

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

Unit No	Contents	Sub Topics	Video links
		IKS_Engineering _INTRO IKS_CH01_C02 : Why do we need IKS IKS_CH01_C03 : IKS in Action IKS_CH01_C06 : Salient Aspects of IKS Discover IKS : Indian Knowledge Systems: IIT Alumni Event, Washington DC #1	https://www.youtube.com/watch?v=mjtJDIOZ-h8&t=21s https://www.youtube.com/watch?v=DrsI1veFjag&t=206s https://www.youtube.com/watch?v=2MaTbV_18uM&t=320s https://www.youtube.com/watch?v=Vwm43weig64 https://www.youtube.com/watch?v=MKbLFvDd4xo&t=5s https://www.youtube.com/watch?v=D-WdswoSVc&t=1s https://www.youtube.com/watch?v=2WYZtS_LLog
1	Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.	IKS_CH01_C05 : Historicity of IKS	https://www.youtube.com/watch?v=MKbLFvDd4xo&t=5s
		IKS_CH01_C04 : The IKS Corpus- A Classification Framework	https://www.youtube.com/watch?v=Vwm43weig64

1. Perception and Prologue

The Indian Knowledge System (IKS) is a collection of knowledge and practices that have developed in India over thousands of years. It includes many areas such as philosophy, mathematics, medicine (like Ayurveda), arts, architecture, farming, and understanding nature. This traditional wisdom was passed down through generations and has helped people live in harmony with nature and society. Today, in the 21st century, there is a growing interest in bringing this ancient knowledge together with modern science and technology. By combining the old with the new, we can create better and more sustainable ways to live. For example, using traditional farming methods along with modern tools can protect the environment and produce healthy food. Similarly, using Ayurveda along with modern healthcare can improve overall well-being. However, with the adoption of colonial education systems, indigenous knowledge was gradually marginalized. Western epistemologies came to dominate formal education, leading to a disconnect between modern learners and their cultural roots. The National Education Policy (NEP) 2020 acknowledges this gap and advocates the revival of IKS through curriculum integration at all levels of education. It emphasizes interdisciplinary learning, inclusion of indigenous languages, and the recognition of traditional wisdom as essential for sustainable development and cultural preservation. While these reforms present opportunities for revitalization, their success depends largely on how students perceive and value IKS.

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

2. Indian Traditional Knowledge

Traditional knowledge or indigenous knowledge is developed by local indigenous communities that are well-developed and whose long-standing customs and practices are followed by these communities from generation to generation. Studies into the origins, behaviour, and development of humanism in both prehistoric and modern societies led to the recognition of traditional knowledge. The adoption of traditional knowledge by international organisations, like the UN, has resulted in its widespread appreciation and recognition.

Traditional knowledge (TK) refers to the knowledge, know-how, skills, and practises developed, maintained, and passed down from one generation to another. These practices are frequently integral to the community's cultural or spiritual identity.

Meaning: Traditional knowledge can be found in a wide range of fields, such as agriculture, science, technology, ecology, medicine, and biodiversity-related topics.

TK includes both the knowledge itself and conventional cultural expressions, such as signs and symbols. It comes from intellectual activity within a traditional context. It includes the traditional use and management of lands and resources by using indigenous agricultural methods. It also includes traditional medicines (herbs and spices) and medical practices. For example, traditional medical practices like Ayurveda, Yoga, Unani, Siddha, and Naturopathy are recognised in India.

Ways of expression: Traditional knowledge is frequently passed down orally from generation to generation and is developed from experience gained over many years and adapted to the local culture and environment. It belongs to everyone as a group and is preserved through tales, songs, folklore, proverbs, cultural values, beliefs, rituals, etc. Indigenous people follow oral traditions, including dances, paintings, carvings, and other artistic expressions, that have been practised and passed down through millennia.

3. Threats to Traditional Knowledge

Traditional knowledge has faced centuries of discrimination and exploitation through various means such as colonisation (earlier), capitalism (through MNCs, etc) and ever-increasing consumerism. Some of these threats include the following:

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

Language threat: Indigenous languages and dialects preserve enormous amounts of traditional knowledge, such as Ayurveda in Sanskrit. These languages have been at the receiving end of colonial exploitation and modern lifestyles.

External pressures: The traditional methods of preserving or transmitting knowledge to future generations are also threatened by external pressures. These include migration, environmental pressures, the impact of modern lifestyles, disruption of traditional ways of life, and the impact of globalisation, etc.

Biopiracy: Biopiracy is the commercial exploitation of biochemicals or genetic materials that occur naturally.

Generally, traditional knowledge consists of many biological features and genetic diversity of the natural environment and is transmitted from generation to generation.

One prominent example is the multinational corporation's patenting of the medicinal qualities of the turmeric plant, even though the plant has been used for thousands of years in Indian Ayurvedic medicine.

Need to protect Traditional Knowledge

The preservation of traditional knowledge is crucial because it plays a crucial role in the social and physical environment of a community.

Protecting Indigenous culture and identities: Traditional knowledge and languages are a significant way to maintain and preserve Indigenous cultures and identities and promote well-being.

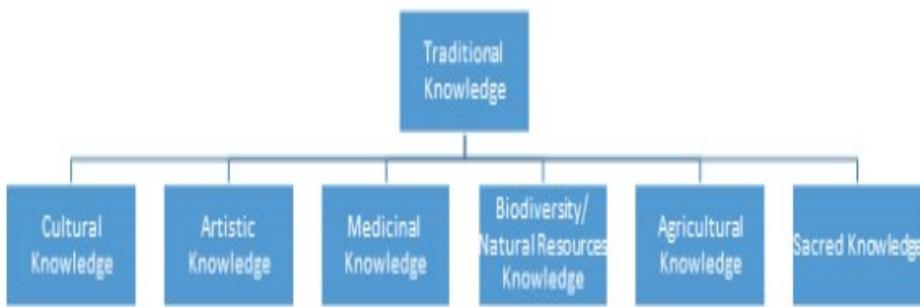
Protecting livelihoods: Traditional knowledge is one of the sources of livelihood for indigenous people, which must be protected.

Health benefits: As traditional knowledge is connected with environment and spirituality, they are important to well-being. Further, traditional medicines can provide health benefits to a large population, like in India.

Ecological benefits: Traditional knowledge presents enormous opportunities to conserve forests and biodiversity. For example, sacred groves or forest temples are one of the methods to conserve biodiversity.

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

4. Different types of Traditional Knowledge



Transition from traditional to Western knowledge

The transition from traditional to Western knowledge in India marked a profound shift in the way learning was conceived, transmitted, and institutionalized. Traditional Indian education, rooted in the **Gurukula** system and temple-based learning centers such as Nalanda and Takshashila, emphasized holistic development — blending philosophy, science, arts, and ethics within the framework of **Sanatana Dharma**. Knowledge was viewed as sacred (**Vidya**), aimed at self-realization and societal harmony rather than material gain. Oral traditions, Sanskrit texts, and regional commentaries ensured the continuity of indigenous sciences, including Ayurveda, astronomy, mathematics, metallurgy, and linguistics.

With the advent of British colonial rule, education underwent Westernization through the introduction of the English language, new curricula, and modern institutions. The focus shifted from spiritual and moral education to empirical, utilitarian, and job-oriented learning. This transition created a divide between traditional knowledge systems and Western scientific paradigms. However, it also facilitated the documentation and global exposure of Indian heritage, paving the way for a contemporary synthesis — where modern education increasingly seeks to reintegrate the wisdom of Indian Knowledge Systems (IKS) with modern scientific inquiry and innovation.

5. Historicity of Indian Knowledge Systems (IKS)

The IKS finds its origins in the Vedic period (circa 1500–500 BCE), marked by the compilation of the Vedas, which are considered the foundational texts of Indian civilization. The Rigveda, Yajurveda, Samaveda, and Atharvaveda encompass various aspects of life, including cosmology, spirituality, and ethics. Supplementary texts like the Upanishads delve into metaphysics, exploring the nature of the self (Atman) and ultimate reality (Brahman). Epics and Classical Texts: The Ramayana and Mahabharata are not only epic narratives but also repositories of moral and ethical guidance. The Bhagavad Gita, part of the Mahabharata, is a philosophical treatise that continues to inspire scholars and practitioners globally. Classical works like Kalidasa's Shakuntala and Patanjali's Yoga Sutras emphasize literature and holistic well-being, respectively. Philosophy: Six classical schools of Indian philosophy Nyaya, Vaisheshika, Samkhya, Yoga, Mimamsa, and Vedanta form the foundation of intellectual discourse, emphasizing logic, metaphysics, and spirituality. Scientific and Mathematical Contributions India has been a cradle of scientific innovation since ancient times, with contributions that have significantly shaped global knowledge.

Mathematics: Indian mathematicians like Aryabhata, Brahmagupta, and Bhaskaracharya pioneered concepts such as zero, decimal systems, and advanced trigonometry. Aryabhata's work, Aryabhata, introduced the concept of Earth's rotation and revolution, while Brahmagupta formulated rules for solving quadratic equations. Astronomy: Indian astronomers developed sophisticated models to predict celestial movements.

Varahamihira's Brihat Samhita combined astronomy with meteorology and astrology, while Aryabhata accurately calculated the Earth's circumference. Medicine: Ayurveda, India's traditional system of medicine, emphasizes holistic healing through herbal remedies, dietary practices, and therapeutic techniques. Sushruta's Sushruta Samhita and Charaka's Charaka Samhita are seminal texts in surgery and internal medicine, respective Ancient Libraries and Educational Institutions The dissemination and preservation of knowledge were integral to Indian civilization. Educational institutions and libraries became centers of learning, attracting scholars from across the world. Nalanda University Established around the 5th century CE, Nalanda was a global hub of education, housing a vast library (Dharmaganja) with texts on a wide range of subjects. It hosted students and scholars from China, Korea, and Central Asia. Takshashila: Considered one of the earliest universities (circa 600 BCE),

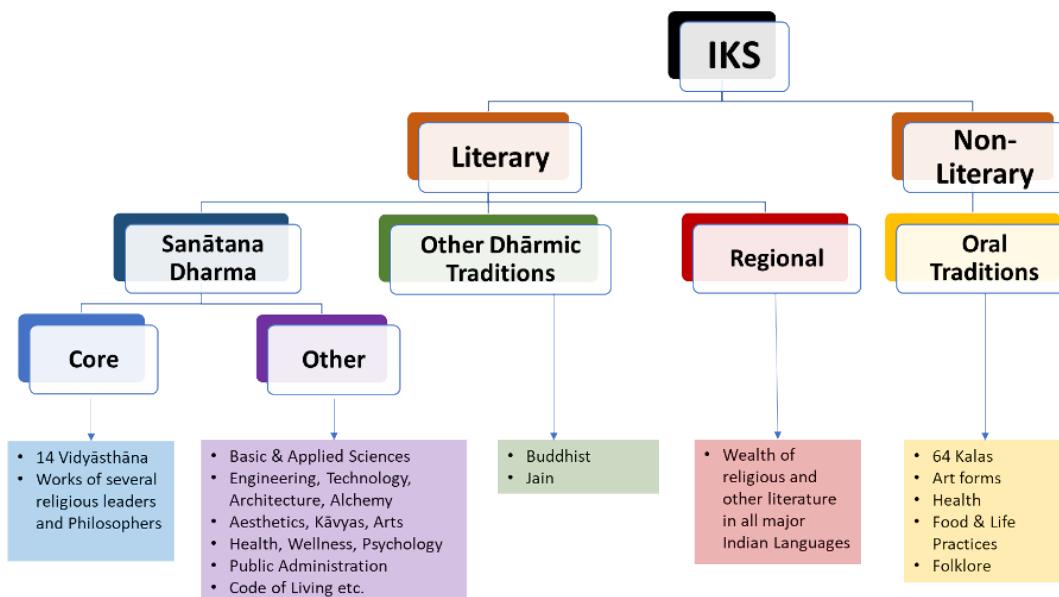
IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

Takshashila offered education in subjects like medicine, law, and military science. Libraries and Manuscripts: Manuscripts written on palm leaves and birch bark were meticulously preserved in temples, monasteries, and private collections. Scripts like Brahmi, Kharosthi, and later Devanagari played crucial roles in documenting knowledge. Architectural texts such as Manasara, Mayamata, and Samarangana-sutradhara which also included science and technology.

6. The IKS Corpus - A Classification Framework

IKS Corpus

The vast corpus of Indian Knowledge Systems can be broadly classified into two parts the Literary Part and the Non-Literary Part. These two streams together represent the holistic nature of India's intellectual, scientific, and cultural heritage, encompassing both written and oral traditions.



6.1. The Literary Part

The literary Part of IKS represents the textual and written body of knowledge. It is further divided into two major component the Sanatana Dharma Corpus and other Dharmik Literature--, which together cover an extensive range of philosophical, scientific, and artistic disciplines.

(a) The Sanatana Dharma Corpus

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

The Sanatana Dharma Corpus forms the foundational framework of Indian civilization. Its core scriptures include the Vedas and Vedangas, which are considered the primary building blocks of Sanatana Dharma and the ultimate sources of sacred and scientific wisdom. These core texts are supplemented by a wide range of literature aligned with the principles of Sanatana Dharma, encompassing diverse fields such as mathematics, astronomy, aesthetics, engineering, and technology.

For example, the mathematical foundations used in astronomical calculations, particularly those related to Yuga cycles, illustrate how scientific inquiry was deeply interwoven with metaphysical concepts. Most of these works were composed in Sanskrit, though later regional languages often retold, adapted, or contextualized these ideas to make them accessible to broader audiences.

(b) Other Dharmik Literature

Alongside the Sanatana Dharma texts, significant contributions were made through Buddhist and Jain literature, collectively referred to as Other Dharmik Literature. These traditions produced vast bodies of knowledge, particularly between 500 BCE and the early centuries CE, contributing richly to mathematics, natural sciences, and philosophy.

Buddhist literature incorporated mathematical concepts and extended into practical sciences such as --maritime activity, shipbuilding, and alchemy. A notable example is Rasaratnakara by Nagarjuna (1st century CE), one of the earliest treatises on alchemy.

Jain literature, on the other hand, includes canonical sacred texts that integrate mathematics as a core discipline (Ganitanuyoga). Works such as the Tattvartha Sutra and later mathematical explorations by scholars like Madhavacharya demonstrate attempts to quantify complex natural phenomena for instance, estimating the number of species as 2^{96} .

6.2. The Non-Literary Part

The Non-Literary Part of the IKS corpus comprises oral traditions and unwritten knowledge systems transmitted through generations. These include health traditions, performing arts, and the celebrated 64 Kalas the classical art forms encompassing music, dance, painting, sculpture, and craftsmanship, among others. This oral component highlights the dynamic, lived aspect of Indian knowledge, ensuring its continuity and adaptability over millennia.

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

Sanatana Dharma and the Sciences Within the broader Sanatana tradition, extensive contributions were made in both basic and applied sciences. These encompass mathematics, astronomy, plant sciences (Vriksha Ayurveda), engineering, and technology, with practical advancements seen in metalworking, shipbuilding, dam construction, and watershed management. The corpus also includes knowledge of alchemy, cosmetics, perfumes, dyes, town planning, and architecture revealing a sophisticated understanding of material and environmental sciences.

The health and wellness traditions, especially Ayurveda, form another cornerstone of this heritage, as reflected in texts such as the Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya. Additionally, the philosophical systems, Yoga, Sankhya, Upanishads, and Vedanta explore aspects of psychology, consciousness, and mental well-being, thereby integrating science with spirituality.

Complementing these are the Nitiśāstras, which serve as guides to ethical conduct and governance. They are divided into Rāja-nīti (principles of public administration and governance) and Sāmānya-nīti (codes of ethics and morality), ensuring the moral and social order of society. The corpus also celebrates aesthetics, poetry (Kāvyas), and performing arts, reflecting the refined cultural sensibility of ancient India.

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

Modern Subjects	Chaturdasa Vidyas
Mathematics	Jyotisha and Kalpa
Science	Atharva Veda- Physics Ayurveda- Botany, Biology, Zoology, Chemistry
Economics	Arthashastra
Architecture	Jyotisha and Kalpa in the form of building fire altars for Vedic sacrifices. Agama Shastra as well
Astronomy	Jyotisha which is a combination of Mathematics, Astronomy and Astrology
History, Geography	Puranas
Languages	Siksha- Pronunciation Vyakarana- Grammar Chandas- Prosody Nirukta- Etymology of the Vedic words All these are used in learning of the most important language which is relevant even today, i.e. Sanskrit. It is after all the basis for Computers!
Art	Shilpa Shastra and Agama Shastra
Music	Gandharveda
Sports	Dhanur Veda
And many many more...	

7. Vedic Corpus

Veda means “Knowledge.” It is a Sanskrit word from the root “Vid,” which means finding, knowing, acquiring, or understanding. What you acquire or understand is knowledge. The term Veda is the treasure house of all knowledge and all Śāstras. It is eternal asset of India. The word Veda is derived from the root vid. The root vid has got four meanings and four types of formation.

"vetti veda vido jñāne vinte vido vicāraṇe /

vidyate vido sattāyāṁ lābhē vindati vindate //"

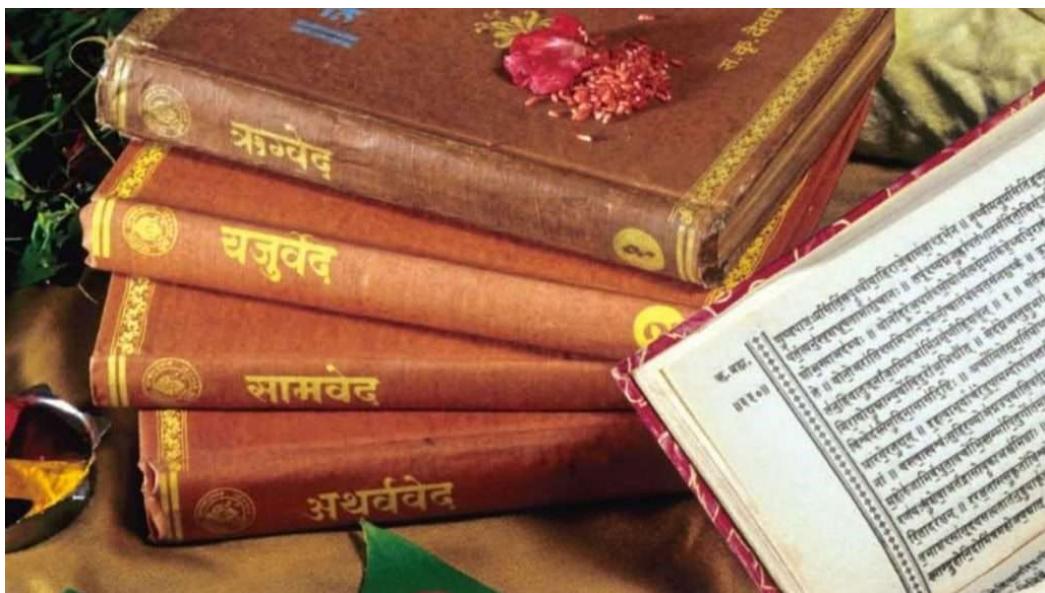
Curiously enough all these four meanings of the root satisfy the meaning of Veda. Sāyaṇa says

"vidanti jānanti vidyante bhavanti vinte vicārayati vindate labhante sarve manusyāḥ sattvavidyāṁ yairyęsu tathā vidvāṁsaśca bhavanti te vedāḥ."

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

The ideas, teachings, and practices described in the Vedas formed the basis for the six major schools of Hindu philosophy – Nyaya, Vaisheshika, Samkhya, Yoga, Mimamsa, and Vedanta.

The Vedas (word of Sanskrit origin, translating to ‘Knowledge’ or ‘To Know’), as the records point out to be originated in the Indian Sub-continent, and its written form origin dates back to 1600 BCE. The Rig Veda, the oldest of 4 Vedas, is authored in and around 1600 BCE. However, no definite date can be ascribed to the composition of the Vedas as the generational descend of the texts in Vedic periods was by literary oral tradition, which was then a precise and elaborate technique.



There are four Vedas: Rig Veda, Yajur Veda, Sama Veda, and Atharva Veda, and all of them together are attributed to as ‘Chaturveda.’ The Rig Veda serves as the principal one and all three, but the Arthaveda agree with one another in form, language, and content. Each Veda has been subclassified into four major text types or four portions.

The Samhitas, the most ancient layer of text in the Vedas, consisting of mantras, hymns, prayers, and benedictions which has in literary terms put together or joined the other three texts; The Aranyakas, which constitute the philosophy behind the ritual sacrifice, The Brahmanas, which in turn has the commentary on hymns of four Vedas and The Upanishads, which consist of conversations between teachers and students, clarify the Vedas’ philosophical message.

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

7.1. Rigveda



Rig Veda, one of the oldest texts of the Indo-Aryan Civilization still extant, is an ancient Indian collection of Vedic hymns. Two Sanskrit words Rig and Veda constituting it translates to ‘praise or shine’ and ‘knowledge’ respectively. A collection of 1,028 hymns and 10,552 verses is organized into ten different Mandalas (or the books; Sanskrit). It is the principal and oldest of the four Vedas. Each Mandala has many Anuvak and Anuvak has many Sukta (hymns - group of verses) in which have been praise of deities.

The cultural-linguistic records, mainly the variation in the form of Sanskrit used (from present-day), point out the origin of the Rig Veda to have been around 1600 BCE. However, a wider approximation of 1700–1100 BCE has also been given by experts. The initial written Rig Veda dates back to the 1st millennium BCE, although the extant ones today date back only somewhere between the 11th and 14th centuries, primarily due to the ephemeral nature of the manuscript materials, palm leaves or birch barks.

But what is truly worth speculating is the pre-dominant discussions about cosmology, mystic forces, the existence of the Universe, and other metaphysical issues bringing the central theme of metaphysics ‘not about what exists, but about what it is to exist.’ Shifting from the

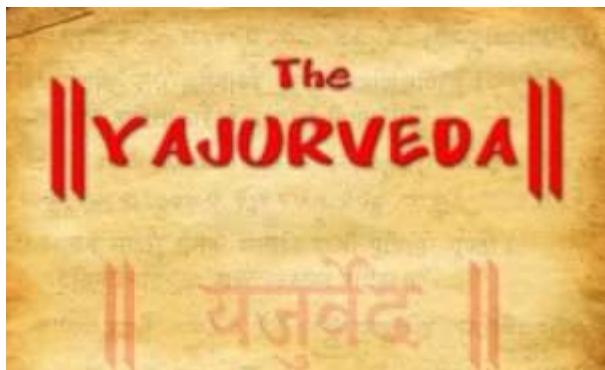
Rigveda, in contemporary Hinduism, has been a reminder of the ancient cultural heritage and point of pride for Hindus, with some hymns still in use in major rites of passage ceremonies. Still, to some experts, the literal acceptance of most of the textual essence is long gone. Some chief/popular/important Sukta form Rigveda: Purush Sukta (Mandala-10, Sukta-90) Nasadiya Sukta (Mandal-10, Sukta-129), Hiranyagarbha Sukta (Mandal-10, Sukta-121) Saraswathi Sukta, Vak Sukta or Devi Sukta, Bhoo Sukta, Shree Sukta, Shakha of Rigveda: Though Rigveda is said to have had 21 Shakhas, only five have survived. which are: Shakala,

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

Bashkala, Aashvalayana, Shankhayana and Mandukayana. From which two shakha currently popular/surviving are : Shakala and Bashkala.

The Brahmana Grantha, Aaranyaka and Upanishad associated with them are as follows: Shakala - Aitareya Brahmana, Aitareya Aaranyaka and Aitareya Upanishad which contains Mahavakya - *Prajananam Brahma*. Bashkala - Kaushitaki Brahmana, Kaushitaki Aaranyaka and Kaushitaki Upanishad.

7.2. The Yajur Veda



Yajur Veda, of Sanskrit origin, is composed of Yajus and Veda; the two words translate to ‘prose mantras dedicated to religious reverence or veneration’ and knowledge. Third of the four canonical texts of the Hindu dharma, this liturgical collection is famous as the ‘book of rituals.’ The ancient Vedic text is a compilation of rituals offering formulas or the prose mantras to be chanted or muttered repeatedly by a priest. At the same time, an individual performs the ascertained ritual actions before the sacrificial fire or the Yajna.

Yajur Veda is the second of the four Vedas after Rig Veda. The Yajur Veda has two broad branches, viz. Shukla Yajur Veda and Krishna Yajur Veda. The difference between these two branches is now briefly explained. Every Veda has two components: Mantra and Brahmana. The Upanishads are part of Brahmana. In Krishna Yajur Veda these two (Mantras and Brahmana) are given together. In Shukla Yajur Veda, these are separated. Shukla means ‘brightness’. Krishna means ‘dark’.

Since the Mantra (referred to alternately as Samhita) and Brahmana are separated in Shukla Yajur Veda, it is relatively easier to grasp, and hence the term ‘brightness’ or ‘Shukla’ is used. In contrast, in Krishna Yajur Veda, the two major components are intertwined, making it relatively more challenging to decipher. These matters have been elaborately explained by

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

Sayana Acharya in his treatise on Shukla Yajur Veda. He was proficient in both these branches of Yajur Veda.

Yajur Veda is one among the four Vedas. Yajur Veda had at one time 101 Shakha. Presently there are only six existing shakhas. These include four of Krishna Yajur Veda: Taittireeya, Maitrayani, Katha, and Kapishchal. Shukla Yajur has two Shakhas: Kanva and Madhyandini.

7.3. The Sama Veda

Widely referred to as the ‘Book of Songs,’ it is derived from two words, Saman, of Sanskrit, meaning Song, and Veda, meaning Knowledge. The words of Rig Veda are put to music and are to be sung rather than just read or recited. Sama Veda, also the Veda of Melodies and Chants, is the third in the four principle scriptures of Hinduism – Four Vedas. The Samaveda is shortest of all the four Vedas. It consists of 1549 verses.

The Sama Veda has served as the principal roots of the classical Indian music and dance tradition, and proudly the tradition boasts itself as the oldest in the world. Two of the 108 Upanishads are still embedded in the Sama Veda, namely; Chandayoga Upanishad and Kena Upanishad. Upanishads, in a way the essence of Vedas, are ancient Sanskrit texts that contain some of the central philosophical concepts and ideas of Hinduism and are also shared in some other religions like Buddhism and Jainism. The text of the Samaveda has three recensions: Kauthuma, Raayaniya, and Jaiminiya. The Samaveda is divided into two sections: Part I has Gana melodies, while Part II contains Archika, a three-verse book. A verse in the arcika books relates to a tune in the song books. The Gana collection is separated into Gramageya and Aranyageya sections, whereas the Arcika section is split into Purvarcika and Uttararcika sec According to Sage Patanjali, the Samaveda had 1000 recensions (Shakhas). However, as of now, only three recensions have survived. These are known as: (1) Kauthuma (2) Jaiminiya (3) Ranayaniya. tions.

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

7.4. The Atharva Veda



The fourth and final of the revered text of the Hindu dharma, the Vedas, the Atharva Veda, in short, is depicted as “knowledge storehouse of Atharvāṇas” Atharvāṇas meaning, formulas, and spells intended to counteract diseases and calamities, or “the procedures for everyday life.”

A late addition to the Vedic scriptures, the word owes its roots to Sanskrit, and the widely used epithet for the scripture is ‘the Veda of Magic formulas.’ It sides with popular culture and tradition of the day rather than preaching religious and spiritual teachings. It is more often viewed not in connection with the three other Vedas but as a discrete scripture.

It is a collection of 730 hymns with about 6,000 mantras, divided into 20 books, with three Upanishads embedded in it; Mundaka Upanishad, Mandukya Upanishad, and Prashna Upanishad. However, not all but a considerable part of it is the adaptation of Rig Veda, the most ancient of all Vedic Scripture.

The Samhitas in the Atharva Veda have written accounts of Surgical and medical speculations; it includes mantras and verses for treating various ailments. For instance, the verses in hymn 4.15 of the recently discovered Pippalada version of the Atharvaveda discuss dealing with an open fracture and wrapping the wound with Rohini plant (*Ficus Inectoria*, native to India). And so have speculations been made about remedy from herbal medicines, on the nature of man, life, good and evil and even spells and prayers to gain a lover.

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

8. Vedangas

Vedangas literally mean the limbs of the Vedas. They are six in number. 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. The six Vedangas are Siksha, Chhanda, Vyakarana, Nirukta, Jyotisha and Kalpa.

Exploring the Six Pillars of Vedangas for Vedic Knowledge



The six Vedangas collectively furnish the essential tools and knowledge required for the accurate interpretation, recitation, and application of the Vedas in Hindu religious and ritual practices. These auxiliary disciplines serve as the supportive pillars of Vedic scholarship, offering indispensable guidance to scholars and practitioners.

Difference between vedas and vedangas:

The Vedas and Vedangas are both important parts of Hinduism, but they have different purposes and structures:-

- 1. Purpose:** The Vedas are holy texts that teach about the origin of the world and the reason for existence. The Vedangas are ancillary studies that help maintain the integrity of the Vedic tradition.
- 2. Structure:** The Vedas are divided into four collections, called the Rig, Sarna, Yajur, and Atharva Vedas. The Vedangas are six in number: Siksha, Chhanda, Vyakarana, Nirukta, Jyotisha, and Kalpa.

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

3. Content: The Vedas contain hymns, incantations, and rituals. The Vedangas include insights into meters, grammar, and linguistic analysis.

4. Origin: The Vedas are some of the world's oldest religious scriptures, composed in archaic Sanskrit by Indo-European-speaking peoples in northwest India around 1500–1200 BCE. The Vedangas are the last treatises of Vedic literature.

The vedangas are compared to the human body as ““Chanda: Paadau Tu vedasya Hastau Kalpoatha Patayate Jyotoshamayanam Chakshurniruktam Shrotramuchyate || Shikshaa ghraanam tu Vedasya Mukham Vyaakaranam Smrutam Tasmatsangamadhityaiva Bhrahmaloke mahiyate”

Vedangas compared to Limbs of Human Body:

VEDANGA	LIMBS COMPARED WITH
Chandah	Legs
Kalpa	Hands
Jyotisa	Eyes
Nirukta	Ears
Siksha	Nose
Vyakaranam	Face

8.1. Shiksha: Shiksha (śikṣā) is driven by the phonetics and the phonology of pronunciation, as a process of internalization. Shiksha means ‘Instruction in Reciting’, i.e., correct pronunciation, accentuation etc., of the Vedic texts. Shiksha is represented as ‘Nose’ in Veda Purusha, as the nose enables us to breathe and sustains life forces; hence, Shiksha is the life breath of the Vedic Mantras. Shiksha in Vedangas enlists the rules of phonetics (sound of syllables, pronunciation). Phonetics is most important in the case of the Vedic language because any changes in sound lead to changes in results and effects (Svaravarnadi Ucchaarana Prakasho Yatropadishyate Sa Shikshaa) (Sayanaacharya).

8.2. In Shikshavalli - Varna Shuddhi (syllable purity), Swara Shuddhi (tonal purity), Matra Shuddhi (durational purity), Balam (force of articulation), Saama (evenness), Santaana (continuity) are the chapters mentioned for understanding of Shiksha Vedanga.

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8.3. Kalpa: Kalpa deals with the aspects inducing a person into vedic action. The mastery in the other 5 vedangas mentioned so far is aimed to perform the actions mentioned in kalpa successfully. In a way, it is like a manual which will give details like a) how a ritual should be done; b) what are the functions of brahmacharis, grihastas, sannyasis etc.c) what ritual involves which mantra, devata, materials d) how many priests should perform a given ritual, e) what vessel of what shape, size to be used etc. Kalpa sastra (sutra) has been compiled by many sages like, Apasthamba, Bhodayana, Vaikhanasa, and others. There are four types of

8.4. Kalpasutras:

- i)Shrauta-sutras, dealing with Shrauta sacrifices.
- ii)Grihya-sutras, dealing with the domestic ceremonies.
- iii)Dharma-sutras, dealing with religious and social laws.
- iv)Shulba-sutras, dealing the rules of measurement of the fire-altars etc.

8.5. Vyakarana:

Vyakarna consists of the analysis of grammar and linguistics. It helps in bettering the construction of the words and sentences. And the Vedas regard Vyakarna to be the mouth of the Vedas.

The discipline of Vyakarana, also known as analysis and derivation, involves grammatically describing the Sanskrit language. Among the earliest examples of Vyakarana are Panini's grammar, believed to have been composed around 400 BCE, and the Pratishakaas. The Maheswara Sutras, a set of fourteen sutras, are considered foundational to Sanskrit grammar and are believed to have originated from the rhythmic sounds of Nataraja's Damaru (drum). These sutras serve as the cornerstone of grammatical analysis in Vyakarana.

Panini's magnum opus, the *Aṣṭādhyāyī*, stands as a monumental work in the field of Vyakarana. Comprising four parts, the *Aṣṭādhyāyī* provides comprehensive insights into Sanskrit morphology and syntax:

8.6. Śivasūtra (Maheswara sutra): This section focuses on phonology, providing notations for phonemes specified in fourteen succinct lines. It lays the groundwork for understanding the phonetic structure of the Sanskrit language.

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8.7. Aṣṭadhyāyī: The core of Panini's grammar, this section elaborates on morphology, offering intricate construction rules for forming complex words and sentences. It provides a systematic framework for analyzing the structure and composition of Sanskrit sentences.

Dhātupāṭha: This part contains a list of roots, classifying verbal roots into different categories based on their semantic and grammatical functions. It serves as a reference guide for understanding the fundamental building blocks of Sanskrit verbs.

The commentary on the Vyakarana is called MahaBhashya written by Sage Patanjali. The other commentary was written by Vararuchi.

Gaṇapāṭha: This section comprises a list of classes of primitive nominal stems, providing insights into the diverse forms and declensions of Sanskrit nouns. It aids scholars in identifying and categorizing nominal formations in Vedic texts

8.8. Nirukta

Nirukta, an important Vedanga, is dedicated to the interpretation of Vedic words and their etymology. It is often referred to as the “Ears of Veda Purusha,” symbolizing its role in providing insights into the meanings and derivations of Vedic terms. Nirukta aids in understanding the symbolic and metaphorical aspects of the Vedas by unraveling the deeper meanings embedded within the language of the scriptures.

Nirukta primarily focuses on elucidating the meanings and origins of Vedic words, shedding light on their etymology and semantic nuances. It serves as a key tool for deciphering the linguistic richness of the Vedas, enabling scholars to unravel layers of meaning and symbolism encoded within the ancient texts. By delving into the roots and derivations of Vedic vocabulary, Nirukta facilitates a deeper understanding of the cultural, philosophical, and religious concepts conveyed in the Vedas.

A significant aspect of Nirukta is the Nighantu, a collection of words compiled by the renowned sage Yaska around 600 BCE. The Nighantu serves as a lexicon or glossary of difficult words found in the Vedas, providing valuable insights into their meanings and usage. While several commentaries on the Nighantu exist, Yaska's commentary remains the most prominent and widely studied.

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

One of the fundamental principles of Nirukta is the concept that all names originated from verbs. This principle underscores the dynamic nature of language and the inherent connection between linguistic expression and action. By tracing words back to their original roots in verbs, Nirukta illuminates the profound interplay between language, thought, and reality, offering deeper insights into the philosophical underpinnings of the Vedic tradition.

8.9. Chandas:

Meter, or Chandas, is an essential aspect of Vedic poetry, measuring and dividing Vedic Mantras based on the number of padas in a verse, which are often referred to as “Feet.” Each verse, hymn, or mantra is divided into a specific number of padas, and each pada is further divided by the number of syllables it contains. This distinction forms the basis of a distinct taxonomy within Vedic meter.

For instance, the Gayatri Chanda is a well-known meter consisting of three padas, each containing eight syllables, resulting in a total of 24 syllables in each stanza. Similarly, the Anuṣṭhup meter comprises four padas of eight syllables each, totaling 32 syllables in each stanza. Anuṣṭhup is recognized as the typical shloka of classical Sanskrit poetry, widely used in various literary compositions.

8.10. Jyotisha:

Jyotisha is one of the Vedangas, is dedicated to the study of astronomy and astrology as they relate to the Vedic texts. It is often symbolized as the “Eye of Veda Purusha,” highlighting its role in providing insight into cosmic phenomena and their impact on human life. Through the knowledge of Jyotisha, ancient seers discovered the inner rhythm of cosmic movements and their correlation with the periodic developments and seasons of human existence.

Varahamihira, a renowned astronomer and astrologer, made significant contributions to the field of Jyotisha. He authored the “Pancha Siddhantiika,” which consists of five systems of Jyotisha: Pitamaha Siddhanta, Vasishta Siddhanta, Romaka Siddhanta, Paulisha Siddhanta, and Surya Siddhanta. These Siddhantas provided foundational principles for astronomical calculations and astrological predictions.

Another notable figure in the history of Jyotisha is Bhaskara Acharya, a mathematician and astronomer from the 12th century AD. He described the “Panchanga,” a comprehensive

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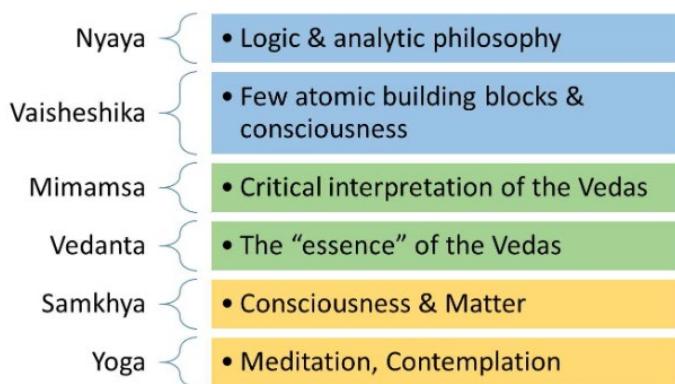
calendar system consisting of five elements: Tithi (lunar phase), Vaara (day of the week), Nakshatra (lunar mansion), Yoga (auspicious combination), and Karana (half of a Tithi). The Panchanga, developed by Bhaskara Acharya, remains widely used across India for determining auspicious timings and conducting various religious and cultural events.

9. Indian Philosophical Schools

Origin of Indian philosophical thoughts can be traced back to the first available literature of the world, i.e., Rgveda. Many hymns like Nāśadīya sūkta, Purusa sūkta, Vāk sūkta, Jāna sūkta, etc., symbolically narrate about the creation of the universe, nature of self, etc. Philosophical discourse flourishes in the Upanisads, the last major part of the Vedic literature.

Philosophical Schools

	Philosopher	System	Text
1	Bṛhaspati	Cārvakadarśana	Bṛhaspatyasūtra
2	Mahāvīra	Jainadarśana	Āgama sāhitya
3	Siddhārtha Gautama	Buddhadarśana	Buddha Tripitaka
4	Kapila	Sāṃkhyyadarśana	Sāṃkhya-sūtra
5	Pātanjali	Yogadarśana	Yoga-sūtra
6	Kaṇāda	Vaiśeṣikadarśana	Vaiśeṣika-sūtra
7	Gautama	Nyāyadarśana	Nyāya-sūtra
8	Jaiminī	Mimāṃsādarśana	Mimāṃsā-sūtra
9	Bādarāyaṇa	Vedāntadarśana	Vedānta-sūtra



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In the Post Vedic period, philosophical thoughts turned into independent schools, such as, Sāṅkhya, Yoga, Nyāya, Vaiśeṣika, Mīmāṃsā, Vedānta, Cārvāka, Jaina and Bauddha. Many schools carried forward the Vedic thoughts and elaborated upon them, whereas some schools developed their thoughts opposing the validity of the Vedas. Thus Indian philosophical thoughts are divided into two categories, viz., Āstika (that which accepts the validity of the Vedas as source of knowledge) and Nāstika (that which denies the validity of the Vedas as source of knowledge).

Cārvaka, Bauddha and Jaina are considered Nāstika schools as they don't take the Vedas as valid source of knowledge. Rest of the six schools come under the āstika category which have agreement in taking the Vedas as valid source of knowledge, though, they have differences among each other.

9.1. Cārvāka

It is the first and foremost nāstika darśana. Tradition names it as lokāyata, meaning, 'which appeals to the mass'. This philosophy is attributed to Brhaspati or his disciple as it has got another name as Bārhaspatya darśana.

Cānakya in his Arthaśāstra, a treatise on public administration and finance, has called Brhaspati as the foremost teacher of Arthaśāstra. This philosophy is believed to be as old as Vedic tradition.

It is an extreme nastika darśana which believes only one means of valid knowledge, i.e., direct perception or pratyakṣa and all other sources of knowledge are not trustworthy or misleading. Since only pratyakṣa is the valid means of knowledge, whatever is not there in its purview is not a true knowledge at all. So according to Cārvāka, not any supernatural power is god, but the king who possesses the power of punishing or rewarding over the people should be considered as god, since we get to know him through direct perception.

9.2. Buddhist Philosophy

The seed of Buddhist philosophy is traced in the teachings of Gautama Buddha (earlier name was Siddhartha) itself. Buddha always emphasised on leading a moral life for the emancipation of human sufferings rather than indulging into philosophical problems. But, the

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later scholars of Buddhism developed a profound philosophy on the platform of the teachings of Gautama Buddha.

Buddhism is non-theistic, and its teachings are not especially concerned with affirming or denying a creator God.

It rejects blind faith in Vedas or other revealed scriptures

Central doctrines include the Four Noble Truths and the Noble Eightfold Path which aim at ending suffering (dukkha).

9.3. Jain Philosophy

The Jaina philosophy is primarily based on the teachings of twenty four tirthankaras, i.e., preachers. Rṣabhadeva is the first tirthankara as the tradition of Jainism maintains. Out of these twenty four tirthaṅkaras, the last two, i.e., Pārvīnātha and Mahāvīra (sixth century B.C.) are historical personalities.

Jainism teaches anekāntavāda (pluralism / multiple viewpoints) — the idea that reality is complex and can't be captured fully by any single perspective.

It emphasizes non-violence (ahimsā), spiritual purity, self-control, and liberation through ethical and ascetic practice.

It posits that only the Kevalīs (those with infinite knowledge) know the full truth; others perceive only parts of it.

10. Vedic philosophical systems

10.1. Samkhya

Samkhya is the oldest of the orthodox philosophical systems, and it postulates that everything in reality stems from **purusha** (self or soul or mind) and **prakriti** (matter, creative agency, energy). It is a **dualist** philosophy, although between the self and matter rather than between mind and body as in the Western dualist tradition, and liberation occurs with the realization that the soul and the **dispositions of matter** (steadiness, activity and dullness) are different.

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

10.2. Yoga

The Yoga school, as expounded by **Patanjali** in his 2nd Century B.C. **Yoga Sutras**, accepts the Samkhya psychology and metaphysics, but is more **theistic**, with the addition of a divine entity to Samkhya's twenty-five elements of reality. The relatively brief **Yoga Sutras** are divided into eight **ashtanga** (limbs), reminiscent of Buddhism's Noble Eightfold Path, the goal being to quiet one's mind and achieve **kaivalya** (solitariness or detachment).

10.3. Nyaya

The Nyaya school is based on the **Nyaya Sutras**, attributed to Aksapada Gautama in the 2nd century B.C. Its methodology is grounded in a system of logic that later became influential for many Indian schools. Its followers hold that obtaining **valid knowledge** (the four sources: perception, inference, comparison, and testimony) is essential to free oneself from suffering. Nyaya also develops criteria by which knowledge is judged valid or invalid.

10.4. Vaisheshika

The Vaisheshika school was founded by **Kanada** in the 6th century B.C. It is an **atomist** and **pluralist** philosophy: all physical objects are composed of atoms. Additionally, it regards **Brahman** (in a metaphysical sense) as the force causing consciousness in atoms. Because their metaphysical views are close, Vaisheshika and Nyaya eventually merged. However, Vaisheshika originally accepted only two sources of valid knowledge: perception and inference. ([IAS Gyan][1])

10.5. Purva Mimamsa

Also known simply as Mimamsa, this school's chief objective is to interpret and uphold the authority of the Vedas. It insists on **unquestioning faith in the Vedas** and the ritual performance of Vedic fire sacrifices as essential to maintain cosmic order. While it accepts logical and philosophical teachings from other schools, Mimamsa holds that **salvation** must be earned through **action in accordance with Vedic prescriptions**. Over time, Mimamsa's views shifted somewhat to include doctrines of Brahman and liberation, allowing that the soul can eventually escape its constraints via enlightened action.

IKS (HS271TA) Unit 1 : Introduction of Indian Knowledge Systems (IKS): Perception and prologue, Historicity of IKS, Indian Traditional Knowledge, Nature and scope, kinds of traditional knowledge, Transition from traditional to western knowledge. The IKS Corpus, Vedic Corpus, Indian Philosophical Systems.

10.6. Vedanta (Uttara Mimamsa)

The Vedanta school focuses on the **Upanishadic** or spiritual portion of the Vedas (rather than the ritualistic Brahmanas). It emphasizes **meditation, self-discipline, and spiritual connection** over ritualism. Vedanta is divided into six major sub-schools, each interpreting the texts differently:

1. **Advaita** (non-dualism) — holds that the individual soul (Atman) and Brahman are ultimately one.
2. **Visishtadvaita** — teaches that the Supreme Being (Vishnu) has definite attributes; the world and individual souls are distinct yet inseparable modes of Brahman.
3. **Dvaita** — posits three separate realities: Vishnu, the eternal soul, and matter.