several rishis or sages appealed to Brahmā to show them an ideal place for the performance of sacrifices and austerities, he is said to have set a wheel rolling and told them that the place where the nemi or the rim of the wheel will drop off, is the most suitable place. Since the nemi fell at this place it came to be known as Naimiṣa or Naimiśa or Naimiṣāranya.

The Vishnu's temple here, is one of the 108 sacred Vishnu temples and is one of the eight temples of Vishnu that are self-manifested, known as Swayamvyakta Kshetra.

Here is also located the Ashrama of Rishi Dadhichi, who is believed to have given away his life here to donate his bones for the creation of Indra's weapon Vajra, which the latter used to kill Vritrasur.

Also, Sage Vashistha had established his ashram and Gurukul in Naimisharanya. According to Skanda Purana:

नैमिषारण्यं पुण्यं तीर्थानां उत्तमं तीर्थम्।
यत्र देवो हिरः साक्षात् प्रत्यक्षो भक्तवत्सलः॥

"Naimisharanya is the most sacred among holy places, where Hari (Vishnu), the compassionate protector of devotees, is directly present."

MAJOR RIVERS OF BHARAT

Rivers have always been considered sacred in Hinduism and Hindus worship them in the form of a female deity like their mother, since they are associated with the survival of humanity. There is a mention of all the rivers in Vedas and other ancient scripts.

GANGA

The Ganga River system is one of the largest river basins in the world, covering a vast expanse of northern Bharat. Originating from the Gangotri Glacier in the Himalayas, it flows through several states in northern Bharat before merging with the Bay of Bengal. The Ganga River basin supports a significant portion of Bharat's population and economy. It provides water for irrigation, drinking, and industrial purposes, supporting agriculture, fisheries, and other livelihoods. It is considered sacred and is believed to purify the soul and grant salvation to those who bathe in its waters.

The Ganga river rises in the Gangotri glacier near Gaumukh (3,900 m) in the Uttarkashi district of Uttarakhand. Ganga basin is largest river basin in Bharat with a length of approximately 2500 Kilometres. It is known by various names throughout its course. It is known as Bhagirathi at its source. At Devaprayag, rivers Bhagirathi and Alaknanda join to give birth to river Ganga. The source of Alaknanda River is the confluence of Satopanth Glacier and Bhagirathi Kharak Glacier., which is part of Greater Himalayas.

Through the course of Alakananda, we will come across Five sacred river confluences – called the Panch Prayags. The first prayag, called Vishnuprayag or Joshimath, is place where Dhauti and Alakanada rivers meet. Dhauti river originated from Nanda Devi National Park in Uttarakhand. The second being Nandaprayag, a place where Nandakini joins the Alakananda River. The Alakanada river is further joined by Pindar river at Karnaprayag, the third prayag. At Rudraprayag the fourth prayag, Mandakini joins it. Finally, it joins the Bhagirathi River at Devaprayag, the fifth prayag.

After five sacred river confluences, Ganga passes the Rajaji National Park, and reaches the town of Haridwar. It then flows along the border of Uttarakhand and Uttar Pradesh. After entering Uttar Pradesh, it reaches Prayagraj (which is also called Allahabad). It is very sacred place where Maha Kumbh Mela takes place. In this place, the three rivers – Ganga, Yamuna, Saraswati – merge and hence it is called Triveni Sangam. After passing through Varanasi and forming small border of UP and Bihar, it then enters Bihar. In Jharkhand, Ganga flows through its northeastern border and then enters West Bengal. It divides into two parts near Farakka, that is, Ganga now becomes a distributary. One branch flow through West Bengal as Bhagirathi-Hooghly River system whereas other enters Bangladesh as Padma river. Finally, Hooghly River enters in Bay of Bengal near Sagar Island.

Right bank tributaries of river Ganga - First one is Yamuna River, which is also called as Jamuna. The source of Yamuna lies in Yamunotri Glacier in Uttarakhand. It is the western most and the longest

tributary of Ganga and joins it in the city of Prayagraj. Second right bank tributary of Ganga is Son, which originates near Amarkantak in Madhya Pradesh and joins Ganga in Patna.

The Third right bank tributary of river Ganga is Damodar, which originates in Chotta Nagpur Plateau of Jharkhand state and meets Hoogly in Kolkata.

Left bank tributaries of River Ganga - First one is Ramganga. It originates from Dushatoli range in Uttarakhand and passes through Jim Corbett National Park and confluences with river Ganga in Uttar Pradesh. Next one is Gomati, which originates from Gomat Taal in Uttar Pradesh and meets Ganga at a place near Varanasi. The third one is Ghaghara river, which is a transboundary river, as it originates in Tibet and meets Ganga in UP and Bihar border. Other right bank tributaries are Gandak and Kosi which are also transboundary as they originate from Nepal.



INDUS

The Indus arises from the northern slopes of the Kailash range in Tibet near Lake Mansarovar. It has a large number of tributaries in both Bharat and Pakistan and has a total length of about 2897 km from the source to the point near Karachi where it falls into the Arabian Sea out of which approx 700km lies in Bharat. It enters the Bharatiya Territory in Jammu and Kashmir by forming a picturesque gorge. In the Kashmir region, it joins with many tributaries – the Zaskar, the Shyok, the Nubra and the Hunza. It flows between the Ladakh Range and the Zaskar Range at Leh. It crosses the Himalayas through a 5181 m deep gorge near Attock, which is lying north of Nanga Parbat. The major tributaries of the Indus River in Bharat are Jhelum, Ravi, Chenab, Beas, and Sutlej.

NARMADA

The Narmada is a river located in central Bharat. It rises to the summit of the Amarkantak Hill in Madhya Pradesh state. It outlines the traditional frontier between North Bharat and South . It is one of the major rivers of peninsular Bharat. Only the Narmada, the Tapti, and the Mahi rivers run from east to west. The river flows through the states of Madhya Pradesh, Gujarat, and Maharashtra. It drains into the Arabian Sea in the Bharuch district of Gujarat.

GODAVARI

The Godavari River is the second-longest course in Bharat with brownish water. The river is often referred to as the Dakshin (South) Ganga or Vriddh (Old) Ganga. This river originates from Trimbakeshwar, near Nasik in Maharashtra. It flows southeast across south-central Bharat through the states of Madhya Pradesh, Telangana, Andhra Pradesh, and Orissa, and drains into the Bay of Bengal. The river forms a fertile delta at Rajahmundry. The banks of this river have many pilgrimage sites, Nasik(MH), Bhadrachalam(TS), and Trimbak. Some of its tributaries include Pranahita (Combination of Penuganga and Warda), Indravati River, Bindusara, Sabari, and Manjira. Asia's largest rail-cum-road bridge which links Kovvur and Rajahmundry is located on the river Godavari.

KRISHNA

Shri Krishna is one of the longest rivers of Bharat, which originates from Mahabaleshwar in Maharashtra. It flows through Sangli and drains the sea in the Bay of Bengal. The river flows through the states of Maharashtra, Karnataka, Telangana and Andhra Pradesh. Tungabhadra River is the main tributary which itself is formed by the Tunga and Bhadra rivers that originate in the Western Ghats. Dudhganga Rivers, Koyna, Bhima, Mallaprabha, Dindi, Ghataprabha, Warna, Yerla, and Musi are some of the other tributaries.

MAHANADI

The Mahanadi originates from the Satpura Range of central Bharat and it is a river in eastern Bharat. It flows east to the Bay of Bengal. The river drains of the state of Maharashtra, Chhattisgarh, Jharkhand, and Orissa. The largest dam, the Hirakud Dam is built on the river.

CAUVERY

It originates from Talakaveri located in the Western Ghats. The headwaters of the river are in the Western Ghats range of Karnataka state, and from Karnataka through Tamil Nadu, the river drains into the Bay of Bengal. The river has many tributaries called Arkavathy, Shimsha, Hemavati, Kapila, Shimsha, Honnuhole, Amaravati, Lakshmana Kabini, Lokapavani, Bhavani, Noyyal, and Tirtha.

TAPI

It is a central Bharatiya river. It is one of the most important rivers of peninsular Bharat with the run from east to west. It originates in the Eastern Satpura Range of southern Madhya Pradesh state and flows in a westward direction, draining some important historic places like Madhya Pradesh's Nimar region, East Vidarbha region and Maharashtra's Khandesh in the northwest corner of the Deccan Plateau and South Gujarat before draining into the Gulf of Cambay of the Arabian Sea.

The River Basin of Tapi River lies mostly in eastern and northern districts Maharashtra state. The river also covers some districts of Madhya Pradesh and Gujarat as well. The principal tributaries of Tapi River are Waghur River, Aner River, Girna River, Purna River, Panzara River and Bori River.

BRAHMAPUTRA

Brahmaputra originates from Mansarovar Lake, which is also a source of the Indus and Sutlej. It is 3848kms long, a little longer than the Indus River. Most of its course lies outside Bharat. It flows parallel to the Himalayas in the eastward direction. When it reaches Namcha Barwa, it takes a U- turn around it and enters Bharat in the state of Arunachal Pradesh. Here it is known as the Dihang River. In Bharat, it flows through the states of Arunachal Pradesh and Assam and is connected by several tributaries. The Brahmaputra has a braided channel throughout most of its length in Assam.

The river is known as the Tsangpo in Tibet. It receives less volume of water and has less research and satellite imagery of the region has confirmed to have found the lost river when water was detected during digging of the dry river bed at Yamunanagar.[133] Surveys and satellite photographs confirm that there was once a great river that rose in the Himalayas, entered the plains of Haryana, flowed through the Thar-Cholisthan desert of Rajasthan and eastern Sindh (running roughly parallel to the Indus) and then reached the sea in the Rann of Kutchh in Gujarat. The strange marshy landscape of the Rann of Kutchh is partly due to the fact that it was once the estuary of a great river.[134] silt in the Tibet region. But in Bharat, the river passes through a region of heavy precipitation, and as such, the river carries large amounts of water during rainfall and a significant amount of silt. It is considered one of the largest rivers in Bharat in terms of volume. It is known for creating calamities in Assam and Bangladesh. Dibang, Lohit, and Subansiri rivers are its major tributaries.

YAMUNA

The Yamuna River is the largest tributary of the Ganga River. It originates from the Yamunotri glacier, at the Bandarpooch peak in Uttarakhand. The main tributaries joining the river include the Sin, Hindon, Betwa Ken, and Chambal. The Tons is the largest tributary of the Yamuna. The catchment of the river extends to the states of Delhi, Himachal Pradesh, Uttar Pradesh, Haryana, Rajasthan, and Madhya Pradesh.

SARASWATI

The earliest mention of the River Saraswati is found in the Rig Veda, the collection of the most ancient sacred Sanskrit hymns. Throughout the Vedas, the Saraswati River is praised with utmost reverence. In the Rigveda, the oldest of the Vedic scriptures, Saraswati is hailed as the "Best of Mothers, Best of Rivers, Best of Goddesses." The Yajurveda elaborates on Saraswati's divine attributes, depicting her as the confluence of five sacred tributaries: Drishadvati, Shatudri (Sutlej), Chandrabhaga (Chenab), Vipasa (Beas), and Iravati (Ravi). In the Atharvaveda, Saraswati's benevolence is celebrated through verses depicting her role in agricultural prosperity. Saraswati also finds mention in ancient texts like the Manusmriti, Mahabharata, and Puranas.

Specifically, the Nadi Stuti hymn in the Rigveda places the Saraswati between the Yamuna and Sutlej rivers, while other texts mention its flow towards a 'samudra', interpreted as a sea.

The age of the Saraswati River's older paleochannels dates back as far as 28,000 years. Excavations along the course of the Saraswati River have unearthed remnants of ancient settlements, pottery shards, and infrastructure dating back to the Bronze Age and Harappan civilization. Many scholars now call this civilization the Sindhu-Saraswati Civilization.

SHODASH SANSKAR

As human beings, we undergo various stages in life - childhood, education, youth, professional life, marriage, parenthood etc. Almost all cultures and traditions mark and celebrate these stages in the journey of life. Our ancient Vedic tradition identifies sixteen such important milestones in life and we collectively celebrate them - these are called Shodasha Samskaras.

Life is a celebration. In Celebration people come together with enthusiasm and uplifted spirit; it brings happiness and harmony in the society. Samskaras in the Vedic tradition are celebrations which include ceremonies, performance of rituals, Homas, chanting of mantras, use of specific herbs, fruits, flowers, grains etc., obtaining blessings from the elders and family.

The Samskaras are based on ancient texts - Manu Smriti and Grihya Sutras.

1. Garbhadana Samskara – is performed by a married couple when conceiving a child. This important Samskara raises the act of conception to a sacred occasion, and is powerfully purifying and uplifting for the unborn child.
2. Pumsavana Samskara – is usually performed between the second and fourth month of pregnancy. Its purpose is: to insure the good health of the foetus and the proper formation of its organs, so that the family line and tradition will perpetuate thorough the baby.
3. Simantonoyana Samskara – In the fourth or fifth month of pregnancy, the mind of the foetus begins to develop. This is when simantonoyana Samskara is performed. Its purpose is to protect the foetus—especially its newly forming mind—from all negative influences, and also to stimulate the development of the unborn child’s intellect.
4. Jatakarma Samskara is the ritual performed at the birth of a child noting the birth time and star and thus create a birth chart which is suppose to be the blue print of ones life.
5. Namakarana Samskara – On the eleventh day after the child’s birth, namakarana Samskara is performed. In this ceremony, the child receives its name.
6. Nishkramana Samskara – The baby’s first outing into the world, beyond the confines of the home.
7. Annaprashana – The first feeding of solid food to the baby, usually in the sixth month after birth.
8. Karnavedha Samskara – usually performed in the sixth or seventh month after birth, consists of the piercing of the baby’s ear lobes, so earrings may be worn.
9. Chudakarana Samskara – At the end of the first year after birth, or during the third year, the child’s hair is shaved—all but a tuft on the top of the head. This ritual shaving of hair, performed with ceremony, prayers, and chanting of Vedic hymns, is chudakarana Samskara This Samskara is for both boys and girls.
10. Vidyarambha Samskara – begins a student’s primary education by ceremonially introducing the child to the alphabet.

11. Upanayana Samskara – initiates the formal study of the Vedas. It is one of the most important and esteemed of the samskaras. Upon performance of Upanayana, a boy traditionally moves from home to live in the ashram of the guru.
12. Samavartana Samskara – With samavartana Samskara the disciple graduates from his Vedic studies and returns from the house of his guru. Thereafter, the disciple will marry and raise a family, and so enter the stage of householder, Grihasthashrama.
13. Vivaha Samskara – The traditional Hindu wedding ceremony is known as vivaha Samskara. It is considered by many to be the most important of all the samskaras.
14. Panchamahayagna Samskara – A married couple performs the panchamahaYajna, or five great Yajna, daily. In this Samskara, one honours, in turn, the rishis, the gods, the parents, humankind, and all created beings.
15. Vanaprastha Samskara – According to the Vedic tradition, vanaprastha is the third stage of life, following brahmacharya (Vedic student/disciple) and grihasta (householder). Here, a one leaves behind one's life in the world and retires to the forest (or serving the society), to live an ascetic life devoted to service, study of the scriptures and to meditation.
16. Antyeshti Samskara – The final sacrament, the funeral rites, are known as antyeshti Samskara.

UNITS OF WEIGHTS IN ANCIENT BHARAT

The following measurements were prevalent in North India until the metric system was established:

4 Chāwal (grain of rice) = 1 Dhan (weight of one wheat berry)

4 Dhan = 1 Ratti (seed of the '*Abrus precatorius*' plant or Rosary pea or Gunja in Hindi).

8 Ratti = 1 Masha

3 Masha (24 Ratti/96 Dhan) = 1 Tak

4 Tak (12 Masha/96 Ratti) = 1 Bhari

1 Bhari = 4 Siki

1 Kancha = 5 Siki

1 Chhataank = 4 Kancha = 5 sikka

1 Chhataank = 5 Bhari

1 Adh-pav = 2 Chhatank = 1/8 Seer

1 Pav = 2 Adh-pav = 1/4 Seer (Pav means 1/4)

The unit pav is still used and equals "a fourth of a kilogram".

1 Adher = 2 Pav = 1/2 Seer

In Hindi 1/2 Seer = Adha (1/2) Seer, or Adher

1 Ser = 2 Adher = 4 Pav = 16 Chhatank = 80 Tola = 933.1 grams

1 Savaser = 1 Ser + 1 Pav (1 1/4 Seer)

1 Savaser weighed 100 Imperial rupees

1 1/4 Seer = Sava (1 1/4) Seer, or Savaser

1 Dhaser = 2 Savaser = 2 1/2 Seer

2 1/2 Seer = Dhai (2 1/2) Seer, or Dhaser

1 Paseri = 2 Adisari = 5 Seer

5 Seer = Panch (5) Seer, or Paseri

1 Daseri = 2 Pasri = 10 Seer

10 Seer = Das (10) Seer, or Daseri

1 Munn (*maan* or *man*[मण]) = 4 Daseri = 8 Pasri = 40 Seer

(1 Bhari = 11.66375 gram

3.75 Troy ounce = 10 Bhari

Weight of 64 Dhan (Wheat grains) = Weight of 45 Jau (Barley corns)

Weight of 1 Barley corn = 64.79891 milligrams)

ABOUT THE AUTHOR

Ritu Verma has keen interest in the knowledge related to Bharatiya culture like Temples, Vedic Sciences, Sanatan Dharma, Traditions, Festivals, Dances, Artforms, etc. She has tried to bring this consolidated information into two volumes. The journey started during lockdown to learn about what was taught in Gurukulas during Vedic period. She did research from very reliable sources while writing the books which took a long period of more than two years.

She is a graduate in Electronics and a Post-graduate in English and later Vedic Sciences. A mother of two and spouse of an intellectual, working with an IT co, she has travelled many countries learning about their cultural Heritage. Belonging to the spiritual city of Haridwar, she wanted to impart the knowledge of her own country to everyone interested in Bharat & Hinduism. Daughter of religious parents, the demise of her mother lead her to write this book as her mother was a great devotee of Shiva and had keen interest in gaining knowledge related to Hinduism.

Author is also an active volunteer in imparting knowledge of Hinduism & culture to children with stories related to Bharat or Hindu Mythology as they teach moral lessons and offers insights into the divine, the universe and the human nature.

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