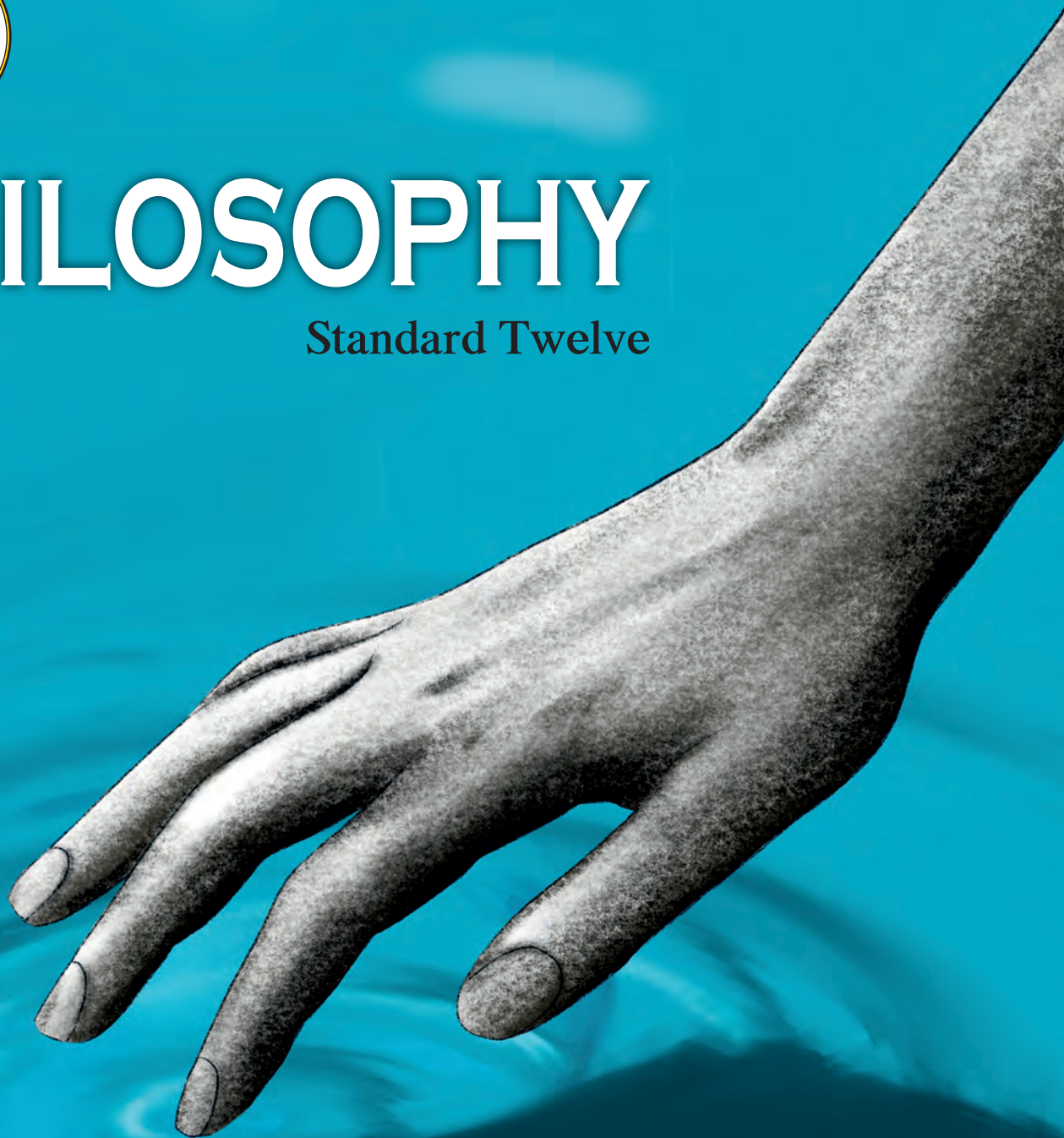




PHILOSOPHY

Standard Twelve



The Constitution of India

Chapter IV A

Fundamental Duties

ARTICLE 51A

Fundamental Duties- It shall be the duty of every citizen of India—

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities, to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
- (k) who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years.

The coordination committee formed by G.R.No.Abhyas-2116/(pra.kra43/16)SD-4 dated 25.4.2016 has given approval to prescribe this textbook in its meeting held on 30.01.2020 and it has been decided to implement it from academic year 2020-2021.

Philosophy

Standard Twelve



**Maharashtra State Bureau of Textbook Production and
Curriculum Research, Pune.**



A7G2D2

The digital textbook can be obtained through DIKSHA APP on a smartphone by using the Q.R.Code given on title page of the textbook and useful audio-visual teaching-learning material of the relevant lesson will be available.

First Edition : 2020

Reprint : October 2021

© **Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune - 411 004.**

The Maharashtra State Bureau of Textbook Production and Curriculum Research reserves all rights relating to the book. No part of this book should be reproduced without the written permission of the Director, Maharashtra State Bureau of Textbook Production and Curriculum Research, 'Balbharati', Senapati Bapat Marg, Pune 411004.

Philosophy Committee

Smt. Mrinalinee Vanarase, Chairman
Dr. Deepti Gangavane, Member
Dr. Harishchandra Navale, Member
Dr. Sharmila Virkar, Member
Prof. Varsha Jape, Member
Dr. Seema Deshpande, Member
Dr. Rajesaheb Maradkar, Member
Dr. Shridhar Akashkar, Member
Smt. Varsha Sarode, Member-Secretary

Philosophy Study Group

Dr. Nagorao Kumbhar
Prof. Shital Yerule
Prof. Madhavi Kavi
Prof. Eshwarappa Mathwale
Dr. Meenal Katarnikar
Prof. Ajay Shingade
Dr. Shantaram Bute
Dr. Santosh Thakre
Dr. Sachin Khokale
Prof. Vijay Karekar
Prof. Vidya Garkhedkar
Prof. Tanuja Yelale

Authors

Smt. Mrinalinee Vanarase
Dr. Vaijayanti Belsare
Dr. Deepti Gangavane
Dr. Sharmila Virkar
Dr. Harishchandra Navale
Dr. Rajesaheb Maradkar
Dr. Shridhar Akashkar
Dr. Meenal Katarnikar
Prof. Vidya Garkhedkar

Translation

Dr. Kranteegita Bhosale

Cover

Smt. Madhura Pendse

Pictures and Illustrations

Shri. Devdatta Balkawade

Typesetting

DTP Section, Balbharati, Pune

Paper

70 GSM Creamwove

Print Order

Printer :

Production

Sachchitanand Aphale
Chief Production Officer

Prabhakar Parab,
Production Officer

Shashank Kanikdale,
Asst. Production Officer

Coordination

Smt. Varsha Sarode
Assistant Special Officer,
History and Civics

Publisher

Vivek Uttam Gosavi, Controller
Maharashtra State Textbook Bureau,
Prabhadevi, Mumbai - 400 025.



The Constitution of India

Preamble

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC and to secure to all its citizens :

JUSTICE, social, economic and political ;
LIBERTY of thought, expression, belief, faith and worship ;
EQUALITY of status and of opportunity ;
and to promote among them all
FRATERNITY assuring the dignity of the individual and the unity and integrity of the Nation ;

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.

NATIONAL ANTHEM

Jana-gana-mana-adhināyaka jaya hē
Bhārata-bhāgya-vidhātā,

Panjāba-Sindhu-Gujarāta-Marāthā
Drāvida-Utkala-Banga

Vindhya-Himāchala-Yamunā-Gangā
uchchala-jaladhi-taranga

Tava subha nāmē jāgē, tava subha āsisa māgē,
gāhē tava jaya-gāthā,

Jana-gana-mangala-dāyaka jaya hē
Bhārata-bhāgya-vidhātā,

Jaya hē, Jaya hē, Jaya hē,
Jaya jaya jaya, jaya hē.

PLEDGE

India is my country. All Indians
are my brothers and sisters.

I love my country, and I am proud
of its rich and varied heritage. I shall
always strive to be worthy of it.

I shall give my parents, teachers
and all elders respect, and treat
everyone with courtesy.

To my country and my people,
I pledge my devotion. In their
well-being and prosperity alone lies
my happiness.

Preface

Dear Students,

The subject Philosophy consists of a fundamental study of the problems that mankind has been facing for last many centuries. It is a peculiarity of Philosophy that it studies a particular subject-matter holistically and critically at the same time.

In the previous year, you have been introduced to this subject and its three main branches. The textbook of the twelfth standard has been structured keeping in mind the fact that your curiosity about this subject must have increased now. This year you will be acquainted with the prominent concepts and theories in these branches of Philosophy, namely; metaphysics, epistemology and ethics. Alongwith these you will also be introduced to the branch called aesthetics.

Considering the scope and the significance of metaphysics, three lessons in this book discuss the problems in this branch of Philosophy. At the same time, they also inform you about the contemporary scientific views about these problems. This will help you understand the relation between Philosophy and Science. The fourth Chapter is devoted to epistemology. It discusses the concept and the sources of knowledge. The fifth Chapter deals with the question how should we evaluate our actions in ethical terms. Chapter six explains the nature of aesthetic attitude and provides information regarding the important concepts in the Philosophy of art. Like last year, there is a Chapter discussing the interrelations between science, technology and Philosophy. While taking a review of the development of science and technology, it also acknowledges the ethical problem that this development gives rise to.

As in the previous year, the thinking about all these subjects in both - the Indian and the Western tradition has been reviewed this year too! This will make you understand the peculiarities of both the traditions. You will also understand the similarities and differences between them.

In order to explain the abstract concepts and theories, instances that you know of have been used. At the same time, this year the terms in philosophical terminology have also been introduced. Though the study of this text-book may satisfy your curiosity about Philosophy to a certain extent, we believe that you will have the urge to study this subject in a deeper and comprehensive manner. Do use literature other than the text such as books, informative websites on the internet, encyclopedia and other audio-visual media for such a study. Material kept on Q.R. code is also for your help. Best wishes for a joyful and fruitful study.



(Vivek Gosavi)

Director

Pune

Date : 21st February 2020

Bharatiya Saur : Falgun 2, 1941

Maharashtra State Bureau of Textbook
Production and Curriculum Research, Pune

- For the Teachers -

An Approach to Teaching Standard XII Philosophy

The textbook for 11th standard primarily aimed at introducing Philosophy in a way that students would find interesting and engaging. The present textbook assumes that this purpose is fulfilled and students are more curious about the subject. The book is designed by keeping knowledge-constructivism and activity-based, student-centric learning in focus.

The book includes lessons on Metaphysics, Epistemology, Ethics and Aesthetics as well. Three Chapters are devoted to Metaphysics, explaining main concepts in metaphysics, theories of causation and discussions related to self. This year too, both – Indian and Western streams of thoughts are presented by briefly introducing their key-concepts and theories. Each lesson also introduces today's scientific thought related to that lesson at the end. The last lesson discusses the relationship between science, technology and Philosophy along with some pertinent issues related to Science and Technology. This will help students understand the relevance and the importance of Philosophy in present times.

Along with giving fundamental information about Philosophy the book also aims at generating interest about philosophical thinking and develop perspectives towards life. The activities given in every lesson are designed with the same purpose. We believe that teachers will certainly help students and encourage them for this. Teaching and learning can also be enhanced with the help of other means as newspapers, documentaries and authentic websites on the internet.

Textbooks of 11th and 12th will together provide a solid base for further studies in Philosophy. Supplementary information given on QR code will also be useful in this regard.

Competency Statement

No.	UNIT	COMPETENCY
1	There is something, but what it is?	<ul style="list-style-type: none"> • Explain the concept of the ‘ultimate reality’ • Take an overview regarding the number and the nature of ultimate reality • Compare various opinions in Indian and western tradition • State scientific perspective about reality.
2	What is Cause?	<ul style="list-style-type: none"> • Discuss the relationship between cause and effect • Analyze thoughts / positions regarding causation in Indian and western tradition • Compare philosophical and scientific perspective regarding causation
3.	Who am I?.... What am I?	<ul style="list-style-type: none"> • Explain the concept of ‘self’ in philosophy • State the perspectives regarding self in Indian and western philosophy • State the salient points regarding self awareness in science
4.	How do we know?	<ul style="list-style-type: none"> • Show the relationship between Prama, Pramata and Praman • Explain the epistemological thought (praman vichar) in Nyaya philosophy in details. • Analyze the concept of ‘knowledge’ in western epistemological tradition • Make distinction between Empiricism and Rationalism • Evaluate Empiricism and Rationalism • Underline the distinction between the processes of knowing for individual and for society with the help of scientific perspective
5.	What to do and why?	<ul style="list-style-type: none"> • Explain Karma theory and the concept of Purushaartha in Indian philosophy • State how moral philosophy is discussed in Charvaka, Jain and Baudhha Darshana • Classify types of hedonism • Compare deontology and consequentialism • Apply moral doctrines while identifying appropriate action or evaluating any action • Analyze the problems in moral philosophy in the light of evolution
6.	Following the path of art	<ul style="list-style-type: none"> • Know the importance of aesthetic experience in human life • Explain the characteristics of aesthetic perspective • Discuss various philosophical thoughts regarding the concept of beauty • Identify different components of artistic creation and the relationship between them in any art form of one’s choice • Understand objective elements in aesthetic and artistic experience from scientific perspective
7.	Science, Technology and Philosophy	<ul style="list-style-type: none"> • Discuss various problems philosophy is facing due to increasing effects of technology on human life • Exemplify and state different perspectives regarding man-nature relationship • Explain the relationship between the laws of nature and human behavior • Discuss problems in environmental philosophy • Know what is alternative technology and discuss what is alternative life-style

Contents

- 1. There is something, but what it is?1**
- 2. What is Cause?17**
- 3. Who am I?... What am I?29**
- 4. How do we know?.....40**
- 5. What to do and why?59**
- 6. Following the path of art80**
- 7. Science, Technology and Philosophy95**

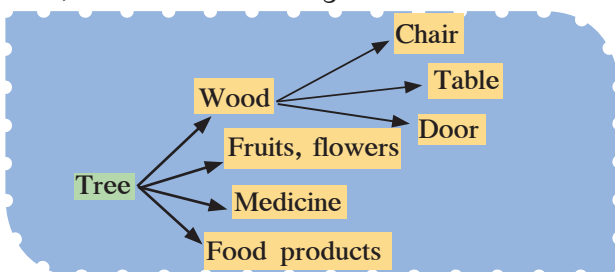
1. There is something, but what it is?

- **Introduction**
- **Ultimate Reality: Number and Nature**
- **Metaphysics in Indian philosophy**
- **Metaphysics in Western philosophy**
- **The scientific perspective**

Introduction

In the previous year, while getting introduced to Philosophy, we have taken the three major questions that it deals with and a brief account of the branches that are developed from them. Metaphysics is the branch of Philosophy that seeks answers to one of the fundamental questions i.e. 'What is'? Subsequently, we have also studied the origination of the concepts like real, unreal, permanence, impermanence, God etc. This year we shall get acquainted with some of the theories, concepts and problems of Metaphysics and their significance.

We are a part of a vast universe. This universe consists of innumerable objects of various types and properties. As these objects interact with each-other in different ways, various activities take place in the world every moment. The nature of everything keeps changing. Since ancient times man has remained curious and has sought to gain knowledge of this world. This curiosity and sense of wonder has led to the development of Philosophy and Science. While observing the world around them, humans realized that the innumerable objects of the world originate from some specific basic elements. Several objects, though apparently different from each-other, have common origins.



For example, if you look around the classroom, you will notice that the tables, chairs, benches, doors, windows and their frames are all totally different objects but all are made of wood. Wood is obtained from trees. Apart from wood, we get many more things from plants and trees. We get leaves, flowers, fruits, food items and medicines too. We prepare medicines from the medicinal plants. Bamboo is a good example of a multipurpose plant as it is used not only for making useful objects but also for creating artistic objects.

Let's collect!

Find information about the bamboo-made products and classify them.

The above-mentioned examples are of man-made objects. In natural world too we may experience multiple forms of a particular object. For example, a small spark, a flame, a burning fire, a forest fire all these are various forms of one and the same element i.e. Fire. Water-cycle or food-chain are the examples of natural transformation of a particular thing from one form to another. We may say that egg, larva, caterpillar, pupa, butterfly, are different entities or even different stages of the same life form.



Let's write!

Collect examples of 'various forms of one and the same object' and classify them into natural and man-made objects.

Through such observations man concluded that although the world is full of diversities, it must have been created out of some basic elements. Even if, this guess was correct it raised many questions. If it is believed that due to some changes among basic elements other objects were created, then what was the cause of that change? What was the process

of change? Did this change occur mechanically or someone planned it? If it was planned, then, what was the purpose? Along with these questions, man was curious about two basic questions; what is the number of these fundamental elements – one, two or many? And what is their nature? What are the qualities of these elements that make it possible for a variety of things to originate from them? In this lesson, we shall mainly study the responses given to these two questions in Indian and Western traditions. Hence, the title of this lesson is, ‘There is something, but what it is?’

It is said that understanding the nature of the ultimate reality or ‘Sat’ has been the matter of interest for Philosophy. The word ‘reality’ refers to the real or that which exists. It has nothing to do with political or any other sort of dominance or supremacy. As we have studied last year, the ‘real’ is independent and does not depend on any individual or experience for its existence. This ultimate reality is the reality which is at the root of everything that exists. It is called as ‘the ultimate reality’ as in the process of discovering the origin of everything that exists, one discovers reality at the end. It exists in itself and is not created. That is why the elements of the ultimate reality are called as the fundamental elements.

This can be better understood with an example, when we look at trees, we see the trunks, branches, leaves, flowers, fruits but the roots that nourish the trees and hold them to the ground, are hidden under the ground and usually they are not visible. But, the survival of the trees depends on them. Philosophers through their speculations and conceptualizations have attempted to explore and understand the ultimate reality which is the root-cause of the empirical world. When the intellectual leap that the philosopher had taken was coupled with the methods of modern science, this journey gathered momentum. That is how we have reached up

to the periodic table.

In this overall journey, the questions that the philosophers have contemplated upon, the methods used to solve these, their responses, concepts and language used for this are of great importance. We can see that science found its directions from the transitions that philosophy went through. Let’s study some of the important views of philosophers regarding the number and the nature of the ultimate reality.

Contemplation over the fundamental nature of the universe can be traced back to the earliest days of philosophical thought of both - the Indian and the Western traditions. The ‘Nasadiyasukta’ in Vedic tradition, the pre-Socratic thought in Greek tradition are some of its instances. Most of this contemplation was of the nature of logical reasoning. Mainly, the explanation of the naturally occurring events or of the existence of objects was not supported by any kind of divine or supernatural entity, as was otherwise found in ancient myths. With the increasing clarity of thought, the concept of ‘Dravya’ in Indian tradition and the concept of ‘Substance’ in Western tradition emerged. Knowledge of the world is primarily obtained through the medium of sense-experiences. As we have studied in the previous year, there is a difference between the experience and the thing we experience. It is not necessary that everything that we experience has existence, e.g. mirage. Similarly, not everything that exists is a matter of sense-experience, e.g. atoms.

We experience a material object through its appearance, color, shape, type, its dimensions and its relation to other objects. For example, when we eat an orange, we experience the orange-yellow color, the round shape, the sour-sweet smell, the taste and the cool touch. We also observe whether it is small or large and how it is different from sweet lemon. But is an orange just a bunch of color, smell, flavour, feel, shape or

something more? You may ask, what kind of a question is this? The smell, the taste etc. are the qualities of the orange and not the orange itself. By this, you may mean that an orange is that of which all these are the qualities. These qualities are dependent on the orange for their existence. It is this substratum of the qualities that is known as the substance. The relations, quality and quantity are always applied 'to something'. They cannot exist independently. Their existence depends on the substance. The qualities like color, smell, shape etc. can exist in several substances at the same time. However, they cannot exist without substance. Comparatively, substance is not dependent on the existence of any specific qualities for its existence. The writing board in the class can be black, green or white, but the board remains the board regardless of its color. A small shrub changes into a plant and plant grows into a tree but the fundamental substance remains the same. In short, even if the quality, quantity or relations of the substance changes, the substance exists forever.

Ultimate Reality: number and nature

The philosophers wondered about various questions such as: what could be the number of these substances that exist? Are the ones that exist, created from some fundamental substances? What are these basic elements? How many are they in number? You are all aware of the five basic elements discussed in Indian tradition. Earth, water, fire, air and ether are said to be the five basic elements. That is because, it was believed that the material world is formed out of the various combinations of the five basic elements in different proportions. Except Charavaka, all other prominent Indian schools of philosophy had accepted the notion of five basic elements (panchamahabhuta). The Charavakas admit the existence of four basic elements (earth, water, fire, air) while they rejected ether. Even the ancient Greek philosopher Empedocles considered only earth, water, fire

and air as the basic elements.

Today, we are aware that these five or four elements cannot be regarded as the basic elements. It is through scientific analysis, we have learnt how these elements originate. It is the combination of two atoms of hydrogen and one atom of oxygen that form a molecule of water, hence, water cannot be the basic element. However, this does not mean that the philosophical attempts made in search of the basic elements were mistaken. The notion of 'basic element' is not incorrect. In the pre-scientific period, it was difficult to find the exact number of the basic elements merely on the basis of reason and general observations. Nevertheless, it should be noted that this question discussed in philosophy paved the way for the scientific research in this direction.



Let's think!

The color of the sky or the colors of the rainbow are characteristics of which substance?

Logically speaking, the question 'how many fundamental elements are there in the universe?' can be obviously answered as one, two or many. Therefore, the answers given by different philosophers or philosophical systems can be categorized into monism, dualism and pluralism. Similarly, the possible answers to these questions regarding the nature of the elements can be specifically classified. As we have studied in the previous year, everything that exists can be classified into living and non-living (animate and inanimate). Inanimate objects are physical and material whereas in living beings we find consciousness existing alongwith the matter. Accordingly; we get specific logical possibilities, either the ultimate reality is material or spiritual or it is both material and spiritual. Consequently, three different theories are formed: materialism, idealism and realism. The philosophical contemplations in different traditions may slightly vary, but the

questions posed by them often remain the same. It is seen that the similar responses are put forth in unique ways by different traditions. Now, let's get acquainted with these significant theories of Indian and Western Metaphysical traditions.

Metaphysics in Indian Philosophy

In Indian tradition, both the orthodox and heterodox schools of philosophy have reflected upon the number and nature of the ultimate reality. Let's take a brief account of some of the major theories. While taking this review, it is also required to take into consideration the historical chronology. Majority of the darshanas acknowledge pluralism. These mainly include Charvaka, Jaina, Mimamsa, Nyaya and Vaisesika. However, they have some differences regarding the nature of the ultimate reality. Of all the main darshanas, Charvaka is the only darshana that has accepted materialism. Materialism states that the fundamental nature of the universe is material; that means it is non-conscious and physical. It also states that the consciousness is a by-product of matter. In the history of philosophy it is observed that the materialists are often pluralists. It implies that the number of the ultimate reality is more than two. Nonetheless, the theory believes that the fundamental principles are material, no matter what their number is.

Charvaka Darshana

According to the Charvakas, the universe is created out of the four material elements viz. earth, water, fire and air. There is no creator of this universe. The interactions between the four basic elements and their compounds produce everything in this universe. It does not require any creator or purpose. Existence of an independent substance called 'soul', is generally accepted by many darshanas as the basis of the consciousness. Though, Charvakas accepted consciousness they rejected the notion of independently existing soul. They believed that the peculiar combination of the four basic elements produce

the living or conscious body. The answer to how these inanimate elements produce living beings lies in the peculiar combination of these elements. This point shall be discussed in detail in the third chapter. In a way, Charvaka's views are similar to views of modern science. Just like science, Charvaka embraces materialism and pluralism.

Jaina Darshana

Like Charavaka, Jaina darshana is also included in nastika darshanas and it too advocates pluralism. In Jaina philosophy, everything that exists is classified into living (jiva) and non-living (ajiva). While discussing the nature of the non-living objects, that are devoid of consciousness, apart from the five basic elements Jainas also take into consideration motion, rest, time and space. We have studied in Science that every physical object occupies some space. It exists in certain time. It requires motion to be created. Even if, you and your friends are reading the same book in the classroom, each copy of that book is in a different place. Students of the next batch may read the same book, although it may have been printed after your book. There is an active participation of many individuals-objects in the process of writing and printing of the book.



Each object is made-up of inseparable particles of matter (Pudgala) that is, atoms. According to Jainas, not only the bodies of living beings and natural objects but also the mind, the speech, the breath are products of matter. The Jiva or soul (atma) possesses consciousness. The soul is never unconscious. Jainas do not agree with the Charvaka's view that 'body itself is the soul'. According to them, the soul or jiva is different from the body. In the third chapter, we shall discuss the types of jivas and their nature as described by the Jainas. For now, it is enough to keep in mind that Jainas are pluralists. They believe that material substance and spiritual substance independently exist.

Vaisheshika Darshana

You may be aware of the fact that in

Bauddha Darshana : Pratiyasamutpada and impermanent nature of the real

Siddharta Gautama Buddha was not interested much in the metaphysical questions. He believed that discussion of these questions are futile for attaining freedom from suffering. From the four noble truths that he has mentioned related to the problem of suffering, we understand his views on reality. In the formulation of the second noble truth i.e. 'there is a cause of suffering' he has stated the theory of Pratiyasamutpada. According to this theory, the existence of everything that exists depends on some conditions / on the existence of some other things. It means that the existence of everything is conditional. If the condition on which the existence of a particular thing depends gets destroyed, then the existence of that particular thing will be destroyed too. If we put this in the terminology of causation it can be said that, behind the existence of every object or event there is some or the other cause. Nothing exists without a cause. If there is a cause, then the effect is inevitably produced.

ancient times the concept of atoms was put forth by Vaisheshikas. Everything that we can see or experience has some shape/form. Therefore, it is possible for us to see it. Minute objects are not ordinarily visible. That is why a microscope is used to perceive such objects or organisms. Even the objects perceivable under the microscope have ultramicroscopic dimensions. When objects are broken, they are broken into smaller pieces. Have you ever observed the broken glass of a car that has met with an accident? How tiny are the pieces of the glass that is crushed! From such observations, it is understood that visible objects are made-up of extremely minute particles, invisible to the eyes. The more advanced the technology, the greater is our ability to divide objects into minute particles!

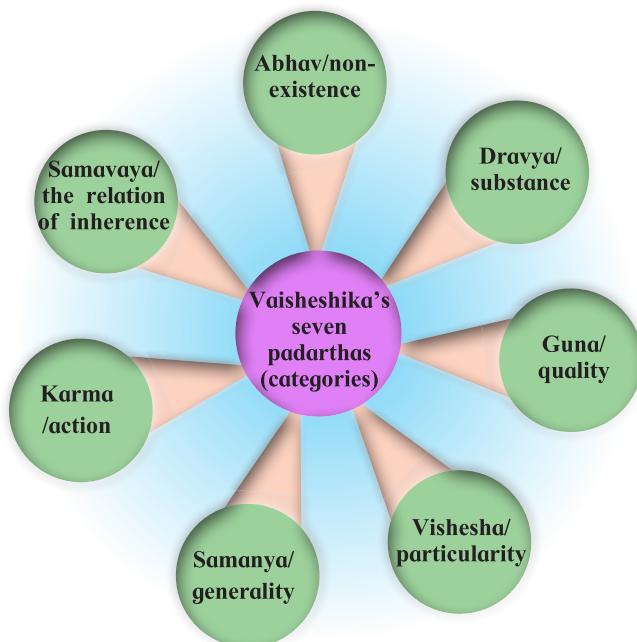
Similarly, if the cause or component that is necessary for the existence of a thing is destroyed, then the thing gets destroyed too. When a particular disease is caused due to some bacterial infection, the doctor gives us medicine that would kill the bacteria. For good health we require nutritious food. If there is lack of nutritious food it has adverse effect on the health.

The theory of impermanence proposed by Buddhism emerges from the theory of Pratiyasamutpada which states that, the origin of everything that exists is dependent on some other thing. According to this theory everything that exists in the world, will be destroyed eventually. Thus, nothing is eternal or permanent. Whatever is, is impermanent, changing, because existence of everything that exists is dependent on some other conditions. Impermanence, change is the characteristic of the universe. It is mainly due to this reason that Bauddha darshana rejects the existence of God and soul or the existence of any permanent substance.

Let's speak

Give examples of household techniques used to convert objects into small particles. E.g. mill machinery, grinding stone, grinding wheel etc.

Vaisheshikas had realized that if we went on to divide objects, we would eventually reach the indivisible particles which would not be possible to divide further. They could not actually reach these particles, but through their logical reasoning they could predict the possibility of such particles. It was these indivisible particles that they named 'atoms' (Paramanu). All material objects are created from the integration of the atoms of earth, water, fire and air; while the destruction of the objects is due to the disintegration of the atoms. Atoms, however, are eternal. That is, they are neither created nor destroyed. They exist forever. In short, atoms are eternal and imperishable. However, the objects created from them are non-eternal and perishable. According to Vaisheshikas, there are in all nine substances that form the basis of the universe. Apart from the four basic elements mentioned above, they include fifth basic element ether as well as space, time, mind and soul under the category of substance.



The Vaisheshikas explain the visible world with reference to these nine substances, as well as their qualities, their activities, their similarities, their peculiarities and their relationships. A distinctive characteristic of Vaisheshika's metaphysics is that in the initial stage of explanation they merely discuss existence i.e. the things that exist. But, later, they also discuss non-existence. Our knowledge of the world includes 'what is' as well as 'what is not'. You arrive at the exam-center and suddenly realize that one of your friends has not come for the exam. Or while going on a trip, we miss some person who could not make it to the trip. At times when we go to a store we do not find the stuff we are looking for. Vaisheshikas discussed abhava/non-being in detail; because they were emphatically aware that our experience of the world is a combination of both- the existent and the non existent, being and not being, 'this is' and 'that is not'. From Vaisheshika's standpoint the ultimate reality is pluralistic and realistic.

Sankhya Darshana

In Indian tradition, Sankhya Darshana provides a systematic presentation of Dualism. The Samkhya system also accepts realism. According to Samkhyas the material principle and the spiritual principle exist independently. Both of these substances are eternal and infinite. Samkhya refers to the principle of consciousness as 'Purusha'. Consciousness is not just an attribute but the essence of the Purusha. Purusha is pure consciousness. There is no trace of matter in this principle. It does not undergo any kind of transformation. The Purusha is inactive; it means the Purusha does not perform any action. The Purusha exists beyond the physical world. Change, activity, creation, destruction are all characteristics of the material principle.

The material principle is called 'Prakriti' by Samkhyas. Prakriti consists of three elements – sattva, raja and tama. Since, all

the material objects originate from prakriti; these three elements are found in different proportion in every object. When the prakriti is in its original state, all the three elements are in equilibrium. That is, none of the elements overpowers the other. This equilibrium gets disturbed as Prakriti comes in contact with purusha. This initiates the churning of three gunas and the entire perceptible world sequentially evolves from prakriti. Prakriti's course of evolution that moves from subtle elements to gross elements is as follows – intellect (mahat or buddhi), ego (ahankara), mind (manas), sense-organs (jnanendriya), motor organs (karmendriya), five subtle elements (tanmatras), five gross elements (mahabhutas). Sankhyas believe that at the time of dissolution, each element returns to its original state and gradually the entire visible world merges into prakriti again. These states of creation and destruction occur repeatedly in course of time.

The concept of time in Indian tradition is cyclical. Due to this cyclical or circular motion of time it is believed that the similar states of existence keep recurring in the universe in the same sequence. The 'yuga' concept in Indian tradition is related to this cyclical notion of time.

Let's understand!

Get acquainted with the notion of four Yugas (eras) found in Indian tradition. Study its connection with the idea of time found in this tradition.

To summarize Sankhya metaphysics, the material principle and the spiritual principle exist independently. Their properties are mutually opposite. There is no element of consciousness in matter, similarly, in consciousness there is absolutely no trace of material substance. However, in human beings, the body and the soul, that is the material substance and the spiritual co-exist. What then is exactly the nature of human

being, material or spiritual? We will study this in the third lesson.

Advaita Vedanta Darshana

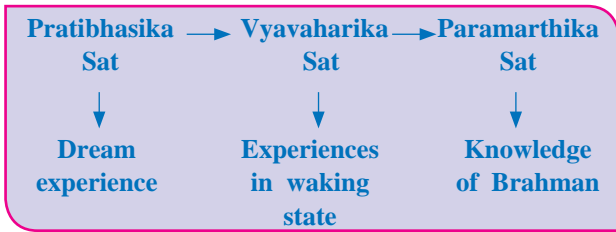
In Indian tradition from the earliest times, that is since Rigveda period, it is conceived that the universe is fundamentally one, everything that exists in it is just a part of the existence of an extremely colossal purusha. The development of this notion of oneness of the universe is found in the Upanishads as well. The one and only ultimate reality pervading the universe, came to be known as Brahman.

As per the exposition given by Adi Shankaracharya on monism, the plurality, diversity and change experienced in the world is merely an illusion. Only the permanent, eternal and unchanging Brahman exists. Whatever is, is only Brahman, it does not undergo any change really. It seems to have undergone change, but in reality it does not. We feel as if we experience many things, but everything is actually one and the same. Plurality does not exist. Moreover, 'we' and all that we experience, is not really separate from each-other.

All of us see dreams, right? In a dream we meet many people, see many things and experience them. But, the dream world is not real. And you also are aware of the fact that the existence of the dream is not separate from your existence. When you dream, the dream appears to be real. When you wake-up, you realize that what you were experiencing was just a dream and not the reality. Similarly, the examples of change and diversity that we experience in the waking state is merely maya, a grand illusion. We understand it only when we attain the proper knowledge of the ultimate reality. This knowledge is called 'Brahmadnyana'.

Shankaracharya describes three levels of reality. What we experience in dreams is called 'Pratibhasika Sat' (dream reality).

The reality that we experience in the waking state is called 'Vyavaharika Sat' (empirical reality). It is real on a practical level, but just as the dream world becomes unreal once we wake-up, similarly, the vyavaharika sat becomes illusory when one attains the knowledge of Brahman. That ultimate level of reality is called 'Paramarthika Sat' by Shankaracharya. However, the 'paramarthika' reality never proves to be unreal.



In the Chapter 'Appearances are deceptive' that we studied in the previous year, the examples of 'shuktirajat nyaya' and 'rajjusarpa nyaya' were given to explain this very point.

Brahman is devoid of properties, of any form, so it is called as attributeless and formless. It is due to our ignorance that we do not experience Brahman the one and the only reality, whereas, we experience only the objects that have some form and attributes. Brahman is consciousness. The same consciousness is present in us. According to Advaita Vedanta once you realize that your soul or your consciousness is the Brahman itself, you attain the knowledge of Brahman. In short, Advaita Vedanta tradition is Idealistic and monistic.

Western Metaphysics

In the pre-Socratic period, a group of philosophers was keen on understanding the ultimate nature of the universe. These philosophers came up with different ideas about the ultimate reality. Amongst these were the monists like Thales, Anaximander, Anaximenes, Anaxagoras, Parmenides, Heraclitus and so on. However, they had different views about the one ultimate principle. Do you remember having read

these in last year's book? More than deciding whether these beliefs were true or false, what is important today is to understand thought process of the philosophers behind these views. This was the period of beginning of the Western philosophy. Approximately two thousand five hundred years ago these philosophers observed the universe and contemplated over the origins of this universe and the thoughts we study are the fruits of their reflections.

In the previous year, while being introduced to metaphysics we studied the two concepts of 'permanence' and 'impermanence' related to reality. Among the philosophers mentioned above, Parmenides was the one who regarded permanence as the distinguishing characteristic of Reality. He believed that anything in relation to which we can use the terms such as 'is not', 'was not' or 'will not be' do not really exist. 'That which is'; always exists and we cannot use the words 'does not exist' or 'is not' for it. That is why Parmenides maintains that motion, change, time and distinctions are not real. When change occurs, that which did not exist comes into existence and that which existed disappears. Since, change is related to 'non-being', it does not have real existence. The idea of time is associated with change. In a world where there is no change, there is no time either.

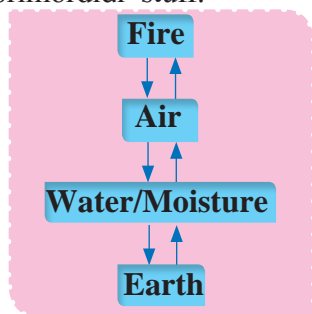


Different methods of measuring time

If there is motion, the objects can change their positions due to it. We move objects from one place to another, as also we ourselves move from place to place. Logically speaking, we require an empty space for any kind of movement to be possible. But, empty space means a place where there is nothing. Taking this into account it seems that an empty or vacant space cannot exist. If, there is no empty space, there is no motion, if there is no motion, there is no change. Similarly, if we try to analyze how the objects differ from each-other, then we may have to say that the differences too are not real. Because when there is a difference between two objects, it is implied that there is no similarity between them. We distinguish between pen and pencil, because the way a pen is, pencil is not and the way a pencil is, a pen is not.

Using such arguments, Parmenides holds that, that which is real and is the ultimate substance, is one and it is complete. There is no emptiness or ‘nothingness’ in it. It is permanent and eternal. It is neither created nor destroyed. Hence, it has no beginning and no end! Parmenides’ speculation is a perfect example of how a theory can be developed just by using logical reasoning.

The philosopher Heraclitus, however, took a stand completely opposite to Parmenides. According to him, change is the essential characteristic of reality. Reality is constantly changing. Impermanence is the nature of the universe. This process is best symbolized by fire; the flames of fire are constantly blazing. While constantly consuming fuel it keeps producing smoke and ash. It was due to this nature of fire, that Heraclitus considered fire to be the primordial stuff.



His saying ‘no one can step into the same river twice’ is well-known. This means that although there is continuity in the universe there is no permanence.

The universe attains some harmony through the strife of the opposites. Heraclitus explains this idea with an example of a bow. Have you ever made or at least handled a toy bow? So long as there is an equal tension on both ends of the bow string, its curvature is maintained. When the tension decreases or increases, the string breaks and the bow straightens. That means the curvature of the bow comes into existence and perpetuates due to two opposite and equal tensions! The characteristics of reality are impermanence and stability emerging from conflict. Although, Heraclitus, just like Parmenides, is a Monist, their views regarding the nature of the ultimate reality are completely opposite.

Many attempts were made to reconcile the impermanence experienced in the world and the influence of the view that the real must be permanent. In the pre-Socratic period, the pluralism of Empedocles and Democritus is significant in this context. Empedocles postulated the four basic elements namely, earth, water, fire and air. It is due to the two forces of attraction and repulsion that the elements integrate and disintegrate. Through these, the world is shaped.

Democritus and his master Leucippus were materialists. They realized that the process of dividing material objects would lead to atoms, the indivisible particles of matter. There is infinite number of atoms in the universe. Atoms are basically dynamic in nature. They are constantly moving in the void of the universe. They differ in shape and size. There is no qualitative difference between them whatsoever. But, because of the constant motion and different shapes, they become inter-connected and give rise to various objects. These objects, however, have different properties. When atoms are separated

from each-other by mechanical actions-reactions, the objects get destroyed. Democritus believed that these ‘happenings’ in the world are not intentional; there is no purpose whatsoever behind it.



Let's write!

Compare Vaisheshika's concept of 'atom' with that of Democritus.

Plato

In the pre-Socratic Western philosophy, we come across two main streams with reference to the nature of reality. According to one standpoint the ultimate reality is not that which is changing and impermanent. The ultimate reality is unchanging, indestructible and eternal. According to the other, impermanence, constant change is the true nature of ultimate reality. This world is impermanent and is constantly changing. This is the only unchanging truth. Socrates' disciple Plato tried to reconcile both these views in his theory of two worlds.

We always experience that the world around us is constantly changing. How can we deny that? That is why this world must be considered as real. But, according to Plato, the existence of this visible world depends on what he calls the world of forms. This world of forms consists of essences or universals that are shared by innumerable particular objects. These essences are beyond space and time. They are neither created nor destroyed. They exist forever and do not undergo change. What we call trees have so many different shapes, types and properties. Unless all of these particular trees have something in common, we cannot call them by a common name. What is 'common' in all of these? Treeness!



Let's talk!

Find examples of universals or essences. Discuss Plato's world of essences.

All the common nouns used in our language denote these essences that are known through reason, but not experienced by the senses. This world of essences is real and exists in actuality, whereas, the everyday world that we experience is just a copy, imitation, shadow or reflection of that world. In a sense the shadows and reflections are also actual. Have you ever thought that your reflection in the mirror is unreal? However, whether it is a shadow or a reflection its existence depends on the existence of that object of which it is a shadow or reflection. Similarly, Plato asserts that the existence of this world depends on the world of forms.

Aristotle

Plato's disciple Aristotle, however, completely rejected the notion of an independent world of forms. He thinks that the world we experience is the only world that existed, exists and will exist. Changes occur in this very world and he discusses the kinds and causes of these changes. We shall study Aristotle's theory of causality later. The central concept of Aristotle's metaphysics is substance. According to him, except the two fundamental changes; namely creation and destruction - all other changes occur in the substance. Just like Vaisheshikas, Aristotle presents various categories in order to study reality. Whatever exists can be classified under these categories – substance, quality, quantity, relation, place, time, position, possession, activity and being acted upon. Like Vaisheshikas, he too believes that substance is the most important category of all.



Modern Philosophy

Descartes

In medieval as well as modern philosophy, the concept of Substance was considered important in metaphysics. As we have seen before, the category of substance does not depend on anything else, whereas the other categories depend on the substance for their existence. To take the previous example, orange color, the round shape, the sour and sweet taste are all properties of an orange. Color, shape, mass, taste cannot exist at all unless they belong to something.

The French philosopher Rene Descartes, known as ‘the father of modern philosophy’, defined the Substance as ‘that which exists independently’.

Last year, you have studied Descartes’ method of doubt. Using this method of doubt, Descartes arrived at the indubitable truth, ‘I think, therefore I am.’ However, after deeply contemplating over the question, ‘who am I?’ Descartes accepted dualism. As per the prevalent beliefs, thinking and functions related to it are not of the body but of the mind. The intellect, emotions and desires are rooted in the mind. This means that, the ‘I’ that Descartes proved exists indubitably is

the mind. But in reality we use the word ‘I’, for our existence which includes both the body and the mind.

Descartes has asserted that the body and the mind are two separate entities. The body is made-up of material substance and is physical in nature. Material substance exists in both time and space and is experienced by senses. These are the essential characteristics of matter. On the contrary, the mind or the soul whose nature is consciousness, does not occupy space and it cannot be experienced by senses. Descartes concluded that the universe consists of two independent substances – corporeal substance and incorporeal substance which have opposite attributes. Here, one has to take into account that matter and consciousness are independent of each-other. Their existence doesn’t depend upon one another. But, they are not self-dependent. Both these substances are created by God. Therefore, above mentioned definition of Substance given by Descartes is applicable only to God. But, in the world created by God we can call matter and consciousness as substances in a limited sense because their existence doesn’t depend upon each-other. Descartes’ metaphysics advocates dualism and realism.

Spinoza

Descartes was followed by philosopher Spinoza, in this rationalist tradition. However he rejected Descartes’ dualism and proposed monism. The arguments he offered were based on Descartes’s definition of Substance itself. Spinoza argued that if knowledge of the substance does not depend on anything else for its existence, then there should be no need of knowledge of anything else for acquiring complete knowledge of it. Nevertheless, what we experience, as we try to gain complete knowledge of an object is that; we also have to obtain information of objects related to it. If you wish to know what a pen is, you need to know the paper

on which the pen is to be used, the words or the language that it writes, the people who can read it. This list can always be extended.

In short, all the objects in the world appear to be directly or indirectly related to each-other. Likewise, they depend on each-other. Spinoza asserted, that all these objects, in fact everything that exists, is a part of a single fundamental, limitless, eternal, infinite reality. This fundamental reality was called 'God' or 'nature' by him. According to Spinoza, it is the one and only principle that pervades the universe and everything that exists in it. This view is also known as Pantheism.

Leibniz

Leibniz is the third philosopher who accepts the concept of substance discussed above. He propounded pluralism, rejecting both Descartes' dualism and Spinoza's monism. Like the ancient atomists, Leibniz argued that if we keep dividing the visible objects into parts we may end-up reaching fundamental indivisible substance called atoms. However, he argued that these atoms are neither completely material nor physical in nature, but have a primary level of consciousness. He named these atoms as 'monads'.

There are infinite monads in the world and all the non-living and living beings are created from the combination of these monads. The universe is a hierarchical structure of these monads. God is the highest monad. He has created all the monads. Although, as per the principle of mathematics infinite combinations of these numerous monads are possible, Leibniz asserts that God has created this world as the best possible world. Thus, it can be said that Leibniz combines pluralism and idealism.

Hegel

Like Parmenides and Spinoza, Hegel

also advocates monism. But, his monism was of different nature. Parmenides' concept of ultimate reality has no room for motion, change and time. According to Spinoza the fundamental principle has infinite attributes; it is impossible for human-beings to know all of them; as human intelligence has limitations. Everything in the universe is related and inter-dependent, because there is one and the same fundamental reality at its roots. Hegel also believes that the entire universe is created from this principle. He calls this principle the 'Absolute'.

The 'Absolute' is one, the existence of which is not relative to existence of anything else, it is that which absolutely is. It is not material, Hegel believes, it is conscious, he also considers it to be of the nature of reason. In other words, this absolute is as if the fundamental power or force which is rational. It is also dynamic in nature. Many potentialities, possibilities exist in it in a dormant form. The aim of this absolute is to realize itself by actualizing all of its potentialities. It is in this process that the universe is manifested. The Absolute manifests itself in the form of matter and the universe evolves gradually. This evolution has a specific pattern. This is known as 'Dialectics'. It means that from the conflict of two opposite principles another better principle emerges. Subsequently, a principle opposite to this third one emerges and there is again a conflict between the two, giving rise to a new principle. According to this pattern, Hegel believes that the universe keeps evolving.



Let's talk!

Discuss the similarities and differences in monistic idealism in the metaphysics of Advaita Vedanta and Hegel.

The Scientific Perspective

Since ancient times, humans have tried to understand the world around them. The world is filled with many objects. Is there

any similarity between these objects? What makes them different from one-another? Is it possible that seemingly different objects have the same origin? Early humans started to think about such questions. These questions had emerged out of great curiosity about the surrounding world. The answers to these questions were sought in different ways. Sometimes, self-experience became the source of knowledge. Sometimes, imagination accompanied experience. Experiments were also carried out. These were the simple experiments that we perform even today. Like making a mercury-based barometer, measuring the speed of falling objects etc. This knowledge was based on experiments. The results of these experiments were verifiable by anyone. This category defined what we now call as objective knowledge.

Tools of experiment became more precise with time. Use of experiments and instruments became unavoidable to gain objective knowledge. This became a scientific way of finding the objective truth. The basic objective of finding out the nature of reality was just the same. However, as science progressed, the quest obtained more precision. Answer to one question gave rise to a new question. While trying to understand nature of reality at macro level, it appeared that things happen quite differently at micro or atomic level.

Newer tools changed the way we understand the nature of reality. It was not possible for every new entity and phenomenon that was found out to have any name from the beginning. This was new knowledge. It required new terminology. For example, it was impossible to imagine any such thing as ‘nucleus’ of an atom without powerful microscopes and other tools. Science has adopted such new terminology from time to time. Sometimes, the new terminology is quite similar to the old one, sometimes, even though the term is just the same the meaning changes completely. Philosophers have used terms like particle and atom since long.

However, there is a big difference between the way we understand these terms today and their original meaning. Sometimes, original terminology proves to be insufficient and thus, can’t be continued as it is. Ether is an example of such terminology. Sometimes, when we are talking of mind or heart we are actually talking about brain. Science accepted such changes in the terminology. Use of terminology can be confusing if the proper meaning and the use of the term is not taken into account. Thus, improper or inappropriate comparison of old and new terminologies should always be avoided.



Let's write!

Along with your classmates prepare a list of questions in metaphysics which you believe, are not yet solved by Science.

How does science address the question, “what is” in today’s times? Universe is made up of particles such as atoms, molecules, ions, photons etc. The very existence of particles gives rise to various forces (gravitational, electro-magnetic and the two sub-nuclear forces acting on each-other) between them. These forces influence properties of matter, different processes that occur in nature as well as growth and behaviour of living organisms. The machines and gadgets that we make and use also function according to these forces and other laws of nature. Thus, it is important to understand the laws of nature and their effects on human life. Motion of particles is what we call ‘energy’. Today science explains the nature of reality in this terminology.

This is just a brief introduction. Many branches of science are seeking to find the nature of reality. This quest has revealed certain important laws of nature. They are also called as the universal laws. Knowledge of these laws is the greatest achievement of science.

We saw what science has to offer with respect to metaphysical questions. It is difficult to conclude this discussion without a reference to its ethical implications.

The ethical concerns are - does this quest ever stop? Do we ever feel satiated with the answers? These are some major concerns regarding the development of science. We have acquired knowledge of laws related to matter and energy. However, we hardly discuss their effects on human life. Instead, all our curiosity is directed towards big bang theory and expansion of the universe. If, curiosity was limited only to the level of thought, there was no need to raise any concern. But, we use tools, equipments and instruments for it. They

need resources at a gigantic scale. Thus, how to prioritize the use of resources becomes a matter of debate. Should we exploit resources for the sake of knowledge that has little or no significance for human life? Ethical questions like these are important in the progress of science. Scientists take different positions on these issues. This increases the possibilities of keeping scientific progress on the right path. We will adopt scientific perspectives in our lives in a better way if we keep ourselves aware of the development of science. A healthy debate on ethical issues in science in which scientists and society equally participate will always be important for appropriate development of science.

Sat - सत्
Jiva - जीव
Ajiva - अजीव
Atma - आत्मा
Abhav - अभाव
Dravya - द्रव्य
Guna - गुण
Vishesha - विशेष
Samanya - सामान्य
Karma - कर्म
Samavaya - समवाय
Purusha - पुरुष
Prakriti - प्रकृती
Mahat - महत्

Buddhi - बुद्धी
Ahankara - अहंकार
Manas - मनस
Jnanendriya - ज्ञानेन्द्रिय
Karmendriya - कर्मेन्द्रिय
Tanmatra - तन्मात्रा
Mahabhutas - महाभूते
Yuga - युग
Brahman - ब्रह्मन्
Brahmadnyana - ब्रह्मज्ञान
Pratibhasika - प्रातिभासिक
Vyavaharika - व्यावहारिक
Paramarthika - पारमार्थिक

EXERCISES

Q.1 Fill in the blanks choosing the correct option from the bracket.

- (1) Experience of objects is about the form color, shape, type etc. of object.
(material, imaginary, philosophical)
- (2) darshana classifies all the things

into jiva - ajiva types.

(Sankhya, Jain, Nyaya)

- (3) Instruments and experiments are necessary to acquire knowledge.
(subjective, inter-subjective, objective)
- (4) According to Plato, existence of visible

world is dependent on world of

(forms, reflections, material objects)

- (5) According to Descartes, corporal and incorporeal are two independent substances which have qualities.

(opposite, inter-dependent, inter-relational)

Q.2 Find the odd word/pair out and write.

- (1) Thales, Anaximenes, Heraclitus, Descartes.
- (2) Materialism, Realism, Asatkaryavada, Chidvada.

Q.3 State with reason whether the following statements are true or false.

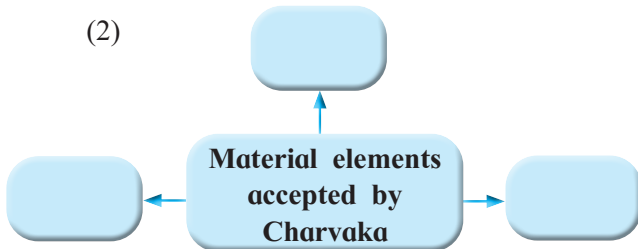
- (1) Leibniz was a monist.
- (2) According to Parmenides reality is changing.
- (3) Charvaka advocates materialism.
- (4) Shankaracharya does not consider Pratibhasika Sat as ultimate reality.

Q.4 Complete the concept-map/flow-chart.

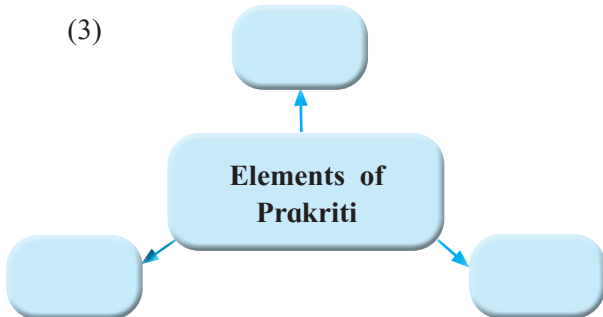
(1)



(2)



(3)



Q.5 Write the answers in 20-25 words.

- (1) What are the forces created by particles in the world?
- (2) How many substances are given by Vaisheshikas? What are they?
- (3) What is the dialectical method given by Hegel?
- (4) State the nature of the atoms Democritus?

Q.6 Write a short note on the following.

- (1) Abhava
- (2) Monism
- (3) Heraclitus's notion of reality.
- (4) Nature of according to Vaisheshikas Atoms.
- (5) Hegel's concept of 'Absolute'.

Q.7 Explain the following statements with examples.

- (1) You cannot step into the same river twice.
- (2) Charvakas accept materialism and pluralism.

Q.8 Distinguish between the following:

- (1) Materialism and idealism.
- (2) Dualism and pluralism.

Q.9 Explain in detail Descartes' dualism and Spinoza's monism.

Q.10 Explain completely Sankhya's view about reality.

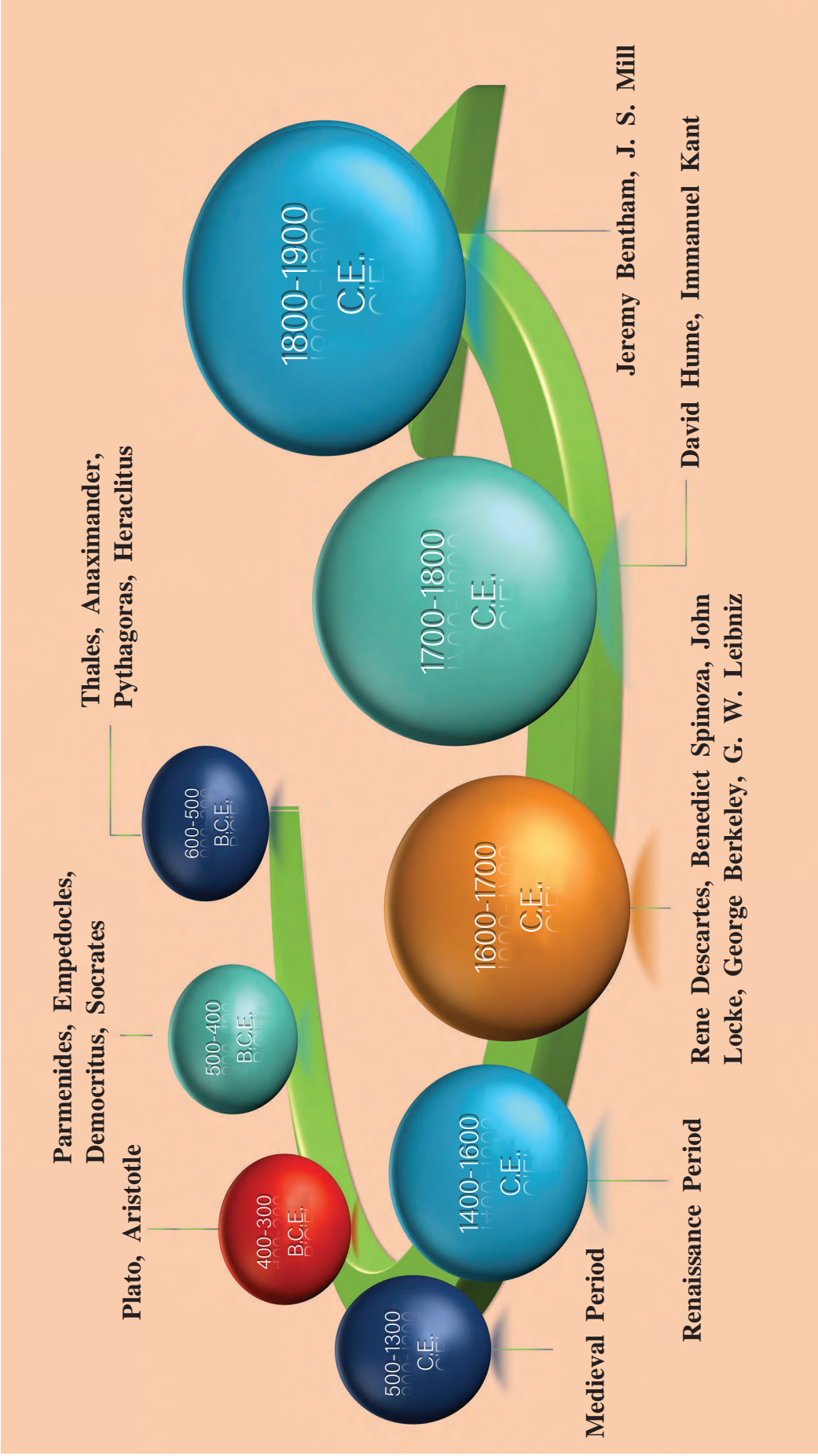
Q.11 Write a dialogue on the following:

Helping your classmate who believes that the things we see in dream are real, to understand the concept of 'Pratibhasik Sat'.

Activity

Prepare a play on the theme of philosophical discussion about Materialism and Idealism. Present the play in the annual gathering.





This is a timeline of the history of Western Philosophy. In this timeline, some of the most important philosophers are mentioned in chronological order along with certain time periods that are crucial in understanding the history of Western Philosophy.

2. What is Cause?

- **Introduction**
- **Concept of cause**
- **The Notion of cause in Indian philosophy**
- **The Notion of cause in Western philosophy**
- **The Scientific perspective**

Introduction

On reading the title of this Chapter you may say, “this is something that everyone knows, then what is the reason behind asking this question?” This question is asked because we use many words in our day-to-day conversations, but if we are asked what is exactly the concept that the word denotes, we get baffled and start thinking about it. From whatever you have studied in Philosophy by now you must have realized that in this subject, questions are raised about the concepts that seem to be easy to use or understand. The horizon of our knowledge broadens as we go deeper into these questions. ‘Cause’ is one such concept. This concept is as much important in epistemology and ethics as in metaphysics. Isn’t this a sufficient reason to study this concept and the meaning embedded in it?

Concept of Cause

Curiosity is a beautiful gift human beings have received from nature. Our curiosity is not limited to the things that are necessary for survival or to the things that are useful. It extends beyond that. It doesn’t end merely by thinking about what is beneficial or harmful, what is useful or useless for us. It is from such curiosity that the question arises what is there in the universe? Not only this, but we also ask why everything is the way it is? Why does change occur in it? We ask such questions due to a natural curiosity.

Once a question arises, how can our reason be at rest unless it finds the answers? With this quest begins the journey, for finding out the reasons behind the nature of objects and the causes behind the events in nature, in society and in the mind!

It is not only the philosophers who are confronted with these questions, you too are confronted with these questions. For example, at home when some device of regular use, like radio or television, does not work we immediately ask “why?” When at times it suddenly rains and we wonder “Why it must have rained?” When a healthy person falls sick we wonder “What must be the reason?”. All these are examples of unexpected events. However, even when things happen as expected, the concept of ‘cause’ is always with us knowingly or unknowingly. For example, when a friend who does not attend classes regularly faces difficulty during the examination and is about to cry, you say, ‘this is the reason why I would ask you to attend classes.’ When you have high temperature after getting drenched in the rain your mother says ‘the cause of your fever is nothing else but your wandering in rain.’ Whatever ‘happens’ to us is due to some reason. Similarly, there is always some reason behind the things that we do consciously. Our intentions, desires, motivations etc. are the reasons behind our behaviour and actions.



Let’s talk!

Discuss in groups the difference between reasons behind the action / behaviour of an individual and scientific reasons behind events.

The search for causes is very important for science too. Explanation and prediction of events are considered to be major tasks

of science. In order to carry out both of these tasks, science explores the cause - effect relationships. Causes and effects are related to change. That reason due to which change occurs is the cause and what is generated from that change is known as an effect or a consequence. The task of science is to know what is the effect of a particular event and the regularity with which it occurs. It is the function of scientific laws to explain the regular correlation that is found between events. This correlation is often of the nature of cause-effect relationship. Do you remember the law 'all metals expand when heated'? This law states that because of the cause 'heat' the effect 'expansion of metal' takes place. On the basis of cause-effect relationship natural sciences explain the occurrences in the nature; similarly, the social sciences explain social events on the basis of cause-effect relations of social behaviour. The same law that is used to give explanation, is used for making predictions. For example, the law that explains the expansion of the mercury in the thermometer, also predicts that if the person has fever the level of mercury will rise up.

Like science, religion too speaks about cause. Some religions look for the cause of the existence of the universe. They also explore the causes behind the nature of the universe. Some religions also provide causal explanations of the incidences of human life that are not easily explainable. Concepts like merit-demerit, karma and its consequences are its indicators. The belief that good deeds will lead to heaven whereas bad deeds will lead to hell, is based on the belief that relation between the action and its fruits / consequences is a causal one.



Let's discover!

Find out the examples of incidents, where a cause-effect relation seems to be existing, but actually it is not there. Present them in the class.

In short, this notion of causation has pervaded in many areas of our lives and knowledge. It is not surprising that it is important in Philosophy. It should be noted here that Philosophy is interested in understanding the concept of 'cause' and the principles associated with it. It is not the function of Philosophy to discover the causes underlying existence. All such attempts made by Philosophy in ancient period were theoretical in nature. The major questions philosophers studied were as follows : What is the exact nature of cause-effect relationship? Are effect and cause completely different from one-another? Is causal relation applicable to every event? Is this relation necessary? Let's study these questions and the major responses given to them in Philosophy.

While studying this, one must keep in mind the period in which these various responses are given. Why so? It is because the questions which were asked in the most initial period of philosophical contemplation and the answers they received are as if the foundation of the tower of knowledge on the top of which we stand today. We have ascended to the place where we have reached today, by gradually following the sequence of questions and answers; giving rise in their turn to newer questions and answers. Have you ever seen the Dahi Handi? In it, we see that the hands of the individuals standing at the lowest layer of the human pyramid surely cannot reach the pot at the top, but it is only because of them that the player at the top can break the pot. Got it?

The notion of 'cause' in Indian Philosophy

Background

Let us first understand the major theories of causation in Indian Philosophy and the context in which they have been discussed. Although these relations have been discussed in both Indian and Western traditions, their cultural backgrounds are different. As we

have seen in the previous year, Philosophy and culture keep influencing each-other. From this point of view, it seems that being aware of the cultural background helps us understand the Philosophy that has developed in a particular culture in a better manner.

One of the key-features of Indian Philosophy is that this Philosophy is related to the issues we face in our actual lives. As the study of this Philosophy satisfies intellectual inquisitiveness, it also teaches us how to live. This does not mean that it provides specific solutions to the specific practical problems that arise in our day-to-day life. Rather it develops a broader perspective towards life. This life-perspective is primarily concerned with what ought to be the goals of human life. Later, we will study the concept of 'Purushartha' in Indian tradition which talks about the goals of human life.

Almost all the Indian schools of Philosophy have contemplated over the problem of suffering. No one desires sorrow. But, understanding that it is an inseparable part of one's life, these schools have tried to find the cause of this suffering. At the same time, they have also suggested the ways to get rid of this suffering permanently. All the major schools of Indian Philosophy except materialist Charvaka, accept the notion of re-birth. These schools also believe that birth inevitably gives rise to suffering. That is why they propound liberation from the cycle of re-birth as the highest goal of life. This liberation has been named variously by different schools as moksha, mukti, kaivalya, apvarga, nirvana etc. However, all these schools agree upon one point that, it is one's ignorance regarding one's own self and the world that is the root cause of being bound in the sorrowful cycle of re-birth. Obviously, these schools have propounded that one must eliminate ignorance and know the true nature of one's self and the world and accordingly live life in a proper way. The cause-effect

relationship has been discussed while studying the existence of universe and the things existing in it, their nature and their inter-relations.

In this context, the views of Charvaka, Jain, Sankhya and Advaita Vedanta schools regarding the nature of ultimate reality that we studied in the previous lesson must be kept in mind. Though, the nature of the ultimate reality, the notion of 'Self' and the cause-effect relationship, have been discussed separately in different chapters for convenience, we must not forget that, in fact, these three are inter-connected issues in Metaphysics. We must take into account the inter-relationship among Metaphysics, epistemology and ethics. The cognitive, moral and artistic capabilities of human being are a part of their nature. The relationship between man and the universe is at least to some extent determined on the basis of these capabilities. Though it may appear that we are discussing different issues in different chapters of this book we need to keep in mind that there is a common thread which holds them together. Let us now turn towards the study of theories of causation in Indian tradition.

In the Indian tradition, material cause and efficient cause are considered to be the two main types of causes. We have already seen that the concept of 'cause' is related to change. That in which change occurs, is known as material cause. The effect/or consequence emerges from the material cause. This creation requires motion. That which causes this momentum, is known as the efficient cause. Wood is the material cause of a cricket bat and the craftsman/carpenter who shapes the wood into a bat is the efficient cause. That which produces the effect from the material cause is the efficient cause. It is generally believed that both these types are required for the occurrence of the effect, that is, the consequence.



Let us do!

Make posters of various objects explaining their material cause and efficient cause.

However, there seems to be a disagreement among Indian schools of philosophy regarding what is their relative role and to what extent in the production of the effect. These differences are in relation to two questions. (1) Does the effect exist in the material cause in some or the other form prior to the process of change? And (2) is the effect independent and distinct from the cause? Based on the responses given to these questions, the two main theories of causation were propounded, namely – ‘satkaryavada’ and ‘asatkaryavada’. Samkhya Darshana has accepted satkaryavada. Nyaya Darshana advocates asatkaryavada.

Satkaryavada

The term ‘Sat’ indicates existence. The theory according to which the effect pre-exists in its material cause before its explicit manifestation is called ‘satkaryavada’. Sankhyas have presented many influential arguments in support of this theory. If we assume that the effect does not pre-exist in the cause and is subsequently generated, then we will have to accept that being or existence originates from non-being or non-existence. However, that is not possible. Creation of anything is not possible out of Nothing. Effect can only be generated through some processes, with the help of efficient cause. This means it is already implicit in the material cause in the form of a latent potentiality. Therefore, one is unable to distinguish it from the material cause. If a particular effect is to be produced, then only that material cause should be chosen in which the effect is latently present. If, we add culture to water it cannot produce curd because water lacks that potentiality. Culture is the efficient cause due to which the potentiality of the milk to produce curd is actualized.

Sankhya’s theory of satkaryavada is also known as Parinamvada; in the process of creation of effect it is the cause itself that actually transform into effect. Advaita Vedanta darshana also accepts satkaryavada, but their theory is known as ‘Vivartavada’. According to Advaita Vedanta, the transformation of the cause into effect is merely an illusion, a Maya. The rope that appears / looks like a snake is not a snake; but it appears to be a snake. Similarly, the world does not originate from Brahman. It is only the Brahman which exists while the world only appears to exist.

If, there was no such relation between potentiality and actuality then any effect could have been produced from any material cause. But, that doesn’t actually happen. If, somebody moves the hand in the air and shows us either kumkum or any precious thing we would say that it is just a trick. To believe that this is not a trick is a superstition.

Effect cannot be produced without a material cause. Moreover there must be specific potentialities inherent in that material cause. The same truth is expressed in the proverb, ‘As you sow, so shall you reap’. If you want mangoes, then, it is of no use sowing seeds of sapota in the soil. This means that cause and effect are qualitatively not different, they are the latent and manifested states of one and the same thing. The effect is the implicit power in the cause in a non-manifested form and is manifested under appropriate circumstances. When, we switch on the tubelight the electric energy that exists in a non-manifested form in the lamp gets manifested in the form of light. This happens because it is already there. The bulb or tubelight which has lost its potentiality, does not lit even if we press the connected switch.

Asadkarnat upadagrahanat sarvasambhavabhaavat.
Shaktasya shakyakaranat, karan bhavachha
satkaryam.

Sankhyakarika – 9

Asatkaryavada

Asatkaryavada of Nyaya darshana presents a view opposite to Sankhya view. The effect does not exist prior to the process of change; that means it is non-existent in the cause. It does not exist in its material cause prior to its production. The Naiyayikas think that the effect is newly produced in the process of change and does not exist in the material cause prior to its coming into being. They have also presented their arguments to prove this. If the effect pre-exists in the material cause then there would be no need of efficient cause. Milk will change into curd automatically without culture and wood will change into a bat without the artisan. But, that never happens.

Actually, I am the bat.
Because it is created
from me.

No, you are just wood
and I am bat...



It is only through the collaboration of the efficient cause that the effect is produced from the material cause. If, the effect pre-exists in the cause then it does not make any sense to say that an effect is created/produced. To say that the effect is produced is to say, that which did not exist before, has come into existence. Effect is different from the cause. Its properties, shape or form are different from the properties, shape or form of the cause. The objectives to be attained

through the cause and the effect are different. Their functions are also different. One does not have same kind of pleasure by observing the stone, that one obtains by observing a sculpture created by a sculptor. One cannot hit fours and sixes with a crooked piece of wood. Apart from this, it seems that various things can be made out of the same material cause. Many objects can be made out of wood.

The properties, appearance and purpose of all these objects are different from each other. Naiyayikas propound that there is no point in saying that all these effects pre-exist in the material cause. The existence of the effect gets initiated with the process of creation. Hence, this view is known as ‘Arambhavada’.



Let's do!

Discuss the difference between Parinamvada and Arambhavada in two groups and present the important points of the discussion in the class in the form of debate.

Sankhya's satkaryavada is an important part of their metaphysics. All the things that exist in the world are made of material substance i.e. Prakriti. Because, the qualities of sattva, rajas and tamas are the constituents of prakriti, we find a combination of all the three in various proportions in all the things. “Not in a pail unless in the well.” According to this proverb, if these qualities were not present in the prakriti itself, then they would not have existed in the objects created from prakriti. Sankhya believes that prakriti is the first cause of the world. Prakriti is the material cause of the world and the purusha which triggers it's creation is the efficient cause.

According to Nyaya metaphysics, most of the objects in the world are divisible. They can be divided into parts. These objects are

effects and they originate from some cause. They are formed from the atoms of material substance. However, material substances are not sufficient for the creation of these objects. God, who knows their nature completely creates these objects and the order in the universe. To put it in the *asatkaryavada* terminology, the atoms of earth, water, fire and air are the material causes and God is the efficient cause of the world. It is not possible to create the world merely from the atoms without the intelligence of God.

As we have seen before, contemplation over the cause-effect relationship is an important part of the philosophical thinking that aims at attaining liberation through knowledge of the true nature of the world and oneself.

The Notion of 'Cause' in Western philosophy

In the initial period of Western Philosophy the contemplation about reality came to be known as 'Cosmology'. An important question related to monism was, how did everything originate from a single fundamental principle? The basic elements of the ultimate reality, the changes that occur in them and the motion required for these changes were the three issues addressed in this period. The pre-Socratic philosophy after Parmenides and Heraclitus reflected over the question, whether these basic elements of the universe are fundamentally dynamic in nature or do they receive motion from some external source? As we have noted earlier, the atoms of the four basic elements get motion from two forces viz., attraction and repulsion. Empedocles argued that atoms are continuously composed and decomposed due to this motion. According to Democritus, atoms are inherently dynamic. While moving in an empty space they get bound together due to their different shapes and again move away from each-other because of the motion. Atomists believed that the process of

integration and disintegration continues in a purposeless and mechanical manner.

In the later period, philosophers were inclined to believe that the process of change is not mechanical. According to Plato's theory of two worlds, nothing changes in the world of forms. The problem of change was of little importance to Plato, who believed that the world of Forms is the highest reality. In fact, the main reason for not believing that the particulars are real was that they change and perish. According to Plato, the forms in the intelligible world are the ideal or perfect forms of the particulars. He was of the opinion that every particular makes effort to reach this ideal. The main motivation behind the change is the desire to reach the ideal. Since, he did not consider the world of particulars to be ultimately real, he did not seem to have felt the need to think deeply about the changes that occur in that world.

Aristotle

Aristotle, had to consider the phenomenon of change, because he believed that the world of experience is the only world that exists. Aristotle accepts the teleological perspective according to which the changes that occur in nature have some purpose and end. Change is the characteristic of everything that exists in this world. He knew that motion was required for change. That is why in his metaphysics, the consideration of change and motion is important. His views on causation have been presented in this context. When an object undergoes change, its state before the change is different from the one after the change. Aristotle classifies change into four types on the basis of this difference. These four types are : qualitative, quantitative, spatial and substantial.

When a mango ripens, its color changes from green to orange-yellow, its sour taste decreases as sweetness increases and it also becomes soft, all these are qualitative changes. A small raw mango changes into a

large mango, this is a quantitative change or when from a single banyan tree several aerial roots form, this is also a quantitative change. The mango which is on the tree falls on the ground, then goes into a box of mangoes and finally into someone's house; this is the change that occurs in the place of the mango. A mango is formed from the flowers and it gets destroyed after being eaten, these changes are substantial changes. The first three types of change occur in the substance, but, the last change is of the nature of the creation or destruction of the substance. Hopefully, you have not forgotten that substance is the most significant, fundamental type or category of everything that exists, right? In the case of first three changes, the substance in which they occur remains constant. However, this is not so in the case of a substantial change.



Whatever may be the type of change, it necessarily occurs due to some reason or the other. In the Greek language of Aristotelian period the term 'cause' was used in a much wider sense. Whichever factors were responsible for the existence of an object, all of them were referred to as 'causes'. Here the term responsible is not used in a moral or legal sense. The elements responsible for the existence of an object or an event are the ones without which the object or an event cannot exist. If a book in the library is found torn, the authorities look for the person responsible for tearing the book intentionally or unintentionally. This is the sense in which the word 'responsible' is generally used. But, basically in order to be torn, a book must

first exist. This book is created from something and it has some particular shape. It is created by someone with some purpose. That means, the paper, the shape in which it is created, the person who gives that shape and the purpose for which it is made, are the four factors responsible for the existence of the book. That is, these are the causes for its existence.

Aristotle's fourfold theory of causation classifies cause into four types. These four types are as follows :

(1) Material cause : The substance in which change occurs and an object is created is a material cause. e.g. stone is a material cause of a sculpture.

(2) Formal cause : The idea or image in the mind which determines the shape of object, that idea or image is the formal cause. e.g. the idea in the mind of the sculptor of a sculpture.

(3) Efficient cause : The force or the individual which gives a specific shape to a material cause is an efficient cause. e.g. sculptor.

(4) Final cause : The purpose with which an object is created is the final cause. e.g. the purpose behind the creation of a sculpture.



Let's write!

Write the different meanings of the term 'cause' with examples.

Aristotle's explanation is easily applicable to the man-made objects, but while explaining natural objects and the changes that occur in them a few other concepts need to be considered. Aristotle believes that all living beings, from plants to human beings, have soul. This spirit or 'psyche' in Greek language is basically the principle of motion. Living beings can move by themselves since this principle is inherent in their nature. Inanimate

objects cannot move without external force. For movement they need external energy. Living things do not require such energy. There is an operative force in their body due to which growth in their body takes place. It is because of this force that the seed germinates under conducive conditions. The germ transforms into a sapling, a sapling transforms into a tree. The tree grows flowers and fruits and again seeds are reproduced. These types of changes occurring in living beings are caused by this internal force. Aristotle uses the Greek word 'entelechy' for this force.

Whether a being is living or non-living it cannot change without motion. Non-living things are moved by some external object. If, this object is also inanimate, then, there has to be a third object which moves it. That is how the inquiry with respect to the source of motion, takes us more and more backwards in the process. If, this inquiry is endless, then it would never be complete. Logically, this is called a state of 'infinite regress'. In order to avoid the infinite regress Aristotle proposes the idea of God as an 'Unmoved mover'. According to this idea, there is not even an iota of matter in God. He is a pure form and there are no dormant potentialities in Him. All His powers exist in actuality. So, He doesn't need to make any movement or perform any action. He himself is 'non-moving', not performing any action. But because of this nature of God, the world created from material substance and form gets attracted and is drawn towards Him. In this way God becomes the 'Mover' even if He Himself is Unmoved. However, Aristotle's God is not the creator of the world. Like God, the world exists eternally, but it gets its motion from God.

Modern Philosophy

Mediaeval Philosophy was greatly influenced by Aristotle's cosmology. However, after the emergence of modern science,

Aristotle's view regarding the origin of the universe took a back seat. Science underlined the fact that mere speculation, even when it is logically consistent is not enough for the understanding of the universe. It must have a strong basis of experience too. Empiricism was introduced in modern was introduced in modern philosophy, keeping this fact in mind. Empiricism and rationalism are the two main trends of epistemology. We will study them later. In this lesson, let us understand the views of the empiricist philosopher David Hume regarding the cause-effect relationship.

Aristotle's views about world were mainly derived from his speculations. It did not have a strong base of experience. His perspective of the world was teleological. The purpose or ultimate cause behind every change was important to him. Similarly, he considered the efficient cause to be important. His analysis of causation was very useful with respect to the man-made objects. However, it was not possible to apply the concepts of final cause and efficient cause to explain the changes occurring in the nature. In modern times, the idea that a change in nature is caused by 'someone' (efficient cause), for 'something' (final cause) was not acceptable.

Science emerged in the period of enlightenment. Modern science looks at the world as a giant machine. This perspective believes that events in nature occur mechanically, according to the laws of nature. Logically consistent thinking alone is not enough to understand the nature of the world. In modern times, Aristotle's teleological view was replaced by a mechanical view of science. The leap taken by science during this period had a profound impact on modern epistemology later. You will be introduced to this epistemology. Of the two trends of epistemology mentioned above rationalism is influenced by the method of mathematics, while empiricism is influenced by the method of science. One of the most important

philosophers who advocated empiricism is David Hume. His views on causation are very noteworthy.

David Hume

Hume believes that sense-experience is the primary source of knowledge. In our mind there are various types of ideas. We cannot gain knowledge from all of them. Hume asserts that only the ideas acquired through sense-experience are useful in order to gain knowledge of the world. When we consider the ideas which are not based on experience to be true and try to produce knowledge from them we get deceived. Hume strongly asserts that even if these ideas are very influential and are well received by the community, such ideas should not be accepted. Hume offered an experience based critical analysis of the understanding of causation that was prevalent before him.

As per the common understanding of that period, 'cause' is that which has the potentiality to produce effect. Since, the effect emerges from this potentiality, effect cannot be more powerful than the cause. This view was also accepted by science. A rationalist philosopher like Descartes was also influenced by this view. Another related view was that there is a necessary relationship between cause and effect. That is, if the cause is present, then the effect must be generated. It is true that there cannot be an effect without a cause, but it is also true that there cannot be a cause without an effect. Rationalists had accepted the necessity of the cause-effect relationship. By analyzing the cause-effect relationship Hume completely rejects this belief that the relationship is a necessary one.

In his analysis, Hume states what does it exactly mean, to say that an event is a cause of another event. While asserting 'A' as the cause of 'B' following things are implied :

- (1) 'A' and 'B' are close to each-other in terms of space and time.
- (2) 'A' and 'B' are bound in a sequence. 'A' always exists prior to 'B'.
- (3) There is a regular association or correlation between 'A' and 'B'. 'A' and 'B' are constantly together.
- (4) 'A' and 'B' are necessarily related.

Hume analyses all these four factors related to our understanding of causal relationships, by using the empirical method. He concludes that the first three ideas of proximity, sequentiality, regular association are created on the basis of our sense-experience. But, we never experience the idea of necessary connection. Following the empiricists standpoint according to which, that which cannot be experienced does not exist, Hume asserts that a cause-effect relation is not a necessary one.

Let's explain Hume's view with the help of an example. We experience that if a candle is kept in the scorching heat of the sun for a long time, the wax melts. We explain this experience as : the 'scorching heat' is the cause of the 'melting of the wax'. The wax does not melt unless the sunlight and the wax come in contact with each-other. This experience reinforces the idea that cause and effect are closely related to each-other. It never so happens that the wax melts first and then the candle is kept in the sunlight, there is never a reversal of this sequence. As per the notion of sequentiality, the candle melts only after it is kept in the sunlight. Regardless of the number of times we place a candle in the sunlight, it melts every time, hence, it shows that the idea of regular association is correct one. But, while seeing the candle melt in the heat, we never experience the necessity. Even if this instance is repeated, necessity is not experienced.



Let's think!

Think of the examples that suggest that there is no necessary relationship between cause and effect. Discuss these examples with your classmate. Present selected examples in the class.

From such observations, Hume concludes that although the concept of necessity is deeply rooted in our minds, it has no base in reality. Now, the question arises, how then, is this idea so widely accepted? Hume answers this question from a psychological standpoint. According to him, many times we see the regular association of cause and effect. Many a times we also experience that the effect never occurs without the cause. Due to the experience of regular association between cause and effect, we start believing that there is a necessary relation between these two. But, this is not the fact. If, any relationship is necessary, then its denial leads to contradiction. It is contradictory to say that a figure is triangular, however, it does not have three sides but only two. Saying that a candle did not melt in the Sun can be false, but not contradictory. It is possible for us to imagine a candle that may not melt even in the heat. But can you think of a triangle with two sides?

Hume's critical analysis of causality created an upheaval in the fields of both – Philosophy and Science. All the philosophers after Hume had to take into account his analysis of causal relationship and induction. The attempts made to counter his views were helpful for the development of Philosophy, especially of epistemology and methodology.

The Scientific Perspective

By now, we have learnt how the cause-effect relationship was studied by various traditions and by various thinkers in the history of philosophy. It is worth-noting that

all these explanations were fundamentally based on thought-experiments. In the journey of philosophy, when the investigators started using instruments alongwith thought experiments for exploring the objective reality, a separate journey of 'science' began. Now, let us see how Science looks at this topic of causation.

We have seen that Science studies the laws of nature. These are the laws that are universal and valid for all time. How did man come to know these laws? Human beings used observations and experimentations and understood the patterns in the results that they obtained through these. They found that there was a consistency in the observations made in similar circumstances. That is how a law was comprehended. A law is proved only when there are no observations contrary to it. For example, the law of conservation of energy and matter.

The important point in this process is that all this happens with reference to the objective reality. In the context of causal relationship, Science can explain why something happens in a particular way only when it falls within the range of scientific laws, i.e., within the range of objective reality. With the help of laws of science, one can explain why one cannot produce a ring from the air or why gold cannot be doubled just by sitting in one place. But the method of science; that is the method of knowing the objective reality cannot explain everything that falls within the range of the subjective and intersubjective reality. For example, many things in the field of art are subjective and intersubjective. They cannot be explained with the method of exploring the objective reality. A particular art-object may be beautiful for someone and may not be so for someone else. The question whether the art-object is actually beautiful or not is irrelevant in this context.



Let's do!

Discuss in groups those examples of subjective and intersubjective reality that cannot be explained with the method of exploring objective reality. Understand the difficulties that arise in giving an objective explanation of these examples.

When, we look at a happening as an effect, the immediate question that comes to our mind is, 'what must be its cause?' For example, when there are unseasonal rains, we ask, 'why did it rain?' Suppose, if it is explained that it rained due to a low pressure system created somewhere far in the ocean, we would get the answer. We at least feel we have found the answer. The framework in which the earlier philosophers discussed the issue, whether the effect pre-exists or not in the cause; is not applicable to modern science. Science uses the terminology of probability while understanding something as a cause. Using the same terminology, it also answers the question whether the Sun will rise tomorrow or not (which basically means, will the earth rotate or not). Actually, in this particular instance the probability is so high that instead of probability it appears to be a matter of certainty. There are clouds but the probability of whether it will rain or not is far less than the probability of sunrise. Because, there are many other factors that can affect the rainfall.

We may ask who made the laws of nature. In this regard, Science believes that there is no objective evidence to suppose that

someone made them intentionally. Let's take an example. Imagine, we are walking along a riverside. We see the open bank of the river. The picture of the bank looks like this. At the bottom there are large stones, above them there are small stones and at the top even smaller stones and soft soil. Someone amongst us may ask, 'who must have arranged it so systematically?' We say that it need not be arranged by someone. It is due to the geographical processes operating in accordance with the laws of nature. This arrangement may not remain as it is forever. It will keep changing continuously. This change does not occur arbitrarily. Even for these changes, the laws of nature are responsible. And the same thing is applicable to the whole universe.

Now, you must have understood the relations and differences between philosophical understanding and the contemporary scientific understanding of the cause-effect relationship.



Riverside - There is no need of anyone to create the layered structure from large stones to soft soil. This happens due to geological reasons responsible to it.

Purushartha - पुरुषार्थ
 Moksha - मोक्ष
 Kaivaly - कैवल्य
 Apvarga - अपवर्ग
 Nirvana - निर्वाण

Satkaryavada - सत्कार्यवाद
 Parinamvada - परिणामवाद
 Vivartavada - विवर्तवाद
 Asatkaryavada - असत्कार्यवाद
 Arambhavada - आरंभवाद

EXERCISES

Q.1 Find the odd word/pair out and write.

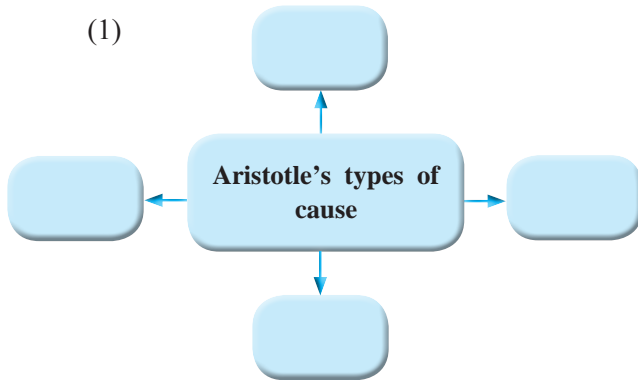
- (1) Earth, Water, God, Fire.
- (2) Material cause, Formal cause, Final cause, Thought cause.
- (3) Observation, Change, Experiment, Conclusion.

Q.2 Distinguish between the following.

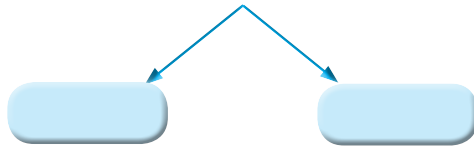
- (1) Satkaryavada and Asatkaryavada.
- (2) Cause and Effect.

Q.3 Complete the concept-map/flow-chart.

(1)



(2) **Types of Satkaryavada**



Q.4 Write a short note on the following.

- (1) 'Entelechy'.
- (2) Aristotle's four-fold causation theory.
- (3) Satkaryavada.

Q.5 Write the answers in 20-25 words.

- (1) What are the two important questions

asked in Indian tradition regarding causation?

- (2) Why is Sankhya's 'Satkaryavada' called 'Parinamvada'?
- (3) Why is Advaita Vedanta's 'Satkaryavada' called 'Vivartavada'?
- (4) What is 'Aarambhavada'?

Q.6 State with reason whether the following statements are true or false.

- (1) Aristotle explained the idea of God in terms of 'Unmoved mover'.
- (2) There is a relation between potentiality and actuality.

Q.7 Explain the following statements with examples.

- (1) Not in a pail unless in the well.
- (2) According to Hume, causal relation is not a necessary relation.

Q.8 What is Asatkaryavada? Explain with example.

Q.9 Explain the four types of classification of change given by Aristotle.

Q.10 Explain in detail David Hume's notion of causation.

Q.11 Write a dialogue on the following.

Discussion among the players or audience about the causes behind losing the match.

Activity

Make a picture-story of a chain of causes and effect of different things or events. Present these stories in an exhibition.

☆☆☆

3. Who am I?... What am I?

- **Introduction**
- **Indian philosophy**
- **Western philosophy**
- **Scientific perspective**

Introduction

We seldom or in fact never ask ourselves, 'who am I?'. When we come across a stranger, an obvious question that comes to our mind is, 'who is this person?' We may even ask "May I know who are you?" The other person may also ask the same question in return. Neither of us get baffled by these questions! Rather we introduce ourselves to each-other. This introduction can be a lengthy one including name, place, education, occupation, likes, dislikes, hobbies etc. or it can be a short one by mentioning just the name. We usually carry a college identity card or even the card. This identity card provides specific information about us and also a photograph.



This identity is necessary and even sufficient in order to get access to certain places or for the bank and government office related work. However, just a formal introduction is generally not enough for the

relationship between two individuals. For example, a relation develops between fellow travelers. In addition to the formal introduction, other aspects such as understanding each-other's personalities, opinions, habits, manner of speaking etc. are also included in this relationship.

Many a times we find that even in a short meeting we learn a lot about a person. At times we face such situations where we doubt whether we have really understood the person we have known for years. Moreover, we may sometimes even surprise ourselves by what we speak and the way we behave. We say, 'I never thought I would do that or behave like that'. If that is so, doesn't it mean that we have not really been acquainted with ourselves? We do not know ourselves well. We may be able to respond to the question 'who are you?' in such a way that the other person understands, accepts and is satisfied with the given information. Nevertheless, this information that is provided to the person is in a way superficial. That is because we have never asked the question 'who am I?' to ourselves and have never tried to find its answer.

We all know that grammatically the 'I' is a first person, singular pronoun. Every individual uses the pronoun 'I' while talking about oneself. That means everyone's 'I' is different from the others 'I', it is unique. At times we say 'I am not like you to speak/act/behave in this way'. Our sense of 'I' is our 'distinctness' from others. The information provided in any identity certificate mostly introduces us on the basis of caste, religion, age, gender, class and education. It gives a fair idea of our social, cultural and economic status. There may be many people who have the same economic and social status. That means according to the above mentioned

criteria we may be similar to many other people. However, our behaviour, our way of thinking, our habits, our emotions, opinions, values, thoughts are mostly personal or private in nature. The 'I' that we consider as different from others is a unique blend of all these different aspects. Many of these aspects are changeable and they keep changing.



Let's do!

Prepare a collage of your photographs since childhood. Gather all the collages and exhibit them in the class.

We, however, believe that all these changes have taken place in 'me'. According to the metaphysical terminology, 'I' is a substance in relationship with which these changes occur.



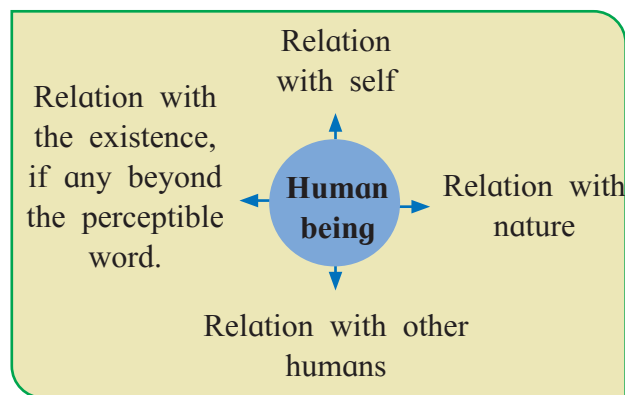
Let's do!

Make a concept map in a group that explains the nature of 'I'.

If the 'I' is considered as a substance, then it obviously turns out to be independent and self-existent. But, basically is there any such substance? If yes, then what is its nature? Matter or consciousness? Many such questions arise in philosophy. Fundamentally, the question "Who am I" or "कोऽहम्" does not refer to any specific individual 'I'. As we have seen above, each person's 'I' is distinct from others and is one of its kind. It is obvious that at that level of distinctness, a general answer to the question 'who am I' is not possible. But philosophy is interested in knowing that 'I' which is commonly found in all human beings. In a sense, it is the 'I' that represents the mankind. It is the 'human self'. So, the answer to the question, who am I? introduces man to one's own self.

As we have seen in the previous year,

the four relations that philosophy primarily studies, also includes man's relation to one self.



This study is essential to live a good life. In order to know who we are, what we are, our abilities and limitations, what we want, what we do not want, what we should do, what we should not do, we must first understand what we exactly are when we say we are 'human beings'. This question has great importance in metaphysics, a branch of philosophy. The responses given to this question directly affect the problems and concepts of other branches like: epistemology, ethics, aesthetics etc. Contemplations on self are found in both - the Indian and the Western traditions.

Indian Philosophy

Charvaka Darshana

We know that the Charvakas are materialists. They obviously reject the existence of consciousness or non-material substance independent of material body. This does not mean that they deny the existence of consciousness or awareness. As long as we are alive, our body is animated. According to Charvakas, this conscious body itself is the 'I' and that is their answer to the question 'Who am I'. In other words, Charvaka deny the existence of soul.

It is generally believed that the 'soul' is the consciousness that does not perish with the body. Idealist and realist philosophers believe in such an independent existence of

consciousness. However, the materialists assert that the consciousness necessarily emerges from matter/material substance only. The obvious question that is asked here is, if the material substance is fundamentally devoid of consciousness how can consciousness emerge from it? Charvakas answer this with the help of some analogies. Just as the combination of green betel leaf, brown betel nut and white lime if chewed together produces red color which does not exist in any one of them; peculiar combination of the various material elements produces consciousness. Charvakas define soul as ‘the conscious living body’. They would always state “Chaitanya vishishta deha eva atma”. As a result, they explicitly rejected all the then existing philosophical views and common beliefs, that the soul is immortal, that it goes to heaven or hell after death or that it takes re-birth and enters a new body etc. This view of Charvaka is known as ‘Bhutchaitanyavada’ or ‘Dehatmavada’. This metaphysical standpoint of Charvakas is logically consistent

with their epistemological perspective which accepts perception as the only valid source of knowledge. We shall study their epistemology in the coming chapter.

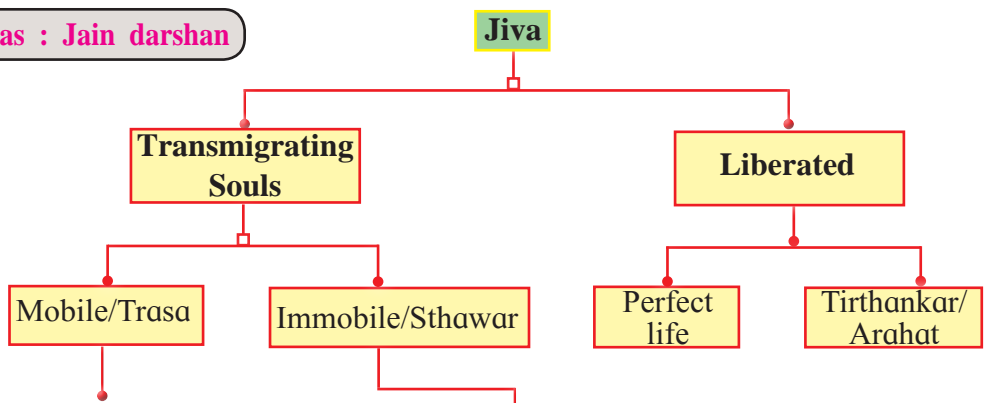
Let's search!

Find out the examples suggesting ‘Consciousness emerges from the material substance devoid of consciousness’.

Jaina Darshan

Jainas are realists; they believe that every living organism is a combination of two independent substances viz., the material body and consciousness. According to Jainas, not only animals, but plants and even dust particles also have souls; however, the level of awareness or consciousness differs. Jainas have systematically classified the jivas (living beings) on the basis of following criteria: their ability to move, the number of senses they use to experience the world, whether they are liberated or bound.

Classification of Jivas : Jain darshan



The no. of Sense	Name of Sense	Examples
Two sensed	Touch, Taste	Worms
Three sensed	Touch, Taste, Smell	Ants, Bugs etc.
Four sensed	Touch, Taste, Smell, Sight	Spiders, Bees Flies etc.
Five sensed	Touch, Taste, Smell, Sight, Sound	Cows, Horses, Human etc

- One sensed
 - Prithvikaya earth-bodied
 - Aapkaya water-bodied
 - Agnikaya fire-bodied
 - Vayukaya air-bodied
 - Vanaspatikaya plant-bodied

Although there are such differences in the consciousness level of different jivas; every jiva is of the nature of consciousness. This jiva itself is the knower, the doer and the enjoyer. Every jiva has the potentiality to attain infinite knowledge, faith, power and bliss. However, there are obstacles that need to be overcome. The material body, to which the jiva is connected, causes these obstacles. The material body is formed from the minutest particles of matter, which are known as 'Pudgala' in Jaina darshana. 'Pudgala' means the particles or atoms that can be combined or disintegrated. The passions and desires present in jiva or soul originating from their past karmas, attract peculiar particles towards the jivas taking a particular form. Consciousness exists in each of these particles of the body. The body, the senses, the mind are all considered to be the obstacles in the path towards the perfection of the soul. Until this perfection is achieved, the soul remains bound with matter. It continues to move from one body to another after the death of the earlier one. Jainas believe that faith, knowledge and character are essential in order to get liberated from the cycle of re-birth. The Jaina answer to the question 'who am I' is that, I am the soul that can attain infinite wisdom, faith, power and bliss on liberation.

Buddha Darshana

Other than Charvaka, the school that rejects the existence of soul in the Indian tradition is Buddhism. Their reasons behind this are much different from those of the Charvakas. We have seen that Buddhism does not believe in any kind of permanent or eternal substance. They believe that impermanence is the essential nature of Sat/Reality. With reference to the 'I' or 'Self' this position implies that the 'self' is constantly changing. There is nothing in us which is constant from birth to death. We are different every moment. But we are not aware of this change that takes place from moment to

moment. We do change, but it does not mean that every moment we become a completely different person. Many a times when friends meet after a long time they say, 'You look just the same; you have not changed a bit.' The experiences and memories that we have gathered since our childhood make us believe that we are the same person; it is the same 'me'. If we are constantly changing, then why do we experience constancy or identity?

The answer of the Buddhists is that, what we experience is a kind of continuum. However, continuity is not eternity or permanence. If we take a pot of oil and pour it slowly, we see a continuous stream of oil. But in reality it consists of several drops. Due to the succession of these drops we do not see that they are distinct. Every moment a new drop is poured out of the glass but we look at them as a single constant flow. Same is the case with our existence. It is made up of several changing constituents. There is no constituent or substance which is present throughout. The arrangement of these constituents keeps changing; but their continuum is maintained, since there is no interruption. As a result, we start feeling that there is some never-changing, permanent principle in us. To clarify this further, Buddhists give an example of the flame of an oil lamp. The flame that burns in the lamp is different every moment, since every moment a different drop of oil burns along with a different particle of the wick using the oxygen in the air. But due to the rapid succession and continuity we experience it as one and the same flame. Similarly, our existence is composed of five components according to Buddhism.



Let's Talk!

Discuss with your classmates the continuity in change and the experience of constancy it gives.

Sankhya Darshana

According to the Sankhya, 'self' means soul. It is completely different from the body, mind and intellect. The self is the purusha while the body, mind and intellect etc. are prakriti. In human beings both elements exist together. Generally, we identify ourselves with our body. We have also seen that Charvakas too believe so. Sankhya, however,

Panchaskandha (five aggregates):

- 1) **Rupa skandha** : physical body or material form
- 2) **Vedana skandha** : feelings of pleasure, pain and indifference
- 3) **Sandhya skandha** : giving a specific name to that experiences
- 4) **Sanskara skandha** : after naming the reawakening of the past impressions related to it
- 5) **Vidnyana skandha** : consciousness of an object generated through sense-experience

Rupaskandha is material while the remaining four skandhas pertain to mind. 'Self' does not refer to any soul, individual or cosmic. Actually collection of the five aggregates is only a named as 'Self'. In order to explain this view better we can refer to the dialogue between King Milinda and the Buddhist monk Nagasena.

Milinda : What is your name sir.....?

Nagasena : I am Nagasena. I am only called that way, but there is no such thing as 'Nagasena'.

Milinda : If there is no 'Nagasena', then who is the one that prays, who puts on certain robes, who eats, stays, follows morality, is in meditative state and attains nirvana? There is no merit, demerit, there is no doer and there is no one who performs meritorious or sinful acts, there are no consequences or fruits of good and bad deeds. Then is Nagasena merely the

propound that to identify the body with the 'self' is ignorance. Our self is in fact our soul. Consciousness is the very nature of the soul. It never changes or perishes. It has no joys and sorrows. It does not perform any action. Change, activity, pleasure and pain, desire and aversion, all these are present in the body and mind, meaning these are thus the attributes of prakriti.

name given to the hair that grows on body...?

Nagasena : 'I did not say that, Oh king'

Milinda : Then is Nagasena either the nails or teeth or skin or flesh or nervous system or brain any one of these or all of these?

Nagasena rejects all these possibilities.

Milinda : Then is Nagasena the collection of all the aggregates?

Nagasena : No, Oh king.

Milinda : Is there anything in Nagasena apart from these skandas?

Nagasena answered this question negative and then said,

Nagasena : Oh King, have you come walking or in a chariot...?

Milinda : "In a Chariot."

Nagasena : Then please explain what is a chariot. Is the chariot the spokes, axle, the chassis or carried? Of course not. Is the chariot then a combination of all of these? No it is not. Is it something apart from all of these? Nay, not so. But that which is made from the combination of all these parts is called 'Chariot'. That means chariot is not any permanent substance. It is the combination of all these elements and commonly known by this name. Just as chariot is not a permanent object, similarly soul is not a permanent object. The collection of the five aggregates is called 'Soul' or 'Self'.



Even though the self is not the doer or the enjoyer, it is the knower. Everything that manifests from prakriti can be an object of knowledge, but the purusha who exists independent of prakriti can never be the object of knowledge. Everyone's self is different. It does not perish with the body. According to the Sankhyas, we are not the changing, perishable bodies; rather, our true nature is an immortal soul which is pure consciousness, that is what we truly are.

Advaita Vedanta

Since the Jaina and Sankhya schools of Indian philosophy are not materialists, they accept the independent existence of self, but at the same time they do not deny the existence of matter. The Advaita Vedanta darshana is essentially Idealist; hence it accepts the existence of self only and rejects the existence of material substance. Similarly, being monist, it does not accept the plurality of selves like the Sankhyas. We have studied that, for Advaita Vedanta, Brahman is the one and only reality. What we understand as 'Soul' is Brahman itself. The answer to the question 'who am I?' ('कोऽहम्?') is, 'I am Brahman'. Just like Brahman I am without any attributes, formless, eternal, indestructible, non-moving and never changing. It is only because of the ignorance that we identify our self with the body and distinguish our self

from others. It is true that our action and behaviour at practical level is in accordance with this belief. However, Advaita propounds that when we attain the knowledge of self that is the knowledge of Brahman, we experience ourselves as the all-pervading pure consciousness.



Let's do!

Present a debate following the method of 'vaad sabha' between the materialistic and the spiritualistic positions regarding the soul.

Western philosophy

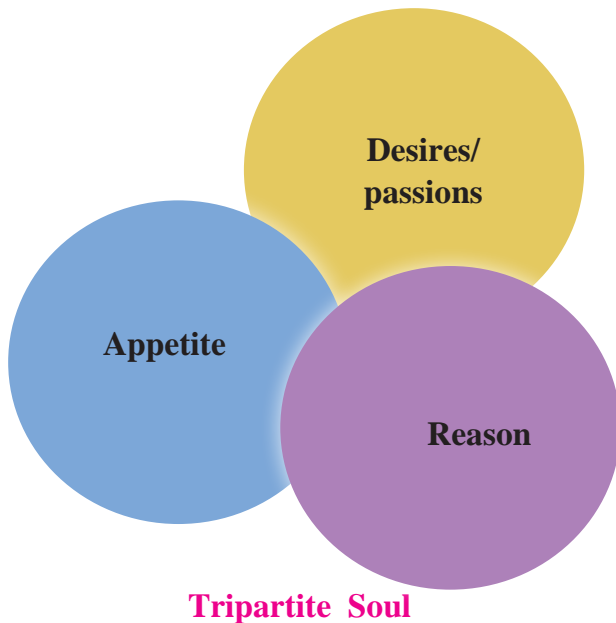
It is observed that since pre-Socratic period western philosophy has been contemplating over the nature of human 'Self' or 'I'. All of you must have studied the Pythagorean theorem in geometry. Did you know Pythagoras was an ancient Greek philosopher? Pythagoras considered philosophy as a way of life. He had even established a sect of those who followed this path. The Philosophy of Pythagoras and his sect is known as Pythagorean Philosophy.

Like the Sankhya tradition of India, this philosophy too asserted that human being is a combination of body and soul. They accept both the notion of re-birth and the immortality of the soul. They were of the belief that the body is as if a cage that traps the soul and the objective of soul is to free itself. On the contrary, Democritus being a materialist believed that the soul is essentially material in nature. According to his view the soul is created from the soft and round atoms of fire. However, he rejects the immortality of the soul.

Plato

Plato was also influenced by the view that the body and the soul are two independent substances. Pythagoras and Plato were the only two philosophers in the mainstream of

western philosophy who have accepted the idea of re-birth and liberation (of Indian style). As we have seen previously, Plato had divided the reality into two independent worlds; the world of abstract, universal forms and the world of concrete, particular objects. The soul is the resident of the world of forms whereas the body resides in the world of particulars. Like all other particulars the body takes birth, undergoes change and perishes. The soul, however, never changes; it is neither created nor destroyed. When it is in the world of forms it has knowledge of universals and forms. When the soul gets connected to the body it forgets that knowledge. Although the particular objects remind the soul of the world of forms, it recollects the knowledge only through the study of philosophy. The soul is basically indivisible. However, the soul that is bound with the body comprises of three parts namely: reason, emotion/desires (spirit) and appetite (basic instinct). Plato has asserted that these three parts must remain in balance and the passions and desires must always remain under the control of reason.



Aristotle

According to Aristotle, only the world of particulars exists. The forms or essences do

not exist in any other world; but are incorporated in the particulars themselves. Every particular object is made of both; the material substance and the form. One can never experience a formless matter or a matter-less form. There is a combination of matter and form even in the living beings. What distinguishes living beings from the non-living things is that they are mobile. They can move themselves. The principle of mobility is inherent in them. They develop in accordance with this principle. Every living being has potentiality to perform certain functions. Development is the actualization of these potentialities. The form of the body of the living beings is as per their potentialities to perform specific functions. A body is formed by the coming together of the matter and its specific arrangement or form. According to Aristotle this form is the soul. He also believes that all living beings have soul.

Aristotle's hierarchical classification of soul

Type	Functions/Potentialities
(1) Human Beings	Nourishment, reproduction, sensation, imagination, mobility, intelligence
(2) Animals	Nourishment, reproduction, sensation, mobility
(3) Plants	Nourishment, reproduction

He classifies them into a hierarchical order as per their potentialities: plants, animals and humans. Soul being the form of the body, it perishes along with the body. Therefore, Aristotle does not accept the idea of the immortality of the soul. Rationality is the essential characteristic of the human soul. Animals and plants are not rational. That is why he says that it is beneficial for a human being, to live in accordance with reason or to live a rational life.

The Mediaeval philosophy was mainly influenced by the Christian religious ideas; according to these ideas, man is a combination of material body and a conscious soul. The body is perishable whereas the soul is immortal; which means that it survives even after the destruction of the body. However, most of the medieval philosophers did not believe in re-birth. They believed that God has created the universe out of nothing and man is his most cherished creation. It was their belief that God created man in his own image. According to them, God is the father all human beings, therefore the objective of human beings should be to live life as per his commands and in a way that would please God. Barring a few exceptions, the dualist nature of man was accepted by western thought tradition until very recently.



Let's write!

Write the similarities and differences in the concept of 'Self' by Aristotle and Charvaka.

Rene Descartes

All the philosophers who embrace both realism and dualism have accepted the dual nature of man. Descartes is not an exception. We have already seen that according to Descartes, the two independent substances, viz., matter and consciousness combine in human being. Body is made of material substance and 'extension' which is an attribute of matter is integral to the body. However, the mind or soul lies beyond space and reason or thought is its essential characteristic. These two independent substances come together because of God. What kind of relation exists between them after they come together, needs to be considered. As per our day-to-day experience some or the other interaction constantly takes place between the body and the mind.

When one is not well one does not feel

like doing anything, when one is distressed and depressed one loses appetite. We see that a cheerful mind forgets illness, while physical exercise improves our mental state.



Let's Talk!

Discuss the examples from our day-to-day life which show the interaction of mind and body.

On the basis of such experiences, Descartes propounds the theory of mind-body 'interactionism'. Although the body and the mind are completely different, they can influence each-other; there is a causal relation between them. This view of Descartes was considered as controversial in metaphysics.

After Descartes 'mind-body relationship' emerged as a new metaphysical problem.

Theories regarding the nature of body-mind relationship and the philosophers-thinkers who propounded them.

Theory	Philosopher
(1) Interactionism	Rene Descartes
(2) Occasionalism	Geulincx, Malebranche
(3) Parallelism	Spinoza
(4) Pre-established Harmony	Leibniz
(5) Behaviourism	Ernst Mach, William James
(6) Behaviourism	James Watson, B.F. Skinner

David Hume

In modern philosophy the views of the British empiricist David Hume are very peculiar.

Hume is regarded as a skeptic. He raised basic doubts about some of the most important concepts of his time. One of those important concepts is Substance. According to the empiricists only that which is experienced by our sensory organs is real. They assert that

anything that is real cannot be beyond our sense-experience. In accordance with this view, Hume propounds that we do not experience anything which is denoted by the term substance and which is supposed to be the substratum of all qualities; hence there is no need to accept the existence of substance. What we experience is only various characteristics of physical objects, their magnitudes and interactions. We cannot experience anything which is beyond this such as a 'material substance'. Similarly, if we try to explore our inner world and try to understand what is known as 'I' or 'self', we merely stumble upon several thoughts, feelings, sensations, ideas etc. Our consciousness is nothing but a constant flow of all these experiences. In this constantly changing flow we never experience any kind of permanent, eternal, conscious substance which is known as 'Soul'. Our memory as if forms a chain by connecting all these different elements and that is how we experience of the continuity of the 'I'. However, we have seen that continuity does not mean permanence.

When we watch a movie, what we experience is just a collection of constantly changing images and sounds. It is not a single 'picture' but it is a series that presents several pictures together. It is a 'motion picture'. Likewise, Hume argues that our self is just a bundle of thoughts, ideas, feelings, passions and motivations.



Let's discover!

Find out how the animation films are made.

The most recent developments in western philosophical thought with reference to the concept of 'Self' are influenced by modern scientific research on artificial intelligence, neuroscience and other such branches of sciences.

The Scientific perspective

Philosophers and thinkers tried to contemplate about the concept of self and our awareness and association with self. Scientists took this search ahead with the help of scientific methodology. Scientific methodology is nothing but a verifiable study of objective reality. The two branches of biology, namely evolutionary biology and neuroscience tried to explore our understanding of the self. As we compare humans with other animals we find out that other animals too must be aware of their existence. But Humans are different in a way that humans also have awareness of awareness. Our species has been named as 'homo sapien sapien' on the basis of the same criteria. However, the puzzle is not entirely solved yet. Neuroscience is trying to pursue the question what exactly is awareness or consciousness. Can we call the collection of feelings, sensations and thoughts as awareness? Since it is the self that experiences feelings, sensations and thoughts it is important to discuss awareness while discussing self. Evolutionary history of humans tells us certain important points about self.

Evolutionary perspective tells us that humans are social beings. Living in groups helped them to deal with the brutal forces of nature. However, our sociality is not comparable with the sociality of ultra-social organisms like ants. You must have seen an ant hill. A single ant looks like a separate animal. However, it is a part of a super colony. Every ant has a given function. Only the queen is capable of laying eggs. It is because of this behaviour ants are called as eu-social animals. Ant hill is called as super organism. Humans are gregarious but they are not eu-social or a super organism.



Let's discover!

Let's gather more information on gregarious animals. Discuss the traits of their social life in class.

We do believe that every human has his own aspirations and also the potential to fulfill those desires in the given framework of time, space and conducive/non-conducive environment. Each individual has a right to reproduce. (this is a general statement, made from species point of view.) It is important to know the association between individual and society while trying to understand the concept of self in humans. In the machine era, because of the complexity of technology, humans have to come together artificially (that is more in number than their natural, biological group size). This gives rise to unending conflict and compromise. Let's study this further in the Chapter on Science, Technology and Philosophy.

In the tradition of philosophy, we will find many such terms and concepts as mind, soul, spirit etc. Today, science tells us that all these names ultimately denote only one organ and that is brain. Brain is the basis of awareness. Brain undergoes many changes from childhood to adulthood. Different enzymes and hormones affect its functioning. Thanks to neuroscience, we now know how

all of this is ultimately connected with human behaviour.

Is the consciousness and intelligence one and the same thing or are they different? This is the next important point in the discussion of self. When we refer to awareness, we are basically talking about feelings, emotions and thoughts. Intelligence can be of different types as intelligence in pattern recognition, carrying out mathematical processes, intelligence in tool making, tool handling etc. The most important aspect of being intelligent is to be able to change. Humans domesticated other plants and animals by using his intelligence as a powerful tool.

20th century saw the rise of modern day computers and they kept on evolving. Today, as far as intelligence in data handling and data processing is concerned computers prove to be far too faster and superior than humans. On this background, as we witness the decoupling of awareness and intelligence, there is a great fear what will computers do with humans on the basis of sheer intelligence. Our ideas of self may undergo sea changes in coming era. We will discuss some of the issues related to this in the last Chapter.

Chaitanya - चैतन्य

Bhutchaitanyavada - भूतचैतन्यवाद

Dehatmavada - देहात्मवाद

Pudgala - पुद्गल

Vedana - वेदना

Sandhya - संज्ञा

Sanskara - संस्कार

Vidnyana - विज्ञान

EXERCISES

Q.1 Fill in the blanks choosing the correct option from the bracket.

- (1) From scientific perspective is the base of consciousness.
(mind, brain, feelings)
- (2) According to Charvaka, when different material substances come together in a peculiar combination then is manifested.
(consciousness, intellect, insight)
- (3) doesn't accept immortality of soul and re-birth.
(Jain, Charvaka, Advaita)
- (4) According to Buddhism is the essential nature of 'Sat'/'real'.
(purity, impermanence, permanence)
- (5) proposed the theory of 'body-mind interactionism'.
(Descartes, Plato, Hume)

Q.2 State with reason whether the following statements are true or false.

- (1) Aristotle accepts the idea of immortal soul.
- (2) Advait Vedanta is pluralist.
- (3) According to Charvaka consciousness is by product of matter.
- (4) According to Hume our consciousness is a constant flow of thoughts, feelings, sensations, ideas.

Q.3 Complete the concept map/flow-chart.



Q.4 Explain the following statements with examples.

- (1) A human being is not a super-organism like ant.
- (2) My 'I'ness is my distinctness from others.
- (3) What we experience is continuity.

Q.5 Write a short note on the following.

- (1) Dehatmvada
- (2) Panch-Skandha
- (3) Sankhya's notion of self
- (4) Difference between intellect and consciousness.
- (5) Plato's notion of self.

Q.6 Write the answers in 20-25 words.

- (1) According to Democritus what is the nature of soul?
- (2) What is Descartes's body-mind interactionism?
- (3) Give Aristotle's classification of soul.
- (4) State any four theories of body-mind relation and the philosopher advocating those theories.
- (5) What is a super organism?

Q.7 Explain in detail Buddhist notion of self.

Q.8 Explain Plato's notion of self.

Activity

Collect stories, poems on the theme of self awareness, self image and discuss them with your classmates with the philosophical context of 'self'.



4. How do we know?

- **Introduction**
- **Indian Epistemology**
- **Western Epistemology**
- **The Scientific perspective**

Introduction

Human beings have been endeavoring to attain knowledge since the ancient times. Though, they have acquired a great amount of knowledge in the last thousands of years, their thirst for knowledge does not seem to be satiated. Actually, all living beings have the capacity to gain some kind of knowledge or other. It is essential for their living. But, the knowledge that different species acquire does not grow with time nor does it appear to be changing in a qualitative manner. However, the depth, extension and subtlety of human knowledge keeps on growing in the course of time. The process of adding to the already accumulated knowledge happens continuously.

We have been observing that it's the awareness of awareness that distinguishes humans from other living beings. Due to this two-layered awareness, man does not merely have knowledge like other living beings but also is aware of having knowledge. That is why, the concept of 'knowledge' itself can become an object of knowledge for him. We experience that pets such as dogs and cats have an instinctive as well as experience-based knowledge of where to find their prey or which place is dangerous for them. But, do they ever face questions such as "How do I have this knowledge? What do I need to do in order to make this knowledge more precise?" This does not seem to be the case. Humans however have been raising these and many such questions for last hundreds of years.

As we have seen last year, the branch of philosophy called epistemology studies many such questions critically in a detailed manner. What is knowledge? What is the difference between knowledge on the one hand and other related concepts such as opinion, conviction, belief, information on the other? What are the sources or means of knowledge? How can knowledge be justified? What is truth? In this lesson, let us get acquainted with the way in which many such questions have been considered in both the Indian and the Western tradition.

Indian Epistemology

We do not use the word 'knowledge' in a very precise way in the daily life. We use the term knowledge to refer to our opinions, convictions and beliefs also. We use that word even to denote whatever has been introduced to us, whatever we are acquainted with or whatever we think we understand. From the perspective of philosophy, this usage of the word is not always appropriate because there is a difference between thinking that we have knowledge and actually having knowledge. What we 'think', we 'understand' need not be true. If it is not true, it will not be correct to call it knowledge. Philosophy is interested in the knowledge that qualifies the test of truth. It is the means and types of such knowledge, that Philosophy wants to study.

'Prama' is a word that is used in Indian Philosophy for this kind of knowledge that qualifies the test of truth. The word 'Dnyana' (knowledge) is used for whatever we comprehend or understand. We come to know the world by way of using many means such as sense perception, reason, memory, testimony etc. But, the world always is not exactly the way we feel, see or understand it.



Let's Talk!

Make a list of various examples of knowledge. Find out which one of these can be qualified as prama, i.e. true knowledge. Discuss the different examples in groups.

We have learnt in the previous year that what seems to be the case, may not actually be the case, “Appearances are deceptive.” But in the Indian tradition, even if it has not been examined whether, whatever has been understood is true or false, it is still called dnyana (knowledge). If its truth is established after scrutiny, it is called ‘Prama’. To have ‘prama’ is to know the object as it is, without any error. The person who attains prama is called ‘Pramata’. The means through which knowledge is gained is called ‘Pramana’. ‘Prameya’ is the object that is known.

On the basis of our initial discussion regarding the difference between non-human beings and human beings, it can be said that all the living beings other than humans also have knowledge in the sense of Dnyana because they perceive through senses. But only humans can assess whether the knowledge gained is correct or incorrect, true or false. That means only human beings can attain prama. All the living beings can be called knowers (dnyata), but only human beings can be called pramata. Humans can acquire prama on the basis of their organic, intellectual and linguistic abilities by way of using various means or pramanas such as sense perception, inference, testimony etc.

Pramana

The consideration of pramanas is at center of the epistemology in Indian tradition. The objective of attaining prama cannot be achieved unless appropriate means of knowledge are used. That is why, in the Indian tradition one finds an in depth analysis of questions such as what are the means through which prama can be attained?

What is the number of such means? What is their nature? etc.

The concept of pramana is much deeper than it appears to be. ‘Pramana is a means to attain prama’, is one of the meanings of the term praman. In addition, there are at least two more meanings that the term has. According to one of these meanings, pramana is a kind or a type of prama. This sense of the concept of pramana is accepted by the Bauddha and Jain darshana. According to them we cannot differentiate between the means of knowledge and their product in the process of knowledge acquisition. Instead, if we classify the knowledge that we gain, on the basis of differences in the nature of instances of knowledge, we would more clearly understand what knowledge is. The types of knowledge or prama that we get through such classification are also called pramanas. The Jain and Bauddha darshana tend to believe that the pramana accepted by the Indian tradition; such as perception, inference, testimony are not only means of prama but also types of prama.

The third sense of the term pramana is evidence or proof, justification or the assurance of the authenticity of knowledge. Even in our ordinary conversation in Marathi, when we ask the question ‘what is the pramana for your argument?’, we are trying to understand what is the evidence for that assertion. We want to know whether it is true or false. This basic meaning of the term pramana is connected to both the meanings stated above. When we say that pramana is an instrument of prama, it means a reliable or an authentic instrument with the help of which prama can be attained. When we say that pramana is a type of prama, it means it is a type of reliable or authentic knowledge.



Let's do!

Prepare a concept-map explaining different meanings of the term pramana.

Nyaya Darshana's View of Pramana

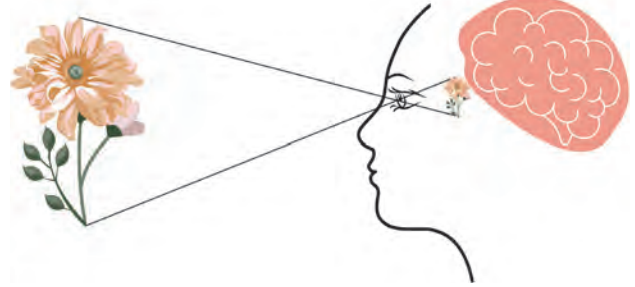
Nyaya darshana has a very important place in the Indian understanding of pramanas. The concepts such as dnyana, prama, aprama, pramana etc. were very systematically put forth initially by the Nyaya philosophers. Let us try to briefly understand their views about pramana.

According to Nyaya view, knowledge illuminates the objects of knowledge in the manner in which a lamp illuminates objects in the world. At a gross level, knowledge is divided into two types viz. experience or presentative cognition (Anubhava) and memory or representative cognition (Smruti). We have a direct awareness or understanding of the object in experience, while understanding through memory is in the form of remembering the experience. Both these types of knowledge are further classified into 'Yathartha' (true and valid) and 'Ayathartha' (erroneous). In yathartha knowledge, the object is known as it actually is. When the object is not known as it is, it is called ayathartha knowledge. Knowledge which is presentative and valid is called prama. Non-valid presentative knowledge is called aprama. Nyaya darshana propounds that prama is gained through four means, namely, perception (pratyaksha), inference (anumana), comparison (upmana) and testimony (shabda). Let us get acquainted with these four pramanas now.

Perception (Pratyaksha)

Pratyaksha or perception refers to the sensations that we receive through our sense-organs. We receive the sensations of colour, sound, taste, smell and touch, respectively through the five sense-organs namely, eyes, ears, tongue, nose and skin. We also receive the sensations of pleasure and pain through the mind. This is called perception. Of all the pramanas, this is the primarily important pramana which is accepted by all the darshanas. As per one of the definitions that Nyaya darshana offers,

pratyaksha dnyana is a determinate, non-erroneous and true knowledge attained through the contact between sense-organs and the object. Nyaya darshana believes that soul is the knower, who gets knowledge through the chain consisting of the object - the sense-organs - the mind.



We get the sensations of perceptible objects and their characteristics like colour, appearance, texture, taste, smell etc. through specific sense-organs. It is necessary to be attentive to or be aware of the object that we want to know directly. There can be no knowledge if our mind does not pay attention to the object. For example, when we study with full concentration, though we hear certain sounds that fall on our ears, we do not understand them, because we are not paying attention to them. That is, a contact between the ears and the sound takes place, but our mind is elsewhere. It is not connected with the ears in the real sense. Thus it is the function of the mind to pay attention to the specific object of knowledge. Knowledge through sense-experience is a matter of common experience for us.



Let's do!

Prepare the chain of the connections in the process of knowledge for the object 'book'.

Nyaya darshana has systematically classified pratyaksha pramana, in its in-depth exposition of the same. The main classification of pratyaksha is made into two types, namely, 'ordinary' (laukika) and 'extraordinary' (alaukika). Ordinary perception consists of all the knowledge of objects that we attain through our five sense-organs and the mind. The knowledge of the objects that do not

fall within the range of the experience of the sense-organs is gained by way of extraordinary means. That is why it is called extraordinary perception. Ordinary perception is further classified into the external and the inner or mental perception. External perception is the perception through eyes, nose, ears, skin and tongue; while the knowledge attained by the mind is inner perception. The mind according to Nyaya, is an internal organ. We get the knowledge of pleasure, pain, attachment, aversion etc. through this inner organ.

Extraordinary perception is divided into ‘Samanyalakshana pratyasatti’, ‘Dnyanalakshana pratyasatti’ and ‘Yogajlakshan pratyasatti’. An attribute that is commonly present in many objects of the same type is called a commonality or a universal (samanya). Nyaya darshana believes that when we experience a flower, we do not merely know that particular flower, but also the universal ‘flowerness’. Through this universal, we acquire a universal knowledge of flowers in the form ‘I know what a flower is’. Nyaya darshana believes that this knowledge is attained through samnyalakshana pratyasatti. Similarly, when we see the half-ripe tamarind, we know that it would taste sweet and sour, without actually testing it. We, of course, cannot come to know the taste of anything using our eyes, yet we have such knowledge due to dnyanalakshan pratyasatti. In a like manner, it is believed that a ‘Yogi’ has knowledge of the past, the present and the future. Obviously, it is not possible to have this knowledge by way of sense-perception. It is said that the yogi has this knowledge through yogajlakshana pratyasatti.



Let's do!

Find out the examples of extraordinary perception. Prepare posters of these examples in groups.

Inference (Anumana)

Though, it is true that a large part of our knowledge consists of knowledge gained

through sense-perception, it is equally true that all our knowledge is not acquired through it. That is why, there is a need for other means of knowledge too! One of the important means among these is logical reasoning. By using logical reasoning in our day-to-day life as well as in science, we attain knowledge of the things that cannot be experienced by the sense-organs. In a closed auditorium, when a door is opened a little, we smell the fragrance of the soil and tell the person sitting next to us that it has started raining, without actually seeing the rain. When we observe that the particles of iron are being attracted by an object, we conclude that there is magnetic power in that object. Inference or anumana is the logical judgement about that which cannot be directly experienced, on the basis of that which can be directly experienced.

The term ‘Anumana’ literally means “knowledge that follows some other knowledge”. What we experience, is a mark or indication of what we do not experience. The pug-marks that we find on the trails in the forest indicate which animals have earlier walked on those paths. The famous example of inference that Nyaya darshana offers is as follows : When we see smoke on a hill, we infer that “there is fire somewhere on the hill”, because smoke is an indication of fire. In short, we can say that inference is the knowledge of the unknown on the basis of the known.

There are three constituents of the process of inference, namely, paksha, hetu and sadhya. That which we infer or reason about, is called the sadhya. The place or the site with reference to which we derive the existence of the sadhya, is called the paksha. That on the basis of which we prove the existence of the sadhya, is called the hetu. Hetu is the link that connects the paksha and the sadhya. In the example above, the hill is the paksha, where there is smoke which is the hetu. We prove the existence of fire on the basis of

the hetu 'smoke'. Fire is the sadhya in this example.

'Pakshadharmata' is the existence of the hetu in paksha. The relation of being associated with one-another that exists between the hetu and the sadhya is called the 'Vyapti'. We will not be able to infer the existence of the sadhya from the existence of hetu, if the hetu is not always associated with the sadhya. Smoke is generated through fire. Smoke cannot exist without fire. There is a relation of universal concomitance (vyapti) between the smoke and the fire. "Wherever there is smoke, there is fire" is a statement indicative of the vyapti relation.



Let's think!

Find out other examples of inference and identify the paksha, hetu and sadhya in those examples.

If you minutely consider the process of inference, you will realize that it is a complicated process. It begins with knowing through pratyaksha that the hetu is on paksha. Then, we remember the relation of vyapti between the hetu and the sadhya that we have experienced or known previously. We infer the existence of sadhya on the basis of the actually experienced pakshadharmata and the memory of the vyapti relation between the hetu and the sadhya.

The Nyaya darshan has a very extensive as well as indepth understanding of inference. One of the points that needs to be noted amongst its reflections on inference is that it views inference both as a source of knowledge as well as a way of argumentation. When a person himself or herself comes to attain prama with the help of inference, it is called the 'inference for the self' ('Svarthanumana'). Here, inference is obviously a source of knowledge. We also use inference as an argument in order to prove our conclusion to the other person. This type of inference is called 'inference for the sake of the other' ('Pararthanumana').

Pararthanumana

Nyaya darshana has systematically analyzed Pararthanumana into five elements. These five elements are 'Pratidnya', 'Hetu', 'Udaharana', 'Upanaya' and 'Nigmana'. In order to prove that "there is fire on the hill", pararthanumana is used in the following manner :

- (1) Pratidnya : There is fire on the mountain.
- (2) Hetu : Because there is smoke on the mountain.
- (3) Udaharan : Wherever there is smoke, there is fire, as in the kitchen.
- (4) Upanaya : There is smoke on the mountain.
- (5) Nigamana : Therefore there is fire on the mountain.

Upamana (Comparison)

Upamana pramana refers to the knowledge gained with the help of resemblances. We use upamana pramana when we come to know a new i.e. previously unknown object on the basis of the way it resembles some other already known object. What is important here is not the number of aspects that resemble each-other but whether the existing resemblance is significant or not.

'Upamiti', that is the knowledge attained through upamana is based on comparison. According to the Nyaya understanding, upmana is a comparison between a term or a word and the object that it refers to. Do you remember the description of the giant squirrel that you have read in the previous year? When a person who knows that a giant squirrel is an animal which is like a squirrel but is bigger than the squirrel, see the giant squirrel for the first time, that person will know that the animal being perceived is a giant squirrel. That person will have this knowledge through the coming together of various factors such as the description of a

giant squirrel by a knowledgeable person, the animal perceived, recollection of that description and the comparison based on all these. It is not possible to have such knowledge merely on the basis of perception or memory. That is why Naiyayikas consider upmana to be an independent pramana.



Let's write!

Collect different examples of upamana like the one of gaint squirrel and classify them into groups.

Shabda (Testimony)

We constantly use words while speaking and writing. But have you ever thought what exactly is a 'word'? We all know that a word is made from letters. But, is the word merely a group of letters? Is the word the sound that the ears hear when it is pronounced or the marks/figures that are seen on the paper while reading? Of course not. If, somebody starts speaking to us in a language not known to us, we do 'hear' the words, but say that we have not 'understood a word'. You must have 'seen' the pictorial script of the Chinese language, but can you 'read' it? Not really, right? This is so because a word is not just a sound or a mark. Word is that important element of language, which is meaningful. Mere sound or a mark is not a word - word has meaning. A sentence is generated when many meaningful words come together in a specific manner. A great part of our

knowledge consists of the knowledge acquired by way of the words that are heard and read. However it must be remembered that we do not attain prama through every sentence that we have read or heard. We have already seen that prama is true knowledge.



Let's do!

Collect the examples of the incorrect or false news or information given by the media and discuss the bad consequences that it has on the society.

Obviously, if the words that present falsehoods to us, cannot be called 'pramana', i.e. means of prama. It is for this reason that Nyaya darshana has propounded that shabda is the statement of an 'Apta'. The word apta here does not mean a relative as it ordinarily means in Marathi or Hindi, but it means a reliable person. 'Apta' is a person who is knowledgeable and trustworthy. Such person is neither ignorant nor a liar. That is why this person is reliable. One can attain prama on the basis of the words of such a person. In this era of the tremendous influence of media, especially social media, it is extremely important to remember the definition of the term 'apta'. It is necessary to check whether whatever reaches us through the media is trustworthy or not and it is equally necessary to think whether we ourselves are reliable and knowledgeable as users of media. We would learn to use the media responsibly if we keep these points in mind.

The conditions of meaningfulness of a sentence:

Although, a sentence is generated through meaningful words, this is not enough for the meaningfulness of the sentence itself. The Nyaya philosophers present four conditions that need to be fulfilled by a sentence for it to be meaningful. These four conditions are as follows :

(1) **Akanksha** : Generally, complete

meaning cannot be expressed through a single word. For that a word has to get connected with other words. Suppose, the teacher tells you in the class, "Write", you would naturally ask, "What should we write?" When the teacher says, "Write what is the relation between a word and its meaning", then it becomes a complete, meaningful sentence. In order to be meaningful, the anticipation that a word has

for other words is called 'Akanksha'.

(2) **Yogyata** : There is not only a need for many meaningful words to form a meaningful sentence, the words must be properly related with each-other. Meaning cannot be produced through contradictory words. The sentence, "The fire is cool like ice" does not mean anything as it does not bring coolness and fire together in an appropriate manner.

(3) **Sannidhi** : Sannidhi means nearness, proximity. In order for meaning to be generated through many different words; they must be spatially and temporarily near each-other. If, while conversing with each-other we pronounce the words with the gaps of a few minutes, meaning cannot be produced even if the earlier two conditions

are fulfilled. Similarly, if we write words separately in different lines, they will not be able to generate meaning.

(4) **Tatparya** : Sometimes some words have more than one meaning. In order to determine what such a word means in a particular sentence, one has to take into account what is the intention of the speaker or what meaning is expected by the speaker. The context in which the word has to be used is important for this purpose. For example, if somebody says 'this is not fair', then the word 'fair' has to be taken as 'just or right' in this context. Fair also means lighter colour of hair or skin or a country celebration. But these shades of meanings do not apply in the above-mentioned sentence.



Let's write!

Write a critical essay on "Reliability of the media" and present it in the class.

Naiyayikas have also offered some classifications of shabda. The words that give us knowledge of the perceptible objects are called 'Drushtartha'. The words that give us knowledge of that which cannot be seen are called 'Adrushtartha'. According to another classification, words are classified into two kinds, namely, 'Vaidika' and 'Laukika'. According to Nyaya darshana, the words in the vaidika literature are 'Apaurusheya'. They are not written by any human being. They are true and infallible. Laukika words are the words of the human beings and they can be either true or false. That is why all words cannot be treated as pramanas. Only the words in the Veda and the laukika words of apta are called pramana.



Let's find out!

Think - Share - Pair

Find out sentences which fulfill the conditions of meaningfulness. Ask your friend to examine them and then together present the examined sentences in front of the class.

In the previous year, we had noted the fact that every darshana accepts different number of pramanas. Let us briefly get acquainted with the two more pramanas that Mimamsa darshana accepts apart from the four accepted by Nyaya.

Postulation (Arthapatti)

Sometimes there is an inconsistency between two known things. For example, we may have never seen one of our friends studying during the entire day. We think that she is going to score very low marks in the examination. Actually, she gets very good marks. There is apparently an inconsistency between not studying and scoring high marks. But, this apparent inconsistency can be explained

by saying that she must have been studying regularly in the night. After knowing this, the inconsistency is removed. The knowledge that we attain by way of removing the inconsistency between two known things, thus, is the way of 'Arthapatti' as a means of knowledge.

Non-perception (Anupalabdhi)

All the pramanas seen so far give us the knowledge of the existing things or about the existence of certain things. However, the pramana known as Anupalabdhi gives us the knowledge of the non-existence or the absence of some object. For example, we go in the college canteen to meet a friend, but after reaching there realize that he is not there. If he would have been there, we would have seen him. But, we cannot 'see' his not being there or his absence. Yet, we know it because of the pramana known as anupalabdhi.



Let's do!

Collect more information about pramanas and discuss whether upmana, arthapatti and anupalabdhi should be considered independent sources in a Vadasabha.

The discussion of pramanas is at the center of Indian epistemology. Considering the fact that the prameya, can be known through pramanas, it is important to reflect over pramanas even in order to know what does the universe consist of. We can see here the inter-relation between epistemology and metaphysics. We find that there is inter-dependence between how many and which pramanas a particular darshana accepts and its metaphysical position.

Epistemology in the Western Tradition

The complex inter-relationship between epistemology and metaphysics can be seen in the Western tradition too! The metaphysical question 'what is' was central in this tradition at the beginning. However, in order to know what is or what is not, one has to inevitably

turn to the question how do we know it?

In the course of the development of Western Philosophy, it was only in the period of modern Philosophy that epistemology occupied a central place. However, the reflection over the sources of knowledge had begun in the pre-Socratic era. Parmenides propounded that 'the universe is permanent and eternal and that change is an illusion', while Heraclitus insisted that 'impermanence is the nature of the universe and permanence is an illusion'. However, both of them agreed on one point : the knowledge based on sense-perception is illusory, reality can be known only by way of reason.

In that period philosophers presented mutually inconsistent views about the nature of reality. On this background the sophists advocated scepticism. The sophists did not believe in the potential of human capacities to gain knowledge. That is why they propounded scepticism, which is a theory that doubts the very possibility of objective knowledge. The argument of the sceptic is that due to the inherent limitations of human perception and reason, the nature of what is real cannot be known as it is. They not only believed that human beings can know the world only within the limits of their capacities but also that every individual can know the world within the limits of his or her own individual capacities. For this reason, they also accepted relativism which says that 'knowledge is relative to the individual who knows'. It is in this context that Protagoras' quote "Man is the measure of all things" is famous.

It should be remembered that Western epistemology is by and large constituted in and through the attempts to refute scepticism and relativism.



Let's talk!

Present scepticism and relativism in the form of a dialogue in the class.

An excellent example of this is Plato's

position about knowledge. Knowledge must be true i.e. it must be of 'what is'. Plato firmly believed that knowledge has to be objective, infallible, universal and true at all times. His epistemological position is closely connected with his metaphysical theory of the world of forms. Plato's awareness of the fact that unless the objects of knowledge are unchangeable and eternal, knowledge cannot be true for all times, is at the root of this theory. The definition of 'knowledge as justified true belief' was established through Plato's scrutiny of knowledge in which he asserted that knowledge is not just perception, nor an opinion or a mere belief.

The Concept of Knowledge

When a person claims to know something, that claim should be examined before being accepted. The definition of knowledge mentioned above provides the criteria with which such a claim needs to be examined. Knowledge is expressed through propositions. A proposition is a sentence which has truth value. The sentences that can be either true or false are said to have truth value. The criteria that the definition of knowledge includes are applied to a proposition that expresses knowledge. If the proposition fulfils those criteria, then, it gets the status of knowledge, otherwise, it is treated as a mere belief or conviction.

Let's find out!

Find out the sentences that are not propositions i.e. that do not have truth value and classify them. Take the help of rules of grammar for the classification.

The claim of knowledge is put forward by saying, "I know P". Here, 'P' is a symbol of a proposition. For example, "I know that there are rings around Saturn". Let us see when this knowledge claim can be accepted as being appropriate. We must firmly believe in something that we claim to know. It is self-

contradictory to say that I know that there are rings around Saturn, but I do not believe it. It can be said that though knowledge is objective, belief is the subjective aspect of knowledge.

You, of course, know that to believe in something, is not to know it. If, someone believes that Saturn is the planet nearest to earth, it is not knowledge, since it is not true. Knowledge can never be false. Therefore, the second criterion of knowledge is truth. We will consider the criteria on the basis of which we determine whether a particular proposition is true or false in the next section.

Note the difference between the way in which the term 'Knowledge' is used in the Indian and the Western tradition. We use the word 'Dnyana' in Marathi, as a substitute for the word 'Knowledge' in English. Dnyana can be either true or false according to the Indian tradition. As per the Western tradition, a belief can be true or false, but knowledge has to be true. The term 'false knowledge' is contradictory. The western concept of knowledge is similar to the Indian concept of 'Prama'. Prama has to be true. There is nothing like 'false prama' (Asatya prama).

Justifiability, the third criterion of knowledge indicates that in order to accept that a person knows something, it is not enough that the person believes in it and that the belief is true. It is essential to justify that belief. It should be possible to provide evidence for the truth of the belief. Suppose, we ask the person who believes that there are rings around Saturn, how does he know it and that person says that he has seen it in a dream, then we are definitely not going to say that he has knowledge. A knowledge claim is unacceptable, if a true belief cannot be justified properly. A justification is proper if it follows an objective method. If one's reason for considering one's belief to be true is one's dream, this reason is subjective or personal. This is not an objective justification. A justification is objective when it provides evidences which can

be examined by anyone.

When we are considering the issue of the justification of knowledge, it is not sufficient to merely observe the relation between a fact and a statement expressing knowledge but it is also necessary to take into account the interrelation among the statements expressing knowledge. For a system of knowledge both the truth and validity are important. If a statement in a system of knowledge is inconsistent with the other statements in the same system then the construction of a system of knowledge would become difficult. In logic, therefore, the process of thinking is presented in a form of argument. Premises and conclusion, are the two parts of an argument.

In a sense, the discussion about objective justification is a discussion of the sources of knowledge. It has to take into account what is the source or means through which one comes to know something and whether that source is appropriate or not. Before taking up the discussion of the sources of knowledge in the Western tradition, let us discuss the three theories of truth that offer criteria for truth.



Let's do!

Considering the criteria of knowledge, prepare a concept-map of the criteria with examples in groups. Organize an exhibition of these in the class.

Theories of Truth

You must have noted that the concept of truth is central in the definition of knowledge that we have seen above. Although, knowledge is expressed through propositions, every proposition does not express knowledge. A proposition is an assertive sentence. If the assertion is correct, then, the proposition is true and only true propositions can express knowledge. Since, truth is a pre-condition of knowledge, the question 'What is truth?' is very important for epistemology. Three different

theories propose three different criteria in order to answer this question.

The Correspondence Theory of Truth

According to this theory, a proposition is true, when there is a correspondence between the proposition and the state of affairs it describes. The proposition 'Gangtok is the capital of Sikkim' describes the actuality correctly, so this proposition is true. The truth of a proposition is related to the situation it describes. The proposition is false if it does not describe the situation as it actually is. The proposition 'Venus is a star' is false according to this criterion, as Venus is actually a planet.

Knowingly or unknowingly, we use this criterion in our daily life many a times. Someone comes and tells us that 'there is a notice on the notice board that tomorrow is a holiday for the college'. Since, you have a suspicion, you go and check the notice board and find out that there is no such notice put up. You get angry at the friend for lying. In the fields of science also the criterion of correspondence is very important. Science uses the methods of observation and experimentation precisely in order to know whether the proposition describes the reality accurately or not.



Let's discover!

Find out the examples of the correspondence criterion of truth from daily life.

This criterion is quite close to the ordinary understanding of when should a proposition be accepted as true. However, due to certain lacuna in the theory, some objections are raised against this theory.

It is not every time possible to check the relation between the proposition and the state of affairs. The propositions about the past or the future cannot be checked in this way, as what they describe does not exist in the present. We cannot tell today, whether a proposition such as 'After hundred years there will be an

ice age on the earth' corresponds to the state of affairs it describes. Similarly, it is not possible to say whether general propositions are true or false. The proposition 'All men are mortal' is applicable to all humans in past, present and future. We cannot examine its truth using this criterion. The laws in science are general statements which are true. But, their truth cannot be established with this criterion. The propositions in logic and mathematics are said to be formal. They do not describe the empirical world, but express logical or mathematical relations. Obviously, the criterion of correspondence is not applicable to them.

Coherence theory of truth

According to correspondence theory of truth, the truth of a proposition depends on its relation with reality. In contrast, the coherence theory of truth propounds that the truth of a proposition is dependent on the relation it has with other propositions. The system of knowledge is constructed by putting together many true propositions. The knowledge of any particular subject is not just an aggregate or a group of true propositions. Knowledge is a system of those propositions. All these propositions are consistently related to each-other. A proposition, the truth value of which is to be tested, is said to be true if it is consistent with other accepted truths in that particular field of knowledge. If there is a proposition which says that if a number 'X' is multiplied by zero, the number you get is 'X', then this proposition is false. This is so because, it is not consistent with the accepted truth in mathematics that if you multiply any number by zero, the resulting number is always zero. If someone tells us that the birth year of my mother is 1995 and that of my father is 1993 and I am born in 1990, then, we will obviously conclude that the last statement is false. It is not consistent with the earlier two statements (which we assume to be true), as no one is born before the birth of his or her parents. These examples bring

it to our notice that consistency or coherence is a significant criterion of truth.

Some problems arise with respect to this criterion too. Even if a system of mutually coherent propositions is created, how can we be assured that it is true? Have you read stories of Harry Potter or seen movies based on them? Fictitious stories like these, whether they are fairy tales or science fictions, are internally coherent, yet not true. Why is this so? Because, these stories do not fit to reality or actuality. In empirical sciences alongwith consistency, correspondence to reality is also important. Without such correspondence, the propositions that claim to describe reality can never be true.

Let's watch!



Watch movies based on completely consistent but untrue fantasy stories and discuss them with reference to the correspondence and the coherence theory of truth.

Pragmatic theory of truth

This theory of truth is quite different from the other two. According to this theory, a proposition is true, when an action based on it is successful, when it attains its desired effect. That means the truth of a proposition is not dependent on the relation it has to reality or to other propositions. It is dependent on the consequences of the act based on the proposition. If, the action brings forth a useful or beneficial result then the original proposition is true. But, if the action based on the proposition is unsuccessful then the proposition is false. On observing a bottle full of a colourless liquid if someone says, 'This is water', one way of determining whether this statement is true or false is to drink that liquid. If it quenches thirst, only then the proposition is true, not otherwise. Knowledge is used in the actual process of living. Pragmatism gives importance to this usefulness of knowledge. The experimental method of science is also

based on this perspective that if a proposition is true, it must be possible to perform the action based on it successfully. For example, in order to assess the truth of a statement that this liquid is an acid, a litmus paper is put into it. If the expected effect of the liquid changing its colour is obtained, then, the proposition is judged to be true.

The main problem that arises about this theory is that even if a belief can lead to an action giving rise to the expected result, the success of an action does not assure the truth of the proposition. When a group of students goes for mountaineering, a novice gets tired and starts saying, 'I cannot walk any further and I will wait here'. If someone tells him that it is dangerous to wait on this spot as the wild animals come here frequently, then, that student walks till the destination out of fear. However, the proposition 'wild animals come here frequently' cannot be judged to be true on the basis of the effects of the action based on that proposition. It can be a lie that is expected to motivate the student to keep walking. Of course, such a trick may not be successful every time. So, when this proposition results into expected consequence, it will have to be judged as true and when it fails to obtain the desired consequence it will have to be judged as false. That means, if, we accept the pragmatic theory, truth cannot be objective, it will be relative to the person or the situation.



Let's do!

Present in the class the events in which propositions cannot be proved to be true in spite of getting the desired effects, in the form of a drama.

It is clear from the consideration of the theories of truth that although each theory brings to light one important aspect of truth, none of them is perfect and flawless. That is why none of the theories offer a complete understanding of truth. In reality, different systems of knowledge that exist in different fields, correspond with reality, the propositions that they consist of are

consistent with each-other and they give rise to successful actions too. That is why rather than focusing on any one aspect, one must reflect over truth in a holistic manner.

Sources of knowledge

Having understood the concept of knowledge and theories of truth in the Western tradition; let us get acquainted with the sources or means of knowledge discussed in this tradition. As we have noted earlier, epistemology was truly established in Europe after renaissance. This was the period of a stunning growth and development of science. Science had established new standards of a knowledge of the empirical world. Prior to this period, no theory, opinion or viewpoint was unanimously agreed upon in the field of philosophy. The truths discovered by science were however universal, true for all times and objective. There was no room for relativity in them. The philosophers, while acknowledging this new type of knowledge, undertook a deep study of the process of knowledge and its means.

Reason, sense perception, memory, intuition, testimony all can be considered as sources of knowledge, as we have observed last year. In the Western tradition, however, reason and sense perception have a central place in the period of modern philosophy. In fact the two main trends of modern philosophy are known as rationalism and empiricism. These two trends are generally considered as being opposite to each-other. There are fundamental differences between them with respect to the question whether the basic source of knowledge is reason or sense-perception. What is the exact place/ precise role of reason and sense-perception in the process of knowledge? Which one of them is primary? What is the nature of the knowledge that emerges from them? These types of questions were discussed during this period. All this discussion took place on the background of the progress of science as well as that of scepticism which was popular at that time. The philosophers in this period were trying to refute scepticism. They wanted to establish

the possibility of objective knowledge by way of analyzing the process of knowledge. A critical analysis of the source of knowledge that can produce objective knowledge was therefore important. In this context, one of the major points of difference between rationalism and empiricism was whether all knowledge can be obtained through sense-experience or whether reason can attain knowledge without being associated with experience.

Let us understand this point with reference to a particular classification of knowledge. The classification was used primarily in this very period. Knowledge that can be gained prior to or before any experience, is called “a priori” knowledge. Knowledge that is attained after experience or on the basis of experience is called “a posteriori” knowledge or empirical knowledge. According to rationalism, knowledge primarily emerges from reason. Knowledge begins with reason. Reason has the capacity to know certain truths prior to or without sense-experience. Due to this belief rationalists accept the possibility of a priori knowledge. Empiricists however completely deny such a possibility since according to them all knowledge of the empirical world is based on sense-experience. Reason cannot know anything independent of sense-experience. For them knowledge is a posteriori or empirical.

Before getting better acquainted with these two trends, let us note that the word ‘experience’ in this discussion denotes sense-experience. Experiences can be of various kinds. But the type of experience that is discussed as a source of knowledge is the experience that we get through sense-organs.



Let's talk!

Discuss in the class the instances which we call experience, but which are not sense-experience.

Another point that has to be kept in the mind is that the difference of opinion between rationalism and empiricism is regarding the

primacy of the source of knowledge. Both these trends accept that reason and experience both have a significant place in the process of knowledge. Rationalists think that knowledge begins with reason and experience starts functioning after that, while the empiricists propound that knowledge emerges through experience and then reason processes it.

Rationalism

Rene Descartes, Benedict Spinoza and Goftfried Wihelm Leibniz are known as the rationalists. While being introduced to Descartes’ method of doubt last year, we have noted that Descartes wanted to prove that scepticism is completely wrong. He tried to discover an indubitable truth for this purpose. Descartes himself was a scholar not only of Philosophy but also of mathematics and science. The method of mathematics had influenced him a lot. The truths in mathematics are objective and universal. These truths do not change with respect to place, time, culture or individual. Rationalists considered mathematics to be an ideal kind of knowledge. They believed that if the method of mathematics is used in other branches of knowledge, it would be possible to attain the same kind of knowledge in these branches also.

One of the peculiarities of mathematical truths is that they are not derived from experience. They are not based on experience. Their truth cannot be proved on the basis of experience. The source of mathematical knowledge is reason and it can be justified only on the basis of reason. In contrast, the knowledge gained through experience is often relative to time, situation and person. In the previous year, we have seen many examples of this. Empirical knowledge cannot be certain and universal due to this relativity. That is why, as a source of certain, universal and objective knowledge the rationalists attributed greater importance to reason. Let us understand the view of the rationalists regarding the precise role of reason in the process of knowledge with reference to

Descartes' views on the same.

Descartes was of the opinion that there are some inborn, ideas in the mind of all humans. These ideas are called 'innate ideas'. This means that these ideas are not obtained from sense-experience. Therefore their truth is not dependent on experience. They give us knowledge that is certain. The three major examples that Descartes gives of such ideas are those of one's own existence, the existence of God and the existence of matter. We have seen how Descartes proves the existence of the self by using the method of doubt. We understand the truth of the statement 'I think, therefore I am' in a clear and unambiguous manner. Clarity and distinctness are the characteristics of true statements. The proposition, 'All sides of the square have equal length'; makes the concept of a square very clear and at the same time makes us realize that a rectangle cannot be called a square. That is, it clearly explains the distinctness or the difference of a square from a rectangle.

Let's discover!

Find out the examples of concepts used in day to day life, which would help us to identify and comprehend the original and at the same time will point out its difference from other concept, e.g. when we understand the concept of the colour red, we also comprehend that red colour is neither pink nor blue.

The method that Descartes proposes for attaining such truths is similar to the geometrical method. Just as theorems are proved on the basis of the axioms in geometry, every proposition must be proved to be indubitable and certain in other fields of knowledge too. However, for this purpose, one must not begin with axioms, since the axioms are assumed to be true. It is necessary to begin with noncontroversial, indubitable truths themselves. Such truths are self-evident. They do not require an external justification.

Let's Talk!

Find out in group discussion the examples of propositions that are indubitably true like the proposition "I think therefore I am" and discuss them in the class.

'I think, therefore I am' is such a self-evident truth. We know this and other such truths through intuition. Descartes believes that a system of knowledge consists of truths known by way of intuition and the ones that can be demonstrated on the basis of such truths. Descartes does not wish to indicate any mystical or spiritual capacity or experience by the term 'intuition'. For him intuition is a sort of direct revelation or knowledge that reason has. Knowledge is produced on the basis of such intellectual intuition and deductive proof. Sense-experience is always of a particular object, characteristic, relation or event. But, it is reason that provides general or universal principles necessary for making sense of it. Descartes believed that reason starts functioning before experience of any kind, on the basis of the innate ideas and thus, we acquire knowledge in an a priori manner.

Descartes' views were supported and further substantiated by Spinoza and Leibniz. Spinoza argued that in principle, all knowledge is attained through reason. He of course did acknowledge the limits of human reason. But he was of the opinion that if these limits would not have been there, everything could have been known through reason alone. Leibniz put forward the view that it's not only the ideas of the existence of the self or God that are innate, but all mathematical or logical principals are also innate to the human mind. He believed that if this would not have been the case, then it would have been impossible to think in a logical manner. He thought that in a sense all knowledge is innate.

In this entire tradition of rationalism, a

subordinate place has been given to experience.



Let's think!

Do you find any problem with Leibniz's view, 'All knowledge is in a sense innate?' Discuss in the class.

Empiricism

John Locke, Bishop Berkeley and David Hume are the three philosophers who advocated empiricism. Empiricists deny the possibility of a priori knowledge, as they firmly believe that knowledge cannot be produced without experience. Knowledge is produced from the data or information that is provided by the sense-organs, afterwards reason processes it. Without experience, there is nothing available for reason to process, that is why reason alone cannot give us knowledge of the world. They are of the opinion that sense-organs connect our consciousness to the external world and unless such a connection is established, it is not possible to know the world.

Locke rejected Descartes' notion of innate ideas completely. In his opinion there are no ideas that are present in the minds of all human beings at the time of birth. For example, the idea of God does not seem to be inherent in the minds of the children. They learn it in the process of socialization. Atheists deny the existence of God. Moreover, those who believe in the existence of God, differ from each-other about his nature.

Locke argues that at the time of birth, prior to any experience mind is a 'tabula rasa', that means a clean slate. It is that kind of slate on which no letters/alphabets have left their marks. It is only through experience that alphabets start appearing on it. This means that all ideas found in the mind originate in experience. Ideas about the surrounding world are created through the sensations that we receive from the five sense-organs, whereas the ideas about the inner world are created through the experiences of the mind. Sense perception and introspection are the fundamental sources

of knowledge. At the beginning of the process of knowledge, mind is inactive or passive. It only receives the ideas from these sources. Once, the ideas are received, the mind becomes active and starts processing them. It understands the inter-relation among the ideas. The external and the internal sensations as if provide the raw material needed for the production of knowledge. Knowledge is produced after reason processes them. Locke's view that the knowledge attained through experience must be justified on the basis of experience itself, is consistent with the method of science today.

Another very significant point regarding Locke's epistemology is his opinion that we can know the qualities, relations and actions of objects, but we can never have a direct knowledge of the substance underlying all of these. If, we analyze the experience of the pen in front of us, we realize that the actual experience is of the colour, shape, texture etc. of the pen. We do not experience anything called 'pen' beyond all these. Of course, we do believe that all these are the characteristics of the pen, but there is no empirical ground for this belief. We believe it on the basis of reasoning.

Locke divides the qualities of the object into primary qualities and secondary qualities. Since, the existence of colour, shape, smell, taste, texture and sound is dependent on their being experienced, Locke calls them secondary qualities. The knowledge of these qualities also changes from person to person. As against this, the qualities such as size, solidity and mass are in the object. Therefore, he calls them primary qualities. These primary qualities can be known in an objective manner, since their existence does not depend upon their being experienced. However, the primary qualities can be known through the secondary qualities only. This means that whatever knowledge of the world we have, we can have a direct experience of secondary qualities only.



Let's do!

Prepare a concept-map based on the characteristics of an object. Consider different objects as examples.

The ideas produced from this experience alone are the objects of our direct experience. We can never directly know the substance which is supposed to be beyond all the qualities, as we do not directly experience it any time. In spite of this, Locke accepts the existence of the substance.

The second empiricist philosopher Berkeley goes a step ahead of Locke and states that to accept the existence of anything that cannot be experienced is not consistent with the epistemological position of empiricism. Berkeley argues that since the knowledge of the primary qualities is also through the secondary ones, the knowledge of primary qualities is also subjective. Only the ideas that are experienced and the mind that experiences them are real. There is no epistemological support to accept the existence of what cannot be experienced. Berkeley therefore rejects the existence of the material substance. In his opinion, the objects that we experience are nothing but a collection or group of ideas. A material substance which is supposed to be the basis of all the characteristics that we experience does not exist.

We have acquainted ourselves with some of the ideas of the third empiricist David Hume in some of the earlier lessons. Now, let us understand his epistemological point of view which is the foundation of those ideas. Like Locke and Berkeley, Hume also argues that all ideas are generated through experience. He classifies our experience into impressions and ideas. Through sense-perception different impressions are created in our mind. The mind generates ideas on the basis of these impressions. However, mind does not use only experience for generating ideas. Many a times, it is also influenced by the power of imagination. Using this power, mind combines two or more ideas which are never actually experienced together

and creates a new idea. An excellent example of this is the idea of a 'golden mountain'. We do experience gold and mountain, but none of us has ever seen a golden mountain. Yet, the mind can imagine a golden mountain. Through such examples, Hume explains that there need not always be something corresponding to or denoted by the ideas in our mind. That is why, it is essential to examine the ideas in the mind in a rigorous manner.

Hume has classified objects of knowledge into two kinds – Relations of ideas and Matters of fact. The first type consists of the ideas created by reason itself. Their truth is not based on experience but is justified by reason. This kind of knowledge is necessary, universal and certain. Its truth is not dependent on any external conditions and is accepted by everyone at all times. Mathematics and Logic are the examples of this kind of knowledge. The second type of knowledge is about the facts in the external world. Experience is the fundamental source of this knowledge. The nature of experience changes with relation to place, time and person. Therefore this knowledge is not certain. Its truth is not necessary, but only probable. Scientific knowledge is of this type. Scientific truths are probable not necessary.

The idea of causation and the idea of self, fall under the category of matters of fact. It has to be examined whether all the ideas in this category originate from experience in order to assess the truth and justifiability of this kind of knowledge. Hume is of the opinion that if those ideas do not emerge from experience, they should not be given any place in the system of knowledge. Hume firmly asserts that if there are no corresponding impressions in the mind for certain ideas, then, such ideas are epistemologically worthless and must be discarded. You should understand Hume's critical analysis of the idea of causation and that of self, on this background. Hume goes one step ahead of Berkeley and rejects reality not only of the material substance, but also of the spiritual substance i.e. the soul. He also denied that there

is a necessary relation between cause and effect. Hume is called a sceptic because he has raised doubts about the possibility of the knowledge of certain and necessary truths pertaining to the external world. Of course, Hume's scepticism is called mitigated or sober since Hume accepts the mathematical and logical truths as certain; which means that he does not totally reject the possibility of certain knowledge.

The limits of rationalism and empiricism

The journey of epistemology that started with Descartes in modern philosophy, reaches a certain stage in Hume. Hume's sceptical position brings it to our notice that though this journey began with the objective of eliminating skepticism permanently, it is very difficult to reach that objective. The inter-connections between epistemology and metaphysics that we observed in the context of Indian Philosophy are seen here too. Rationalism puts forth the possibility of certain and indubitable truths but it could not successfully explain how the truths gained through reason alone can give us the knowledge corresponding with the external world. As we have seen, the examples of such truths are mathematical and logical truths. But, these truths do not tell us anything about the world. This observation in a way supports the empiricist's view-point that the knowledge of the external world has to be attained through experience. However, the development of empiricism once again led to scepticism. It was firmly established because of Hume's critical analysis of knowledge, that empirical knowledge is only probable and it cannot be necessarily true. Knowledge gained through reason is certain but there is no guarantee that it corresponds with the external world and the knowledge of the external world that is gained through experience can never be certain. Such was the predicament that was generated in epistemology.

Immanuel Kant's 'Critical philosophy' was developed through the attempt to respond to this crisis. By offering critique of rationalism and

empiricism Kant proved that knowledge cannot be produced unless reason and experience are conjoined in a proper manner. Reason provides the form or the pattern /structure of knowledge, while experience fills it up with content. Knowledge is created through the inter-connected constitution of form and content. It is true that mere sense-perception cannot generate knowledge unless it is arranged in a pattern provided by reason, but it is also equally true that reason cannot know the universe without being provided empirical content by sense-experience. This is how Kant explained the interdependence of reason and experience. Kant's analysis of the process of knowledge is quite close to the research that is going on in this connection in neurology today.

The Scientific perspective

We saw how epistemology has been discussed in philosophical tradition. It must be noted, that when philosophers were contemplating epistemological issues, they were doing it without the tools that present day science uses to investigate. Their reflections stemmed from personal experience, introspection and broader knowledge of the world. Science is the study of objective reality that is verifiable to anyone and everyone who wishes to verify. What does science tell us about how we gain knowledge?

When we look at the process of acquiring knowledge in scientific manner, we see that knowledge for individual and knowledge for society are two different things. Science is a collective effort of studying the laws of nature that govern objective reality by using tools and instruments. From the point of view of scientific knowledge, it is immaterial how a person understands it with his senses. For example, our sensory knowledge would never tell us about the behaviour of an atom. Collective knowledge and tools of experimentation helped us to overcome the limitations of individual capacity to gain knowledge.

How do biology and neuroscience study

the process of knowledge acquisition? They study how sensations are received and what follows in the body with the help of experiments and instruments. It is also important to note that since life has emerged from the non-living world, the laws of physics which govern the material world are also applicable to the living world. How is knowledge acquisition explained at the level of physical sciences? The answer is: It is through sense-organs that we receive sensations of different particles. We see because of photons. (photon is a name of a particle) Hearing, smell, taste, and touch; all the senses are dependent on particles. Since particles are always dispersing from each-other, theoretically they do not reach us without any loss or distortion. Thus any claim of exact knowledge of reality is

unscientific.

The same principle also applies to accuracy in measurements with the help of tools and instruments. Accurate measuring requires calibration and standardization. Since we do not know anything faster than the speed of light, we have to accept the limits of the tools of measurement of its speed.

Scientifically, for statement or system of thoughts to be accepted as knowledge science operates within a framework of probability. For example, when we say gravity is a law we are actually saying that it is highly probable that such a force exists. It is only when we accept this highly probable statement as a reality that it becomes possible to conduct objective experiments with it or to develop a technological application based on it.

Prama - प्रमा

Dnyana - ज्ञान

Pramata - प्रमाता

Pramana - प्रमाण

Prameya - प्रमेय

Dnyata - ज्ञाता

Anubhava - अनुभव

Smruti - स्मृती

Yathartha - यथार्थ

Ayathartha - अयथार्थ

Pratyaksha - प्रत्यक्ष

Anumana - अनुमान

Upmana - उपमान

Shabda - शब्द

Laukika - लौकिक

Alaukika - अलौकिक

Samanyalakshana - सामान्यलक्षण

Dnyanalakshana - ज्ञानलक्षण

Yogajlakshana - योगजलक्षण

Pratyasatti - प्रत्यासत्ती

Yogi - योगी

Paksha - पक्ष

Hetu - हेतू

Sadhya - साध्य

Pakshadharmata - पक्षधर्मता

Vyapti - व्याप्ती

Svarthanumana - स्वार्थानुमान

Pararthanumana - परार्थानुमान

Pratidnya - प्रतिज्ञा

Udaharan - उदाहरण

Upanaya - उपनय

Nigamana - निगमन

Upamana - उपमान

Upamiti - उपमिती

Apta - आप्त

Akanksha - आकांक्षा

Yogyata - योग्यता

Sannidhi - संनिधी

Tatparya - तात्पर्य

Drushtartha - दृष्टार्थ

Adrushtartha - अदृष्टार्थ

Vaidika - वैदिक

Apaurusheya - अपौरुषेय

Arthapatti - अर्थापत्ती

Anupalabdhi - अनुपलब्धी

EXERCISES

Q.1 Fill in the blanks choosing the correct option from the bracket.

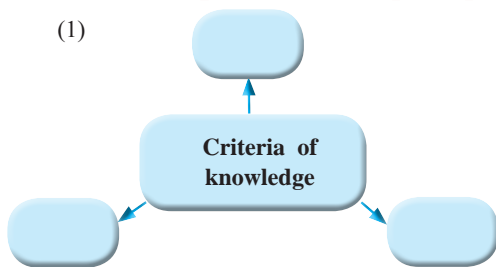
- (1) In Indian Philosophy, knowledge that qualifies the test of truth is called
(Dharana, Prama, Smruti)
- (2) According to Nyaya Darshan human is the knower.
(Atma, Jiva, Experience)
- (3) According to relativism knowledge is
(real, subjective, illusionary)
- (4) Descartes wanted to prove that is wrong.
(Rationalism, Pragmatism, Scepticism)

Q.2 Give philosophical terms for the following.

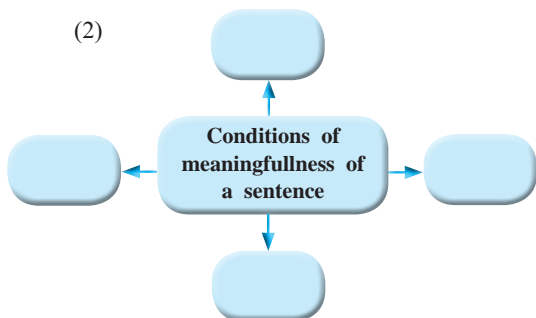
- (1) That which is known.
- (2) A person who is knowledgable and trust-worthy.
- (3) Determinate, non-erronous and true knowledge attained through the contact between sense-organs and the objects.
- (4) Inference/Argument used in order to prove a conclusion to someone other than oneself.

Q.3 Complete the concept-map/flow-chart.

(1)



(2)



Q.4 Explain the following statements with examples.

- (1) Clarity and distinctness are the attributes of true proposition.
- (2) Without sense-experience knowledge is not possible.
- (3) Belief is not knowledge.

Q.5 State with reason whether the following statements are true or false.

- (1) Only human beings can be called as Pramata.
- (2) An inference which is used as argument for others is called Swarthanumana.
- (3) According to correspondence theory of truth all the propositions are consistent with one-another.
- (4) According to correspondence theory of truth all statements are coherent with each-other.
- (5) Berkeley denies the existence of matter.

Q.6 Distinguish between the following.

- (1) Swarthanumana - Pararthanumana.
- (2) Rationalism - Empiricism.
- (3) Primary and secondary qualities.

Q.7 Discuss in detail 'Inference' in Nyaya Darshan.

Q.8 State the pragmatic theory of truth and explain its drawbacks with examples.

Q.11 Write a dialogue on the following.

Write a dialogue on the following-logical consistency in fictional works such as a movie or a fairy tale viz a vis objective reality

Activity

Collect additional information about 'how do we learn' and present a poster exhibition offering information about theories of learning.

☆☆☆

5. What to do and why?

- **Introduction**
- **The nature of Ethics**
- **Ethical thought in Indian tradition**
- **Ethical thought in Western tradition**
- **The Scientific perspective**

Introduction

From morning since we wake-up till night when we go to sleep, all the time we keep doing something or the other. Only in sleep we are completely inactive for some time, otherwise we are constantly doing something. But what are we exactly doing? Why are we doing it? How are we doing it? We rarely think of this consciously. Some of our actions are just done habitually; some are as told by others, while some are the results of our decisions. Sometimes our natural instincts are responsible for our behaviour, whereas sometimes our emotions are responsible. In the previous year, we have seen the difference between involuntary action and voluntary action. Involuntary actions are mechanical, we do not have complete control over them. However, voluntary actions are prompted by free will and they are based on values. That is why, they can be good or bad, right or wrong. Most of the times we try to perform actions following the rules taught to us about what is morally right and what is wrong. We have already studied the need for moral laws.

If, you take a closer look at your own behaviour, you will notice that at times your behaviour is determined by the teachings you have received or by the conditioning that has happened over the time. For instance, while travelling in a bus if you see an old man standing by, you would quickly get up and give him your seat. But, occasionally, when you have to go out for a movie with a friend

you literally lie that you are going for study. At that point at least you do not feel that you have done anything seriously wrong. Sometimes, we wonder exactly what would be the right thing to do or whether what our friend is doing is right or wrong.



When during the exam your closest friend asks you to show an answer of some question, you face a dilemma about what has greater value; the friendship or the rules of the exam? When your friend lies to her ill mother, that she has passed the exams even though she has failed we wonder whether it is right or wrong to do so. How should one exactly think in such situations? Ethics provides us with a guidance regarding the basis on which right decisions can be made.

The nature of Ethics

The function of ethics is to explain how to evaluate whether an action is morally good or bad, right or wrong. Ethics examines the criteria for evaluating our actions or the actions of others. There are mainly two criteria that are considered in this regard. One is the purpose/intention with which an action is performed and the other is the consequence of the action. Every consciously performed action is performed with some or the other objective/purpose and every action

produces some consequences. These intentions and consequences are not necessarily interconnected. In case, if, they are related, then one may say that the desired consequences are achieved. But, sometimes there are consequences that are unforeseen and unexpected to the doer/agent.

For example, when some people witness an accident they run to help the accident victims, but if they do not know what is exactly to be done in such a situation, they might unintentionally harm the injured through their actions. If, we evaluate this example on the basis of intentions then the action taken would be considered right but if we consider its consequences then it would be wrong!



Let's talk!

Share and discuss in class any similar incident as mentioned above that you have experienced or that you know.



Many times we answer the question, 'What should be done?' with the help of moral laws. These laws are derived from years of experience and from the reflections based on them. But, sometimes a situation arises where it is right to make exceptions

to the law, while sometimes we find that two laws have recommend two opposite actions. The law states that you should feed the hungry, but in certain cases of treatment of a specific disease not feeding him/her is beneficial for the patient even if he/she is hungry during the treatment. Due to this, one has to make an exception to the law. The laws state that one should never lie and one

must save a life whenever it is possible to do so. But, in an exceptional case, the question arises as what to do if one cannot save one's life without lying.



Let's do!

Write dialogues on such situations where two moral laws suggest contrary actions and present them in the class.

The laws that are made for a particular society, in a particular period, for the benefit of the society have a historical context. In every period, following these laws in specific circumstances is beneficial for an individual and the society. But, at times even if the circumstances change drastically, the laws remain unchanged. At that time they do not prove to be beneficial. The traditional practices and customs, the Do's and Don'ts of religion (the rules regarding what should be done and what should not be done), the laws made by the government, all these are mostly made for the betterment of the society. From time to time they need to be critically discussed from an ethical perspective. Accepting these laws blindly may be detrimental to the society. The study of ethics provides guidance about how to examine actions, rules, values and what factors are to be considered in this regard and why. For a good life, critical contemplation related to ethics is as important as the moral conduct. Such contemplation and discussion is the peculiarity of philosophy. The study of ethics is very important for all of us, since, we all desire a good life. For this purpose, let us now get introduced to the ethical concepts and doctrines that have been presented in Indian and Western philosophy.

Ethical thought in Indian Tradition

As you all know the Rig-Veda is considered to be the first treatise/text in the known traditions. The concept of Rta is one of the most fundamental concepts in Indian

ethical thought. We find its mention in Rigveda. Derived from the root 'ꣳ' this word is formed from a verb and is an indicator of motion or movement and order. The Ruta concept suggests that there is a motion in this universe and in this motion there is a sort of order or sequence. The cycle of seasons found in India i.e. summer-monsoon-winter or the cycle of day and night are examples of Ruta. However, the concept of Ruta is not merely related to the order of nature. Alongwith this, the concept of Ruta also suggests existence of a moral order. According to this notion, there is an implicit order in human behaviour and its consequences. That is why good deeds result in good consequences, while bad deeds lead to bad consequences. Man must perform actions keeping this in mind. Although, in this context there is no clear discussion regarding what is good or bad, still it is clear that the intention is to encourage man to perform good actions. The culmination of

this concept of Ruta can be seen in Karmasiddhanta or the theory of Karma.



Let's do!

Write a note on, the people that you believe you are indebted to and the ways in which you will repay them.

Law of Karma (Karmasiddhanta)

You know that the word 'karma' literally means action. We have also studied last year that ethics is concerned with voluntary actions. According to the law of karma, such intentional, that is voluntary actions inevitably lead to some consequences. These consequences are called 'fruits of actions' (karmaphala). The karma theory states that every person someday has to enjoy/suffer the fruits i.e. the consequences of his/her actions. In a way, the relationship between karma and its fruit is an extension of the cause-effect relationship found in nature, to the realm of human

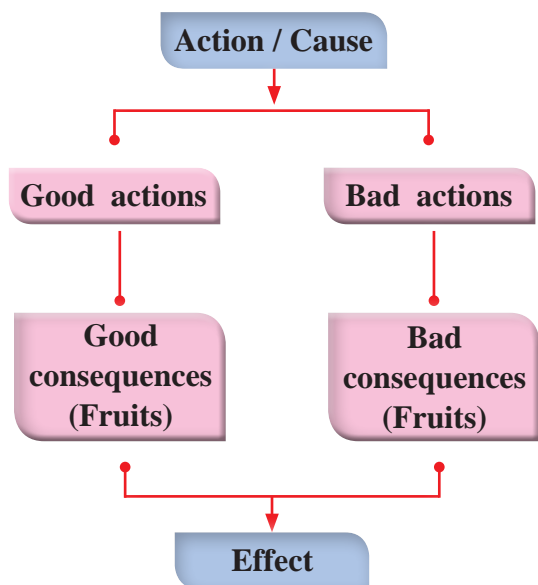
Concept of Runa : Runa is a valuable concept of Indian ethics. The term 'Runa' literally means 'debt' or 'loan'. Indian tradition believes that our life and many things that we enjoy in our lives are given to us by someone, therefore we owe them a debt. It is stated that one should become free from debts by repaying them in a proper way. The thought of expressing our gratitude towards those who have benefited us is at the root of the idea of becoming debt free.

Indian tradition mentions three main types of Runas, these are – Deva Runa (debt towards deities/ divine debt), Rishi Runa (debt towards sages/ teachers), Pitru Runa (debt towards ancestors). The natural forces/are considered as Gods-Goddesses. The tradition believes that we get life and everything that is necessary for survival from these forces. Our parents and our ancestors are responsible for our birth. We get knowledge from our teachers. That is why we should be grateful to all of them. Performing sacrifices and other rituals as per

the given instructions is a way to become free from the Divine debt. By attaining knowledge in a proper way one becomes free from the debt towards sages. By begetting children the individual becomes free from the debt of ancestors. Apart from these, Indian tradition also mentions Manushya Runa that is debt towards other human beings. The society contributes a lot in making us whatever we are or in whatever we achieve. Charity and co-operation are the suggested ways to repay this debt.

The concept of Runa is important because the feeling of gratitude makes the relationship amongst people more and more friendly and meaningful. Such relations are beneficial for both, the individual as well as the society. It is possible to extend the range of our gratitude beyond the traditionally stated debt. Today, if we believe in the debt towards nature and show gratitude towards it, then would it not help in reducing the issues pertaining to human-nature relationships?

conduct. Karma is the cause whereas the fruit is the effect. The relationship between cause and effect is inevitable. The law of karma says that just as the cause inevitably produces an effect, similarly, the fruit will be produced from the karma. It further states that the doer/agent gets the fruits of the action whether he/she desires it or not. The proverb ‘Reap as you sow’ is nothing but practical version of the karma theory. The common man too expresses the understanding that he/she has of the karma theory while stating, ‘you have to bear the fruits of your actions’. Although, this awareness is embedded in the minds of all those who have grown-up in the Indian tradition, everyone does not necessarily have information regarding the types of karma and their significance and regarding the types of karma essential for a good life. Let’s know about them.



Classification of Karmas

The most basic types of karma is the one between voluntary action and involuntary action. You have studied the meaning of these terms in the previous year.

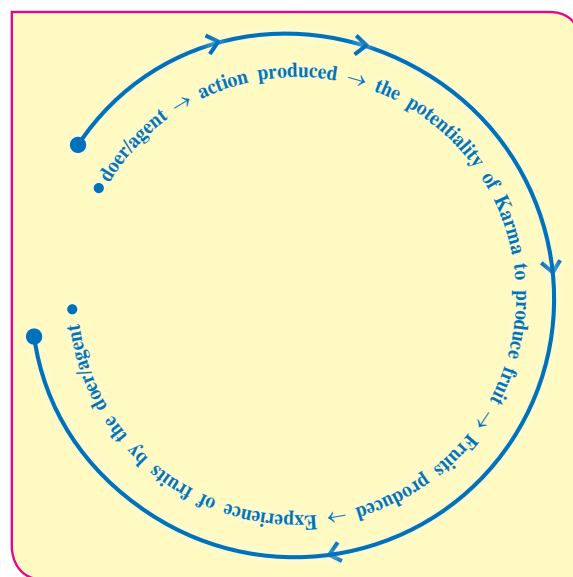


Let's do!

Take examples of various actions performed and classify them in the above mentioned types.

According to Indian intellectual tradition, the two main motivations behind voluntary actions are ‘Raag’ and ‘Dvesha’. It should be noted that the word ‘Raaga’ here does not mean anger or rage. Raaga here means attraction, temptation, desire. Dvesha means aversion/dislike. All of our actions are based on the basic motivations of ‘wanting’ something and ‘not wanting’ something.

The relationship between the action performed by the doer and the fruits it produces can be explained in detail. Proponents of karma theory believe that this relationship works in two ways. It is from the present karma to the fruit that follows, as well as from the present fruit to the previous karma. As per the first relation, good or bad consequences of whichever actions one performs are to be enjoyed/ suffered by the doer. As per the second relation, the pleasure and sorrow that we experience in the present must be the results of the past good or bad deeds.



In Indian tradition, karma theory has always been associated with the concept of re-birth. Let us try to understand the reason behind it. According to the law of karma, the fruits of good actions are good and bad actions are bad. If a person enjoys a lot of happiness and satisfaction then it is believed that his/her meritorious actions (punyakarma)

have born these fruits. Similarly, when a person has to face pain and suffering it is believed that it must be due to the sins or bad actions committed by the person. In reality it is often seen that those who perform evil, wrong or immoral acts enjoy pleasures, while those who perform good, righteous or moral actions suffer. According to the law of karma this would be impossible. The notion of re-birth offers explanation for this. According to this belief, if the cause of happiness and suffering that people experience in the present is not found in their existing lives, then, they are believed to be the results of the actions performed in the previous births. At the same time, this view encourages individuals to do good deeds by assuring them that if good deeds are performed in the present, then, they will certainly bear good fruits in this life or in the next life.

In a way, we notice, that the belief that the result of good action is good and the result of bad action is bad is found everywhere. But, generally we do not find the notion of re-birth in the traditions other than the Indian tradition. So how do these traditions explain the discrepancies that we have just mentioned? The answer to this is, according to Christianity and Islam, even if the body dies, the soul does not perish. God keeps an account of all our good and bad deeds. As per this account, on the final Day of Judgment, the good souls/spirits are sent to heaven and sinful souls to hell. These traditions believe that even if there is no re-birth, the consequences of the actions have to be borne. But, the different ideas presented by them in this regard are in accordance with their cultural beliefs.

Let's find !

See if you can find examples of 'actions and suffering the consequences of the actions'.

Though we use only one word i.e. 'Indian tradition' with reference to India, it actually consists of a **rich and diverse heritage** as is proudly stated in the pledge. This tradition consists of darshanas like Charavaka that denies the existence of soul, God or re-birth. In the same way there are darshanas like Sankhya, Yoga, Nyaya, Vaisheshika and some Vedanta schools that believe in soul, God and re-birth. It includes Bauddha darshana that believes in re-birth even if it rejects the existence of soul and God and also the Jain darshana that rejects God but believes in soul and re-birth. Except the materialist philosophy of Charvaka, all other darshanas have endorsed re-birth and law of karma. All these schools of Indian philosophy also agree that the soul is bound to be born again and again in different bodies and that the highest goal of the soul is to get rid of this bondage, that is, from the cycle of re-birth. This liberation or freedom is 'Moksha' or 'Nirvana'! All these darshanas regard liberation as the 'Parampurushartha' i.e.highest goal of human life. The concept of Purushartha is important in Indian ethics, now let's understand it.

Purushartha

The word 'Purushartha' is analyzed as "purushaihi arthyate iti purushartha". The word 'artha' has several meanings. Here, it means a goal or a purpose. The term 'Purushartha' means the goal or the end that every human being (man or woman) ought to seek in order to lead a better life. In the early period, three goals were suggested viz. Dharma, Artha and Kama. This is known as the 'three-fold' ('Trivarga') theory. In the later period, Moksha was added to these three goals and this version is known as 'Chaturvarga' theory. Let's get introduced to these four purusharthas / goals of human life.

Kama

Semantically speaking, the word 'kama' refers to man's desires or wishes. In the

framework of purushartha the word kama is related to the physical pleasures. It includes sexual pleasure, other sensual pleasures as well as appreciation of art and beauty. Since, the desire for these pleasures is natural it is considered to be one of the purusharthas.

Artha

Although, the word 'artha' refers to money, wealth, possessions, the broader meaning it has is that it is the material means necessary for the fulfillment of the desires of physical pleasures. It means artha has an instrumental value. Without this means kama cannot be satisfied, therefore artha has been included in the purusharthas.

Dharma

The word 'Dharma' is very rich in meaning. Let us first understand different shades of its meaning and then we shall consider its nature as a purushartha. First of all, it should be noted that the connotation of 'Dharma' is not as limited/narrow as it seems to be when applied to the religions like Hinduism, Islam, Christianity, Judaism, Sikhism, Zoroastrianism etc. Today, we often use the word 'Dharma' as an alternative to the English word 'religion'. Here, by Dharma we mean a community of people that shares similar conduct, beliefs, values, practices of worship etc. In fact, the concept of Dharma has several shades of meaning like community, customs, mores, laws, rules, morals, duties etc. Moreover, when we make statements like 'the dharma of fire is to burn' or 'the dharma of water is to flow', we are talking about the natural or essential attributes of objects.



Let's write!

Make a concept-map of the several shades of meaning of the term 'Dharma'.

The word Dharma is derived from the root 'Dhru'. 'Dhru' means to hold, to support or to hold together. According to this basic

sense, Dharma is the principle that holds the whole universe together. This meaning of Dharma is closely related to the word Ruta. Like the word Ruta, the meaning of the word Dharma too has significant ethical dimensions. Dharma is essential in order to maintain the society. The function of the above-mentioned laws, rules, norms etc. is to keep the society together, hence, in a broader sense they are included in Dharma. In order to hold the society together, each person must perform his/her duties honestly. What are these duties? What are the Do's and Don'ts for an individual? Directives in this regard are found in the Dharmashastras. Dharmashastra gives information about what rules an individual should follow in personal and social life. The text /treatises of Dharmashastras can be said to be the books of law of ancient times. In Indian tradition, morals, law, customs, beliefs, rituals have all been discussed together.

The duties that Dharma dictates are divided into Sadharan Dharma (general duties) and Vishesa Dharma (specific duties). The duties that individuals of any age, caste, gender or class are supposed to perform are called Sadharan Dharma. Satya (truth), Ahimsa (non-violence), asteya (non-stealing), patience, non aggression, temperance etc. are included in Sadharan Dharma. This Dharma is social in nature. The duties that a particular person is supposed to perform on the basis of his Varnashrama, which means the duties based on his or her social position and the particular stage of his or her life, are called Vishesa Dharma. You have studied the varna system and the ashram system in school.



Let's do!

Draw a table consisting of the four Varnas, the four Ashram and the duties associated with them.

Indian tradition seems to have given a lot of importance to varnashrama Dharma.

You must be familiar with the story from Mahabharata, of war between the Kauravas and the Pandavas. Right at the beginning of the battle, after seeing his own relatives, teachers, friends in front of him in the battlefield, Arjuna faced a moral dilemma whether it is right to kill all these people who are mine, just to establish the Pandavas' right over the kingdom. In Bhagwadgita, at this moment, Shri Krishna asks Arjuna to follow his svadharma that is the varna dharma. According to Krishna, being a Kshatriya, it was Arjuna's duty to fight.



Let's discuss!

Conduct a discussion on the topic 'The present times and varnaashrama dharma'.

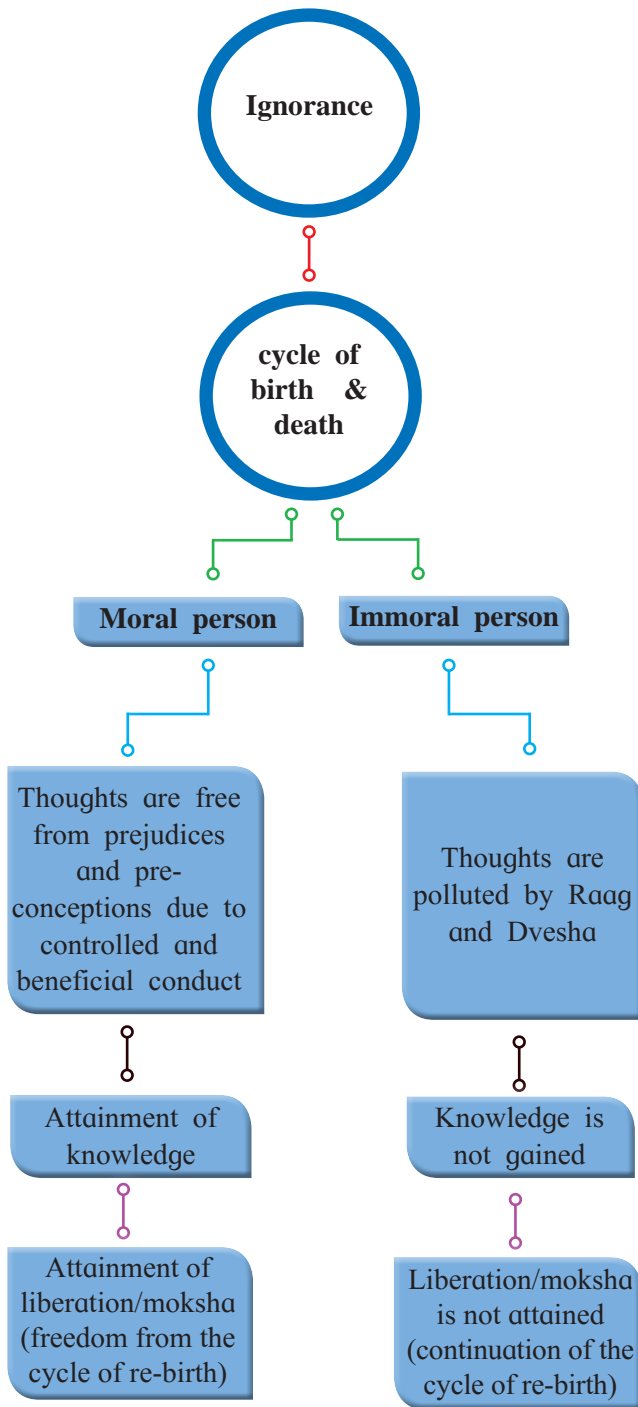
The Dharma purushartha mainly comprises of sadharana dharma and vishesha dharma. The goals of artha and kama, are to be fulfilled in the framework of Dharma. Violation of the principles, values and duties stated by Dharma in order to earn money or to enjoy pleasures is not acceptable to the tradition. The principles of Dharma, that is the principles of morality provide guidance regarding what should be the relation of man with nature and the society. There is harmony and balance in the relationship between man, nature and society if dharma is followed, whereas if the control of dharma is violated while pursuing artha and kama it causes hindrance to the well-being of the individual and the society. Performing actions in accordance to Dharma leads to material prosperity and is also essential for spiritual well-being.

Moksha

While studying the theory of karma, we have seen that all other schools of philosophy except Charvaka accept the idea of re-birth. The tradition believes that being born again

and again is to suffer again and again; hence birth is a constraint and being released from the cycle of re-birth is the supreme goal of a human being. Dharma, artha, kama are the goals to be attained in this birth, but Moksha is the highest purushartha that liberates an individual from the cycle of birth and death. From this perspective, the first three purushartha are kind of material goals, while moksha leads to spiritual well-being. This role of moksha purushartha is consistent with the metaphysical idea, according to which man's 'self' is not material but spiritual.

As we have seen in the second chapter, ignorance regarding our real nature is the main reason of getting trapped in the cycle of birth and death. Naturally, knowledge is necessary in order to attain liberation. But, moral conduct is as important as knowledge. The combination of spirituality and morality made by the tradition is noteworthy. Lust for material pleasures, unethical means used to acquire these pleasures, deception, hypocrisy, the craving for fame are not the signs of true spirituality. An unethical person cannot gain knowledge because this person's thought-process is greatly affected by the motives of raaga and dveshas i.e. likes and dislikes. With such a polluted thought process neither the nature of the universe nor the nature of self can be known. Obviously, due to the lack of knowledge, moksha too remains unattained. There is an inter-dependence between a person's knowledge and morality. To behave ethically and according to dharma is to regulate our desires, intentions, feelings, emotions and doing what is beneficial for one's own self and for others. By doing so, one liberates the intellect from the prejudices, pre-conceptions and increases its ability to gain knowledge. In the same way, as the depth of knowledge increases, the foundation of morality becomes stronger.



The most important question related to moksha purushartha is how to attain liberation. As long as the person is alive, he or she has to perform some or the other action. According to the theory of karma if the karma is performed, its fruits have to be borne. If so, then, the question arises as to how is it possible to get released from the cycle of re-birth. In this regard it is important to consider how an action is to be performed

and which action is to be performed. Ethical thought of Indian tradition has developed majorly in this context.

According to one of the classifications of karma, there are three types of karma, Sanchita, Prarabdha and Sanchiyaman or Kriyaman. All the actions that we have done in the past (not only in this life, but also in the previous lives) and are yet to bear fruits are called Sanchita karma. The actions, the fruits of which we will necessarily receive in the present are called Prarabdha. The actions that we are performing at present are Sanchiyaman or Kriyaman karmas. Once, these actions are performed, their fruits/consequences get determined. If, these actions are performed wisely, dutifully, they will bear good results. However, there is no escape from the fruits of prarabdha karma. The potentiality of prarabdha karmas to bear fruits is fully developed, so they are to be enjoyed/ suffered. Since, the potentialities of the sanchita karmas are not yet fully developed we can get rid of them. The Vedic tradition has suggested various ways of getting rid of them. According to one view, if one acquires knowledge one does not have to bear the fruits of sanchita karmas (accumulated deeds). According to the Mimamsa school of Indian philosophy, the proper way is to perform the Nitya karma (regular, daily) and Naimittika karma (to be performed occasionally) as stated in the scriptures.



Let's write!

Make a list of nitya and naimittika karmas.

Bhagavadgita has propagated the path of Nishkama Karma, the path of performing an action without the expectation of some fruit. Whatever action we perform, is performed due to some desire. You expect some outcome from it, that is, such karma

is performed with the desire of getting its fruit. Nishkama karma means action performed without any expectation of fruit. According to the teachings of Bhagavadgita such actions do not generate the fruits/ results which are binding to an individual. If we perform all our actions without expectation we get liberated from the cycle of birth and death.

Now, you may wonder why anyone would perform any action if one does not want to get any fruit or result from it. Is it possible to do karma/ perform action without expecting its fruit? To this Gita replies, such actions are possible. These are the actions that we perform out of the sense of duty and we do not expect any fruit/result from them. This is nishkama karma. If you look back at the example that we took at the beginning of the lesson, while travelling in a bus if, you give a seat to an elderly person with an intention of following your duty, then, it would be a Nishkama karma. But, if you offer the old man a seat in the bus with an expectation of being rewarded by him in return, it would be sakama karma. Then, you will have to bear its fruits. It should also be noted here that whether the fruits of sakama karma are good or bad, in both the cases they are binding and must be borne. That is why performing nishkama karma is the only right way to attain Moksha/ liberation.

Although, the theory of karma states the relation between karma and its fruit, it does not provide guidance regarding which actions should be considered good or bad. From the given explanation, by now, you must have realized that it is the function of dharma, i.e. morality to provide such guidance. Dharma tells us about our duties. Performing these actions only because they are our duties is Nishkama karma. At the same time, it is to be noted that only those actions which are moral and are considered to be desirable for the individual and the society have been

given the status of duties.

Non-Vedic Traditions

The heterodox, non- Vedic traditions like Buddhism and Jainism also believe that the cycle of re-birth is bondage and in their opinion too, liberating oneself from this bondage should be the highest goal of human life. Like the Vedic traditions, these traditions too consider knowledge and moral conduct as essential for attaining this goal. However, as we have studied earlier their understanding regarding the nature of the world and self is different from that of the Vedic tradition.

Jaina Ethics

According to Jaina metaphysics, jiva or soul has the potentiality to attain four-fold perfection, namely, infinite knowledge, infinite faith, infinite power and infinite bliss. But, because of the limitations of the body, these potentialities are not actualized/ realized. It is due to the passions and desires of jiva that the pudgala that is the material particles are attracted towards it and the jiva gets bound with the body. That is why in order to get freedom from the body, it is not only important to eliminate the particles of matter that have already accumulated, but stopping the influx of new matter into the soul is also equally important. These two processes are called Nirajara and Samvara respectively. It is true that the soul is bound with the body, but basically this bondage is created only because of desires, cravings and motivations. This bondage is an internal bondage, while the bondage of the body is an external one. In order to be freed from this bondage, one must keep faith in the teachings of the liberated beings, and gain knowledge of the world and of one own self. But, as long as this knowledge does not reflect in the conduct of an individual, it may not lead to liberation. When a person controls his thoughts, desires, feelings, speech, behaviour through moral conduct, the process of Nirjara begins and the Asrava that is the influx of pudgala

(new matter) comes to an end. In the Jaina tradition right faith, right knowledge and right conduct are known as the Triratnas (three-jewels).

Morality is indeed related to right conduct. In this the Panchavratas (five great vows) are central. Ahimsa (non-violence), Satya (truth), Asteya (abstinence from stealing), Brahmacharya (celibacy) and Aparigraha (abstinence from attachment) are the five great vows. Aparigraha means not storing more than what is required, carrying only necessary things with oneself. Ahimsa has a very important place in Jaina ethics. Any kind of harm to any being at any level of body, speech or thought is unacceptable to Jainas. According to Jainas, every jiva (living being) has the right to attain liberation and it is not moral to cause any kind of hindrance in its path of liberation.

These vows are necessary for those who are not on the path of renunciation and are house holders, ordinary lay persons, as well as for the ascetic monks and nuns. The vows of the lay person are less stringent, so they are called Anuvratas. In case of the monks and nuns the rules related to these vows are rigorous, hence they are called Mahavratas. By adhering to these vows and other moral rules, the conduct, knowledge and faith become impeccable and perfect and the fourfold perfection is attained. Jiva is liberated from the cycle of re-birth.

Let's find it!

Find examples of Anuvratas and Mahavratas.

Charvaka's views on Ethics

Charvaka's ethical position is considered to be unique. Like other schools of Indian philosophy, Charvaka's ethics too is consistent with its metaphysics and its understanding

of 'self'. Moksha cannot be the goal of life for Charvakas, who denied all the concepts like soul, re-birth, heaven, hell etc. Since they believed that 'I am my body', the attainment of pleasures of the body is the goal of human life according to them. Since with the death of body the human existence gets destroyed, Charvaka thinks that it is not wise to deny the materialistic pleasures of this life in the hope of attaining imaginary pleasure in next birth or in order to attain moksha. Similarly, they also believe that pleasure and pain are inevitable aspects of human life. Therefore, the complete cessation of suffering that Buddhists speak of is possible only after death. While struggling to gain pleasures in life one may have to face miseries, but to turn one's back to happiness simply because of this reason, is like throwing away the whole grain because it comes with the husk.

This ethical standpoint of Charvaka is described as 'Hedonism' as per the terminology of Western ethics. Hedonism believes that an action which gives you pleasure is a right action. Pleasure is the only objective of human life. Although pain cannot be completely avoided, man must try to gain as much pleasure as possible. The hedonist Charvaka states that a good life is a happy life. They believe only in two purusharthas, kama and artha. Therefore, they believe that, gaining pleasure and collecting the wealth and other means for attainment of pleasure are the only two goals of human life.

Buddhist Ethics

One of the important goals of Buddhist philosophy is cessation of the suffering in human life. The four noble truths stated by

Gautam Buddha are related to the existence of suffering and its cessation. These noble truths are : (1) Life is full of suffering. (2) There is a cause of this suffering. (3) Cessation of suffering is possible. (4) There is a path which leads to cessation of suffering. This path consists of eight components (steps) and is therefore, called the eightfold noble path (ashtangika-marga). The ethical contemplations of Buddhist philosophy are primarily woven in this eight-fold path. Here, the emphasis is on the knowledge of the noble truths, efforts to live life by constantly remembering them and moral conduct. One of the aspects of this conduct is appropriate use of language or speech. One must abstain from lying, slander, unkind words and frivolous talk. One should earn one's livelihood by honest means. It is not right to earn money through forbidden, wrong, unethical means. Our normal behaviour should be in accordance to 'Sheela'. The basic meaning of 'Sheela' is conduct, behaviour. Here the word 'satsheela' is used which means good moral conduct. Buddhist philosophy mentions the Panchasheela that is the five vows/rules of right conduct. Lying, stealing, killing or hurting, enjoying unrestricted bodily or sexual pleasure and any type of intoxication are prohibited acts. One must not perform them. In other words one must observe satya, asteya, ahimsa, brahmacharya and apramada. By doing so, the body and the senses are kept under control and the mind remains stable and calm. This discipline of the body and mind is very essential for the attainment of nirvana. In Buddhism the state in which the chain of re-birth completely ceases is called 'Nirvana'. Nirvana means cessation of all sufferings and utmost peace. In this state all the impressions (samskaras) of the previous birth are destroyed and hence the body that is a collection of five fleeting aggregates (panchaskandha) is not born again.

Arya Ashtangika Marga

(1) **Sammaditthi or Samyadrishti (Right views)** : Correct knowledge of the four noble truths.

(2) **Sammasankalpa or Samyaksankalp (Right resolve)** : Right resolve includes, giving up ill-feeling towards others, desisting from any harm to them and renouncing worldliness (attachment to world or renunciation)

(3) **Sammavacha or Samyakovak (Right speech)** : Right speech consists of abstention from lying, slander, unkind words and frivolous talk.

(4) **Sammakammanta or Samyakkarmanta (Right conduct)** : Right conduct, following Panchasheela.

(5) **Samma-Ajiva or Samyakjivika (Right livelihood)** : Choosing right means of livelihood, honesty, avoiding forbidden means of earning livelihood.

(6) **Sammavayama or Samyavyayama (Right effort)** : Constantly making right efforts, filling the mind with good and right thoughts, taking efforts to keep it away from evil thoughts, conduct and feelings.

(7) **Sammasati or Samyasmrti (Right mindfulness)** : Constantly remembering the knowledge that is learnt. Never forgetting impermanence, non-existence of the soul.

(8) **Sammasamadhi or Samyaksamadhi (Right concentration)** : By way of living the life in the right way as per the teachings, getting rid of craving, evil thoughts etc., experiencing the state of being free from suffering.

Ethical thought in Western tradition

Ethics is one of the major branches of western philosophy. What is? How do we know it? How does it affect our actions? These are the three prominent questions in

philosophy that we have discussed in the previous year. The branch of ethics deals with the third question. We have already taken a brief account of the virtue ethics of Socrates and Aristotle. The medieval ethics was mainly theocentric and influenced by Christian ethics. In this chapter we shall get acquainted with the two major theories of modern philosophy.

As we have seen earlier, the two main criteria for evaluating an action are the intention behind the action and the consequences of the action. Accordingly, two major theories have been put forth in western ethics, namely, deontology and teleology/consequentialism. Deontology states that an action is morally correct, when it is performed only with an intention of performing a duty. On the contrary, according to consequentialism, that action which produces good results is an ethically good action.

Kant's Deontology

According to the deontological view it is more important for an action to have moral value and status rather than being good on the basis of the consequences it produces. Deontology believes that an action performed with a sense of duty is morally right rather than an action performed with an expectation of specific result. You must have noticed that the significance of nishkama karma mentioned in Indian philosophy lies in its deontological perspective. For this perspective the question 'what is duty?' is important. It is answered in various ways such as, the commandments of God, traditionally ordained rules, social laws etc. Any action that is in accordance with the law is considered to be ethical and any action that breaks the laws is considered immoral. Indian tradition states that the duties of an individual are determined by the varnashrama - by his/her aptitude (varna) and stage of life (ashrama). In the Western tradition, the well-known German philosopher

Immanuel Kant has tried to answer this question in a completely rational manner.

Before Kant, David Hume had propounded that man's desires, motivations, passions determine his wants and reason only tells how to achieve them. According to Hume reason is the slave of these passions and motivations. Kant did not agree with this view. Like Socrates and Plato, he believed that the moral laws, duties should be universal and equal for all. Our evaluation of what is right and what is wrong should be impartial. He insisted that the moral values of an action had nothing to do with the agent. If Hume's view is considered valid, then ethics will not remain objective. It will become subjective and will no more be universal. According to Kant, ethics must essentially be universal. Therefore he rejected Hume's view.

As long as morality is determined on the basis of emotions, motivations, desires, it cannot be free from being subjective/ relative, because emotions, desires etc. change from person to person. Therefore what is right for one person may be wrong for another. This causes a threat to the objectivity and the universality of ethics. Hence, Kant constructed his ethics with reason at its base. All human beings are rational and everyone has to agree with the truths and facts discovered by the reason. Likewise, Kant argues that everyone will have to accept whatever command intellect gives regarding the human behaviour. Suppose one finds someone's mobile on the college playground, one may wish to keep it to oneself, someone else may just avoid picking it up in order to avoid the troubles that follow, someone else may even wish/want to sell it secretly. But their reason would tell them, that the mobile should be deposited in college office. Whoever finds the mobile, whatever may be the wish or circumstances of the person who finds it, this command of reason would be appropriate and beneficial to all.



What is good? Is an important question in ethics. Kant's response to this question is unique. Generally health, wealth, knowledge etc. are considered as good. Kant contends that these things and things like these that are considered to be good are not unconditionally good, because they can be misused. When knowledge, power, money are used for wrong reasons, how can you call them 'good'?



Let's think!

Discuss some examples where you find the misuse of knowledge, wealth and power. Think about the reasons behind such misuse.

Does this then mean that there is nothing in the world that is inherently good or that cannot be misused? Kant answers this question negatively. What he calls Good will, is good irrespective of the circumstances. The Good will does not merely mean good wish/desire. The word 'will' is not only associated with desire, but also with the resolution to fulfill the wish. Desires are many. Every time we may not give our best to fulfill each desire. It is only when we are determined to get something; we work really hard and give our best to it. Many people wish to sing well, but the person who decides and states, "I will certainly sing well" works hard for

it. The will has the power of determination along with desire. Good will means a will or determination to perform a duty. When knowledge, power and wealth are accompanied by good will, then they will never be misused. Therefore, Kant believes that good will always reflects in moral laws. But how do we know what our duty is? Kant tells us a simple way to find this out. Now let's see what it is.

What should you do when your friend asks you to show your answer paper in the exam? Don't you ask yourself, what is your duty? At that point, you should think that, I may feel that I should show my answer paper to help my friend, but should everyone help his or her friends in the exams in the same way? You may even ask, what is wrong in doing so? If we think a little deeper, you will realize that if this becomes a general rule to help one another in the exam, then the exam system would make no sense. Because, the aim of the examination is to evaluate, how far the student has learned, to what extent and in what way the student has understood the subject. If the students copy, the objective will not be achieved. This means that there is an inconsistency between the purpose of the system of examination and writing the answers with the help of others rather than writing them on your own That is why 'everyone should help each-other in this way' can never be a general rule.

Kant gives a similar example of breaking a promise. If you make a rule that 'if it is possible to break a promise, one should break it', then within a few days, the practice of 'making a promise' will disappear. From this, Kant has concluded that if an action or the rule on which it is based, cannot be universalized, then that action cannot be our duty. Only the action that can be universalized is a duty. An action is universal and therefore moral if it is an action that; not just me, but whoever might have been in my place in this situation should have done.

When our actions are based on personal feelings, desires, it is not possible to universalize them. On the contrary, when they are based on reason, they can be universalized. It is as if we decide what we should do, what we should not do, as per the commands of our emotions or reason. But the commands based on emotions, motivations etc. are of the 'if - then' nature. Kant calls these 'hypothetical' imperatives. The command, 'If one wishes to gain good

physique then one should exercise regularly' does not apply to someone who does not wish to earn a good physique. On the contrary, the command 'everyone must exercise' does not depend on an individual's wish. It is a 'categorical' imperative. It is applicable to all. Any person's reason would accept this rule. Any action based on it becomes a moral duty because it can be universalized.

Categorical Imperative

From the actions that are performed according to the moral laws, man does not expect anything apart from morality. Performing a moral action with a sense of duty is the objective of moral action or ethics. The resolution such as "If I wish to get good marks in exam, then I must study regularly", is made with some expectation. Therefore it is of if-then nature that means it is conditional or hypothetical. However the moral imperatives are not intended towards any goal, therefore they are categorical.

Kant has suggested four formulations of these moral imperatives. These are described as Categorical Imperatives. As the law of nature is universal and necessary, similarly Kant expected moral laws to be universal and necessary. The formulations of Kant's imperative are as follows :

1. Act according to that maxim, which you at the same time can will to be a universal law.

In this imperative Kant suggests that while performing a moral act an individual should consider oneself as the representative of the whole human community. Any person irrespective of his /her state, religion, race, caste, gender etc. would choose the same action that I have chosen. That means, one should choose that action which goes beyond state, religion etc. and can be universalized.

2. Act only on that maxim, by which the action becomes a universal law of nature.

In the first rule Kant explains how to attain universality. In the second rule Kant expresses how an action becomes necessary. When every moral agent performs an action free from emotions, passions or selfish desires and with a sense of duty for duty's sake then the action becomes necessary. This sense of duty is towards

the moral law. The laws of nature are universal and they can not be violated. Moral laws are man-made. Even then, Kant stated that the moral agent should see himself as the creator of moral systems in human society. The universality and unavoidability of these moral laws would be the base of the moral systems. Thus, if every agent performs duty for the sake of duty, it will create a universal and unavoidable system of moral laws. The sense of duty that the moral agent has, is the reverence that he has towards the moral laws or the filling of honor. Thus even if these laws can be violated, the reverence that the moral agent has for the moral laws would endow them with the status of inviolable laws.

3. A moral agent should not use any person including oneself merely as a means. Every individual is an end in itself.

In order to achieve the universality and necessity of moral laws, every individual must uphold the value of human dignity. An individual should not use another individual as a means but should respect the dignity of every individual of being a human.

4. Act according to that maxim, by which the life goals of the individuals do not come in conflict with each-other, the freedom and behaviour of the other does not prove to be restrictive but is complementary to one another and helps in building a society where the dignity of every individual is upheld.

In a sense this imperative is a summarised version of the other three imperatives. While pursuing one's own ideals or ends one has to take care of the fact that it will not bring any harm to others. If this happens, then there will be an ideal order of human ends in the society.



Let's do!

Make a list of the actions that can be universalized and perform an act based on such an incident. (For example, always speak truth)

Kant says that the categorical imperative is a moral law. The unique feature of this law is that it is not imposed on us externally. This law is not given to us by any external person or power. This law is a law one creates for oneself. Reason as it gives this command to control our desires, emotions and motivations. To obey this law is to act rationally. Man is rational. That is why he can be moral. No beings other than humans can control their natural instincts, because according to Kant they do not have the capacity to reason. Human existence has dignity due to rationality. The idea of human dignity is very important to Kant.

Kant's ethics honors human rationality and it is based on it. In his ethics the place and status he gives to universality and impartiality is important. Likewise, his standpoint of treating every individual as an end in it-self and preserving an individual's dignity gives valuable guidance for the social life.



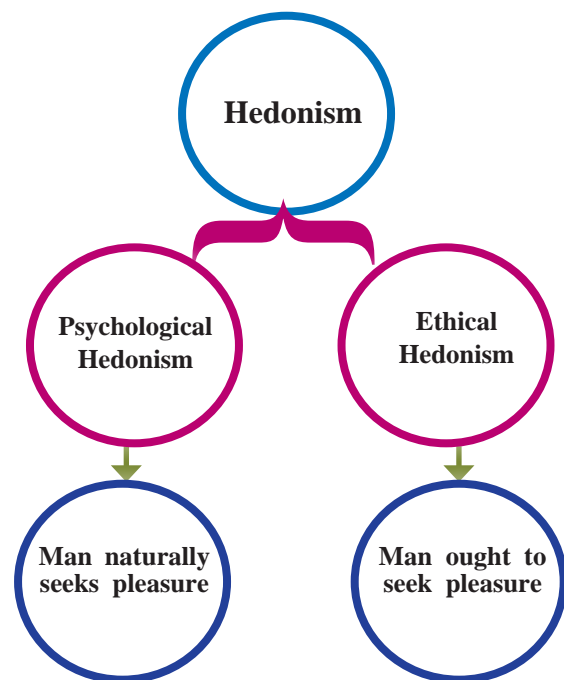
Let's Talk!

Analyze the relationship between two individuals from the perspective of means and ends. Discuss why it is wrong to treat a human being merely as a means.

Utilitarianism

In Kant's deontological ethics the consequences of the action, whether they were good or bad, do not have any significance. As utilitarianism is a kind of consequentialism, according to utilitarianists the moral value of an action depends on results, i.e. the goodness of the consequences.

An important question for consequentialists is which consequences are to be considered as good? What is the criterion of goodness? The responses that we get to these questions are classified into the hedonists and non-hedonists theories. Utilitarianism is a form of hedonism. There are again two subtypes of hedonisms. They are psychological hedonism and ethical hedonism. Psychology is a descriptive science describing the human behaviour and the factors related to it, while ethics is a normative science that evaluates human behaviour and critically discusses the criteria and theories of evaluation. According to psychological hedonism, while performing any action man naturally aims at attaining pleasure. Man does everything with an intention of gaining pleasure. This description of the natural tendencies of human behaviour



is very close to today's science. Ethical hedonism propounds that attaining pleasure ought to be the aim of every action performed by an individual. Any action that gives pleasurable consequences, any action that creates pleasure is a moral action. This is what the Charvaka's hedonism states as well.

It is not enough to say that the purpose of the action is pleasure, because immediately

the next question arises, whose pleasure? One's own? Of others? Or of everyone? According to these three alternatives hedonism can be classified into three sub-types, Egoistic hedonism, Altruistic Hedonism and Universalistic Hedonism. The ego-centric view which thinks of one's own happiness while performing an action, challenges the common sense understanding of ethics. In the same way, it is not always possible for a common man to always think and act considering the happiness of the others only.

Therefore, the universalistic hedonism, which states that the universal happiness i.e. the happiness of all those who are affected by the action has to be considered as more practical and desirable than the other two alternatives. Utilitarianism advocates Universalistic Hedonism.

Jeremy Bentham

Jeremy Bentham and John Stuart Mill are the two major proponents of utilitarianism. According to Bentham, human behaviour/

Bentham's Hedonistic Calculus : We measure a shape of a thing with the help of its length, width and height. According to Bentham in the same way with the help of some qualities we can measure pleasure. We always notice these qualities when we compare two actions or pleasures.

Qualities of pleasures stated by Bentham to measure pleasure are as follows:

1. Intensity : The action from which we experience more intense pleasure compared to other actions is considered superior. As for a singer the pleasure of singing is more intense compared to the pleasure of reading a book then for him the quantity of pleasure gained from singing is definitely more than the quantity of the pleasure gained from reading of a book. Similarly, in winter season sitting near a bonfire is more pleasurable than sitting near the flame of a candle. As the earlier one would certainly give more warmth.

2. Duration : That action is considered an ethically better action which produces long lasting pleasures. As the fragrance of the perfume stays longer if applied on clothes instead of applying it on the skin/hand, similarly the pleasure should be long lasting.

3. Certainty : Any action of which we are certain that it will lead to pleasure is ethically good. This quality is well explained in the proverbs like, 'Better an egg today than a hen tomorrow', 'A bird in the hand is worth two in the bushes' etc.

4. Propinquity (nearness or remoteness) : That action is a good action

which is immediately followed by pleasure. E.g., the pleasure that one gets by going for a trip that is planned on the immediately following holiday is better than the pleasure that one gets by going for a trip that is planned after a month.

First four qualities demonstrate the value of pleasure.

5. Productivity : That pleasure is superior, which leads to other pleasures too. If I book a stall in the exhibition then certainly my products will be sold there. Those customers might even continue buying products from me. They will tell others about products and the sale of my products will increase. As a result, several goals will be achieved such as; economic stability, growth of business etc.

6. Purity : The more the pleasure is devoid of pain the more it is pure. E.g., while eating delicious rice, if one happens to find stone in it, the best thing to do is remove the stone and continue relishing the rice.

These two above mentioned qualities/ characteristics bring to light the consequences that are produced from the pleasures.

7. Extension : That action is a good action which gives pleasure to not just me but many people. Organising of a concert gives pleasure not only to the singer but also to all the music lovers. The principle of 'greatest number of pleasure of greatest number of people' propounded by the utilitarianists distinctly appears in the quality of extension.

action is governed by two masters namely, Pleasure and Pain. That is, human action is regulated only by the desire to gain pleasure and to avoid pain. Bentham's peculiarity lies in his view that even animals have sensations of pleasure and pain. This view of Bentham has been foundational for the discussion of animal rights. Bentham's view becomes the base for animals' rights.

He suggests that even if it is true that human beings naturally act with the desire to gain pleasure; yet ethically that action is right which creates maximum happiness of maximum number of people. This principle is well known as 'the greatest happiness of greatest number'. Most actions lead to both kinds of consequences, pleasurable and painful. Several alternative actions are available at the same time. Bentham believes that one must choose the alternative that creates more happiness and less suffering. If the available options are just the ones that would cause pain, then obviously one must choose the action that is less distressing.

Bentham was influenced by mathematics and science of his time. He proposed that although happiness is subjective, it can be measured. Due to the possibility of measuring pleasure hedonism can help in objective selection of pleasures. Bentham created Hedonistic Calculus in order to make such measurements. The criteria are as follows: (1) Intensity (2) Duration (3) Certainty (4) Proximity (5) Productivity (6) Purity and (7) Extension. Using these seven criteria, we can have a comparative study of different actions from the hedonist point of view. Of these the first six criteria are related to individual's happiness; whereas the seventh criterion is concerned with the number of people affected by the action. This is why Bentham's utilitarianism becomes universalistic rather than egoistic. Since Bentham adheres to the principle of equality, he asserts that the pleasure and pain of every person has equal value. This means no matter what the social,

political or economic status of an individual is, everyone's pleasures and pains have equal value. No matter however high a person's position is, that does not change the value of his/her pleasures and pains.

John Stuart Mill

According to Bentham there is no qualitative difference between various pleasures. Therefore, he believes that pleasures can be distinguished by merely measuring them. Since pleasure is an abstract emotion, it is obviously very difficult to measure pleasures systematically.



Moreover, there is a general understanding that pleasures have qualitative differences. Mill agrees with this standpoint. He believes that pleasures differ not only quantitatively but also qualitatively. He is known for his quote that, "It is better to be a person dissatisfied than a pig satisfied; better to be a Socrates dissatisfied than a fool satisfied." From this proposition, it is clear that Mill believes that a hierarchical order of pleasures can be built based on their superiority or inferiority.

Like Bentham, Mill accepts psychological hedonism. Not only that, he also presents arguments for ethical hedonism on the basis of psychological hedonism. According to Mill, a man always desires pleasure. The

only subject of man's desire is pleasure. Although superficially it appears that man wants many more things other than pleasure, but ultimately all these are desired either as means to pleasure or as a part of pleasure. Only pleasure has intrinsic value. All other things that are valuable only have instrumental value. Mill goes further and asserts that everyone desires pleasure; this itself proves that pleasure is good and desirable. Since pleasure is desired by all, in that sense it must be something good. Just as the pleasure of a person is good for that person, similarly the happiness of the society is good for all. That means, Mill believes that it is good for every individual. Although it is normally believed that there is a difference between Egoistic Hedonism and Universalistic Hedonism, through this argument Mill indicates that, there is no such difference.



Let's Talk!

Discuss in group the similarities and dissimilarities in Mill and Bentham's Hedonism. Present the important points of your discussion in the class.

You must have noticed, that both the theories, namely, deontology and consequentialism suggest different but useful standards for the ethical evaluation of actions. We must evaluate our actions by applying these criteria. It is not the function of ethics to give specific orders regarding what one should do and what one should not do in particular circumstances. As we have seen earlier in this lesson, ethics guides us about how should we think while taking moral decisions and evaluating actions. We have briefly taken an account of the contemplations made in both the traditions considering their culture. Of course it is our job to select our actions with respect to the beliefs, doctrines and criteria available. Although ethics is a subject matter of theoretical contemplation and discussion, it is also equally related with

practical life. Ethics has evolved by assessing the rightness and wrongness of the doctrines by applying them to the actual situations confronted in the practical life and by contemplating on these over and over again.

The Scientific Perspective

So far, we have been introduced to the deliberations made by the historical traditions of philosophy, on how to behave and why. This introduction gives information regarding different theoretical perspectives that provide guidance regarding what is good and what is bad in a person's life. We must consider that these theoretical standpoints have a history of a few thousand years. In the course of history, human life has kept changing. But the changes were gradual and the primary problems that humans had to face were of same nature.

With the emergence of agriculture, classes were created and man-woman relationship also changed, in accordance with agriculture. It was during this period that the religious framework started becoming rigid. Religion provided guidance regarding how to act in the prevalent situation. The industrial era began two centuries ago. Even at that time things were not very different. Hunger, disease, war were the major problems that man had to face. He had no cure for old age and death.

Nevertheless, today in the 21st century the situation is changing rapidly. Even today, hunger, disease, war are the major problems, but their intensity has reduced compared to last few centuries. Even today, the old age and death have remained mysteries for us, but now technology does not look at them as something that is beyond human reach, but as 'solvable problems'.

Through the theory of evolution it became possible to objectively understand, how was life generated and how did it evolve. It was also understood that humans are a product of evolution. It was also

realized that what humans are today, that is, not only their bodily structure but also their behaviour, are influenced by the history of evolution. Later, with the study of brain it was known that the interconnections concerning human behaviour are found in the structure of the nervous system and in the peculiar working patterns of the brain. After realizing that the functioning/working patterns of the brain must be examined in order to understand why humans behave as they do, investigations began to accelerate in that direction.

This was a significant change. If we view history we discover that so far philosophy and religion have discussed moral issues concerning human actions. However now, the study of human behaviour itself has become important. Through this study some significant facts were noticed. For example, if we look at the structure of the brain there are two parts, viz. the one that has evolved initially is amygdala and the other that has evolved later is neo cortex. Amygdala is more influential in the initial stage of the growth. It was found out that the functions like, thinking about the past and the future; comprehensive thinking, are the functions of the neo cortex which grows gradually. The brain nerves cannot be regenerated and in old age the function of brain slows down. Such observations helped to understand why a person behaves in a particular way. But now science can explain in an objective manner the subtleties of human nature or at least the study seems to be oriented towards it. Efforts are also underway to find objective answers to the traditional questions like, whether the inborn qualities are more important or the upbringing.

The answers to these questions regarding how to behave and why; can now be found in the light of laws of evolution. For solving the problems ranging from the choice of food to the choice of profession; religious and traditional perspectives were used so far.



Let's find it!

Collect more information about the functioning of human brain which offers analysis of human behaviour.

The alternative that is available now of solving these problems is that of considering the biological inheritance and person's likes-dislikes, capabilities and limitations. Instead of using the religious and traditional perspectives one can refer to this recent alternative.

All these developments also raise some questions. For example, recent research has shown that the emotion of pleasure, happiness, is important for human beings, for making a decision regarding action. This idea is not new to philosophy. It has also been challenged. In Buddhist philosophy it has been said that the more we desire pleasurable experiences, the more stressed and dissatisfied we become. In order to find the true satisfaction, man should not run behind the pleasurable experiences. Even if it is so, what we see is, everyone is in the pursuit of instant and greater pleasures. The technology that is developing around us is as if created with this purpose. This has given rise to several questions. We will discuss them in the chapter of science and technology.

Ruta - ऋत	Asrava - आस्रव
Karmasiddhanta - कर्मसिद्धांत	Pudgala - पुद्गल
Runa - ऋण	Triratna - त्रिरत्ने
Deva runa - देवऋण	Panchavrata - पंचव्रत
Rish runa - ऋषीऋण	Brahmacharya - ब्रम्हचर्य
Pitru runa - पितृऋण	Aparigraha - अपरिग्रह
Manushya runa - मनुष्यऋण	Anuvrata - अणुव्रत
Karmaphala - कर्मफल	Mahavrata - महाव्रत
Punya karma - पुण्यकर्म	Ashtangika marga - अष्टांगिक मार्ग
Trivarga - त्रिवर्ग	Sheela - शिल
Kama - काम	Satshila - सतशील
Artha - अर्थ	Panchasheela - पंचशील
Dharma - धर्म	Aprmada - अप्रमाद
Moksha - मोक्ष	Nirvana - निर्वाण
Dhru - धृ	Samskara - संस्कार
Dharmashastra - धर्मशास्त्र	Sammaditthi - सम्मदिथी
Sadharan dharma - साधारण धर्म	Sammankalpa - सम्म संकल्प
Visheshdharma - विशेषधर्म	Samyaksankalpa - सम्यक संकल्प
Satya - सत्य	Sammavacha - सम्मवाचा
Ahinsa - अहिंसा	Samyagvak - सम्यकवाक्
Asteya - अस्तेय	Sammakammanta - सम्मकामंता
Svadharm - स्वधर्म	Samyakkarmanta - सम्यककर्मंता
Raag - राग	Samma-Ajiva - सम्म-अजीवा
Dvesha - द्वेष	Samyagajive - सम्यगजीव
Sanchita - संचित	Sammavayam - सम्म व्यायाम
Sanchayiman - संचयीमान	Sammāsati - सम्मसती
Kriyaman - क्रियमान	Samyaksmṛti - सम्यक स्मृती
Sanchitakarma - संचितकर्म	Sammāsamādhi - सम्मसमाधी
Prarabdha - प्रारब्ध	Samyaksamādhi - सम्यकसमाधी
Nityakarma - नित्यकर्म	
Naimittikakarma - नैमित्तिककर्म	
Nishkama karma - निष्कामकर्म	
Nirajara - निर्जरा	
Samvara - संवर	

EXERCISES

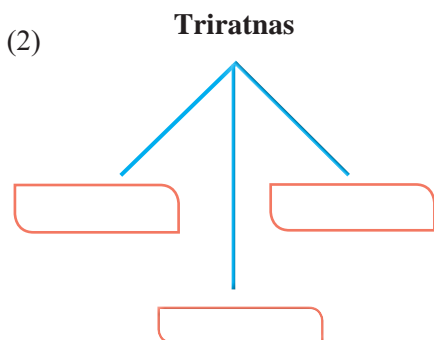
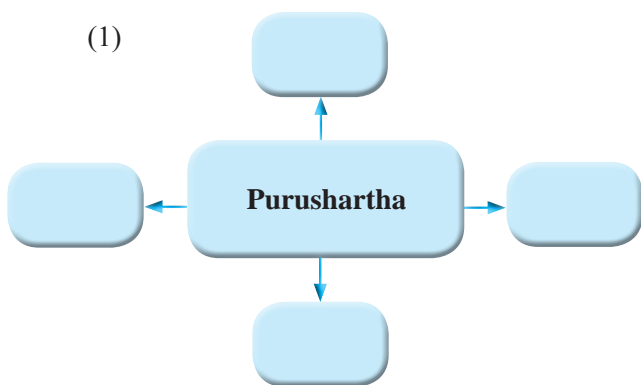
Q.1 Find the odd word/pair out and write.

- (1) Right-wrong, good-bad, voluntary-involuntary, customs- mores
- (2) Devruna, Mitraruna, Pitruruna, Rishiruna.
- (3) Truth, pleasure, non-violence, non-stealing.

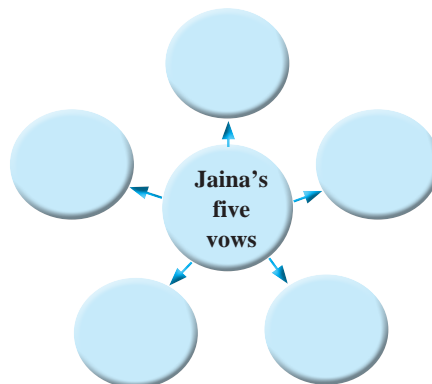
Q.2 Write the answers in 20-25 words.

- (1) What are the two motivations, viz., Raag and Dvesha behind voluntary actions?
- (2) When does the process of nirjara begin?
- (3) What are the noble truths of Bauddhas?
- (4) What are the main criteria of moral evaluation of an act?

Q.3 Complete the concept map/flow-chart.



(3)



Q.4 Write a short note on the following.

- (1) Evolution and morality
- (2) Bentham's hedonism and hedonistic calculus
- (3) Buddhist Ethics
- (4) Purushartha

Q.5 In Indian tradition why has karma theory always been associated with the concept of re-birth?

Q.6 Why did Kant not agree with David Hume's view that reason is the slave of passions and motivations?

Q.7 Discuss in detail ethics in Jain Darshan.

Q.8 Write a dialogue on the following.
Can a happy person be a moral person?

Q.9 State the contribution of Technology in search of pleasure.

Activity

Have a conversation with the elders in your family about the challenges they face in correlating Morality with the problems in day-to-day life.

6. Following the path of art

- **Introduction**
- **Aesthetic/Artistic perspective**
- **Aesthetic experience**
- **Does beauty really exist or appear?**
- **The nature of Art**
- **Artistic processes and forms of Arts**
- **Objects of Art**
- **The Scientific perspective**

Introduction

It is known that the idea of happiness is different for everyone. We would never have an unequivocal answer to the question, what is happiness and where it comes from. However, majority would agree that everybody seeks pleasure. Pleasure, happiness, joy, bliss, contentment all these words describe the experiences and states of mind we would like to have. What makes it possible for us to have such experiences or be in such state of mind? Leave aside the question of a universal definition of pleasure, but are we even aware about our own idea of happiness? How we get it and when? Have you ever thought about it? Perhaps, we have to give it a good thought if we want to be happy.

We attain pleasure in many ways, in many forms. It is always pleasing to relish tasty spicy snacks in the chill after a drizzle. Our happiness knows no bounds when Indian team wins the world-cup. It brings great joy to us when we meet an old friend after a long time. What a great fun it is to help a young lad in the neighbourhood to ride a bicycle. We help a person with special needs to cross the road and that is a special joy! It is a gratifying feeling when we see our parents happy with our success. In other words, our idea of happiness is related to our abilities and our qualities. Human ability to appreciate and create beauty

is a very special one. This does not mean that they are absent in other organisms. Weaver-bird builds a fine nest, spider knits an intricate web, birds chirp, insects crawl on sand to leave a pattern behind them, but are they capable of appreciating this as beauty? Can't say! We can, however, say at the moment that human consciousness is more evolved than other organisms and humans have 'awareness of awareness'. Thus, their perception of beauty might be different than other beings. It opens a whole new world of aesthetic and artistic experience to them. Humans can experience happiness beyond the satisfaction of basic needs, in the form of pleasure or joy.



A blossoming, delicate, fragrant flower, the colorful sky at the time of sunset, deep roar of the sea, sweet chirping of birds, thundering and lightening that illuminates darkness, storms that make treetops bend and touch the ground; we witness many such attractive forms of nature. We are delighted by these experiences, sometimes feel excited, sometimes astonished, sometimes speechless! We call these experiences as aesthetic experience. They include the experience of

both natural as well as man-made beauty.

Let's watch!

Visit Museums/Art museums near by your area

Art and art related practices depict human love for beauty and their capacity to create too. Aesthetics is a branch of philosophy that studies aesthetic and artistic experience in depth.

Last year, we already had a brief introduction to this branch. It studies many questions and issues related to beauty, artistic creation and appreciation such as - what is beauty? What is the nature of aesthetic experience? What is the importance of art in human life? What is the nature of work of art? What are the elements of art process and the interrelationship among these elements? It also reflects upon concerns such as impact of art on society, relationship between art and ethics, evaluation criteria of art and the relationship between art and craft.

The concept of beauty and art have been a part of philosophical discourse since a long time. However, aesthetics as a branch of philosophy emerged only in 18th century. German philosopher Baumgarten used the term, 'Aesthetics' for the first time for such study. The word has its roots in Greek term Aesthanomai. Aesthanomai means sensory experience, whereas aesthetics means sensory experience and feelings, emotions created through it. Baumgarten defined aesthetics as a branch which studies aesthetic experience.

Immanuel Kant differentiated ethical experience and experience of sensory pleasures from aesthetic experience. This provided philosophical basis to aesthetics.

Let's discover!

Find more information about Kant's views on aesthetics.

Later, beauty did not remain a central concept of this discourse. It turned more towards art and the questions related to art. Thus this branch is now known as 'philosophy of art'. In this chapter, let us get introduced to a few important concepts discussed in this branch.

Aesthetic/Artistic Perspectives

Our relationship with the surrounding is manifold. We relate with it through many channels such as sensory experience, feelings and emotions, intellect, thoughts, reasoning, imagination, action, evaluation etc. Our relationship with the world is rooted in three different perspectives. Cognitive perspective highlights the nature of man as a knower. This knower wants to know about the origin of the universe, its nature and function. The knower is interested in knowing - how many types of things are there in the world? What are they made-up of? What kind of changes do they go through? Which laws/principles govern these changes, and suchmore. As we saw, science and philosophy originate from the same sense of wonder. Systems of understanding the world evolve. Development of technology enables us to us to create instruments that reveal the unknown aspects of the world. The knower uses these instruments as a neutral observer. There is no place for feelings and emotions, imagination, sensitivity and values in this exercise. When you conduct an experiment in the laboratory, your personal like-dislike, emotions, mental state have no value there. All that matters is the subject of experiment. Likewise, individual has no importance in the knowledge-centric perspective. The subject matter, that is objects and phenomena and interrelationships among them, are important.

Second perspective focuses on what is useful in life. We can call it the utilitarian or practical perspective. Organisms have a basic instinct to live and flourish and so do humans. Thus, we are constantly in search of what is

useful to us and what is not. It is not just a sense of wonder or quest of knowledge that inspires us to do so. It is a basic biological instinct. In the process of evolution and in socio-cultural development, this instinct is also linked with the development of science and technology. Technological efficiency increases manifold when it is coupled with scientific knowledge. Accordingly, comfort goods also increase. Knowledge-centric and utilitarian perspective complement each-other. Useful instruments enhance knowledge and enhanced knowledge develops our understanding of what is useful and what is not.

Both these perspectives classify objects and phenomena in nature in their own way. There are innumerable objects in the universe. Several phenomena occur in it. They are classified on the basis of the similarities among them. Knowledge-centric perspective tries to seek the connection between objects and phenomena and the laws that govern them. The laws are applied to every object and phenomena in its purview. Such typological representation is more important to knowledge-centric perspective than the actual existence of the object with all its peculiarity. Utilitarian perspective classifies objects on the basis of their utility i.e. the functions they perform. According to this perspective, objects are basically instruments. In order to make an object, first, its use is determined, then, it is decided how to make that object with what material and form etc. Multiple types of objects are made from the same basic substance.



Let's do!

Prepare various objects from paper in Origami style and arrange an exhibition of these objects.

Many things are made from wood, but their patterns are different. A chair, a table, a bench classifying all these objects according to their usage is a utilitarian perspective,

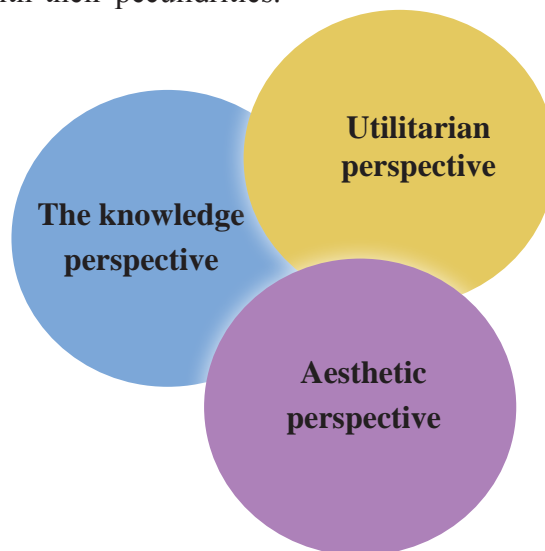
whereas identifying them as objects made from wood and thus, categorizing them separately from objects made up of plastic or metal is a knowledge-centric perspective.



Let's do!

Take different moulds such as those used for making cakes, cookies etc. and use them on different types of materials such as wax or clay; for making various objects.

Yet another perspective that is different from the above-mentioned perspectives through which we not only experience objects but also the world is an aesthetic perspective. This perspective does not enquire into what the object (of experience) is made-up of, which laws govern it, what is its function, what is its use etc. Significance is given to the object of experience and the persons experiencing it. Object classification is immaterial for this perspective. This perspective makes it possible to experience nature and objects without having any specific purpose to begin with. It lets the sensations and images emerge in the mind in the way in which they actually emerge. What is significant in this experience, is the specific nature of the object that is experienced and of the person who is experiencing. Aesthetic perspective is interested in experiencing various forms/types of nature, particular objects, individual and social life with their peculiarities.

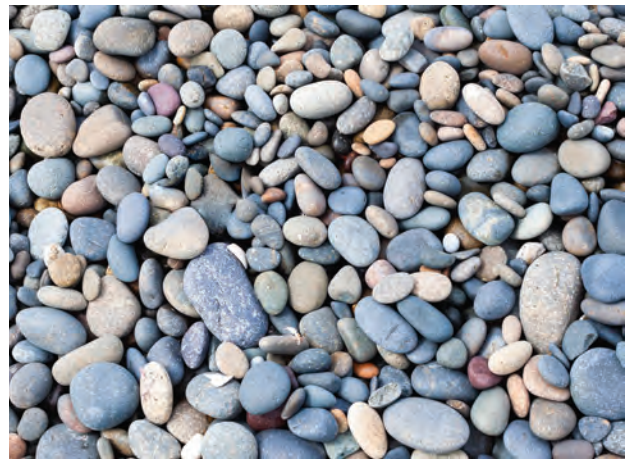


This perspective has a special significance in philosophy. We have studied metaphysics, epistemology and ethics as branches of philosophy. The qualities such as human sensitivity, imagination, creativity, emotionality and other such remain on the periphery in all these branches. Aesthetics studies these qualities and enriches our understanding of being human. It does not study the non-human aspect of existence merely for its bearing upon human existence but also reflects upon sheer experience of existence and its impact on individual's state of mind. Aesthetics presents a very different view of objects, people, relationships, phenomena that we experience. Thus, we are able to connect with pure existence of things, recognize their peculiarities, and value which are beyond human utilitarian perspective. Through this, we indirectly learn to acknowledge and appreciate the existence of the particular objects.

In aesthetic perspective, non-human existence, nature does not remain an isolated existence. It becomes an integral part of human sensitivity, imagination and thought. Human sensitivity and creativity bring out novel aspects of nature and also inspire us to understand the manifested existence beyond what is generally known. Aesthetic perspective generates a possibility of experiencing nature not as a mere study object or a useful resource. It enables man to understand that things have their own existential value. In present times, when nature and humans are looked at as mere 'resource'; this awareness is of immense importance. It gives us a different view-point to look at ourselves, our society, living and non-living world beyond ego-centric or human centric understanding of things. The aesthetic experience of a common man and the artist's creation on an art object stem from this very view point. Let us understand this with the help of an example.

A walk in nature brings many different things to our notice. Imagine, a group of

friends is on a picnic and they find a pile of stones. What kinds of responses would it generate? 'Who laid these stones here?' Somebody may get curious. A geology student may recall what he has studied about rock, its type and its genealogy. Some may find the stones as an obstacle on the trail. Some may use the rock to sit on. Some may start thinking about what can be made with the stones. Some may spot a beautiful pattern in the rocks. A light and shadow play may interest a few. Glaze of rock particles may dazzle somebody. Its soft touch might be appealing to some. An artist may think of making a sculpture out of it.



When a sculptor works on a stone or an architect designs a structure or a monument, we realize the potential in stone, its ability to withstand extremities of seasons. We also experience how rock manifests itself in bright light, twilight, light percolating through clouds, darkening evening etc. Through the feelings expressed by the image/idol created by the sculptor, the material in inanimate stone as if acquires a living, dynamic and positive existence. This is how, existential value of nature, of every phenomenon in nature, of objects like stones are revealed through works of art. This awareness is an important aspect of culture.



Like stone, which is a natural object, we also take man-made objects such as a table for granted in our day to day life. An artist makes us aware of them too, through impressions and images related to these. Imagine, you are looking at a painting. A table is drawn on a canvas. There are few papers on the table and eye-glasses removed from the eyes.

This image might subtly stimulate your memory of your grandfather or your mother getting up from the table just after scribbling something. You may also recall your favorite author, a philosopher or even a leader. The images of table, papers and glasses will invoke memories and emotions.



Let's do!

In the class, some students will draw pictures and other students will speak about the images and feelings that the pictures give rise to in their minds.

Aesthetic Experience

Aesthetic or artistic experience is an outcome of a developed sense of beauty in humans. This awareness makes it possible for

us to have aesthetic experience. Aesthetics or philosophy of art discusses the nature of aesthetic experience in which we enjoy nature or works of art. Sensory experience of a particular person is at the base of aesthetic experience. However, it is not confined to sensory experience. It affects our emotions, thoughts, imagination etc. The memories of these experiences linger in our mind. Sometimes it invokes old memories, unravels the relationship between these experiences. We tend to find out something new about ourselves, the society and the world we live in. You might have had such experience while watching a film or a play. We can actually feel how sensory experience, emotions, thoughts and imagination connect with one another with subtlety and tenderness. Aesthetic experience provides a magic touch to our daily monotonous and somewhat mechanical life.

The peculiarity of aesthetic experience is such that it is always pleasurable. However, this pleasure is quite different than the pleasure we otherwise get through sensory experience. This difference provides a key to know the peculiarities of aesthetic experience. The joy of observing a beautiful landscape, reading a poem that touches our heart, a deep satisfaction of watching a beautiful play...have you tried to understand the nature of these experiences? Can you compare it with the joy of eating your favorite food to the heart's content? Or with the joy of getting something as a gift that you dreamt of having or with the joy of winning a tournament? If not, do try. Let us try and understand how this comparison is possible with the help of following examples.



Let's do!

Arrange in a classroom, programmes of poem recitation, play reading and enjoy the experience.

Imagine, an orange colored, fresh, sweet smelling mango is placed in front of us. The

sight would make us feel happy. We would also feel like having it. Just a sight of mango would not be sufficient, we would be happy only if we get to eat it. In contrast to this, a sculpture or a painting would make us happy even with a sight. The ownership of the painting or the sculpture would not be the only condition to make us happy about it.



Works of art are preserved in art museums. Maharashtra has many rock cut caves and temples of artistic design with a rich collection of sculptures. They give us joy in the same way. The sight of breathtaking valleys from the mountain tops, deep forests, gushing streams give us pure joy. We are blown by sweet calls of birds.

Let's visit!

Collect information about ancient art, artifacts, monuments etc. If possible, visit old caves, temples, architectural structures.

These examples reveal that aesthetic experience is not dependent on individual's wants, desires, inspirations and expectations. German philosopher Immanuel Kant calls aesthetic experience as 'disinterested delight'. According to Kant, the joy that we find in aesthetic experience is not dependent on the practical, utilitarian or ethical value of a natural object or a work of art. Thus, this joy is disinterested, pure. The experience that brings such joy is called aesthetic experience.

Are you wondering why we are not discussing beauty while talking about aesthetic experience although aesthetic experience is basically an experience of beauty? You are right. But it is not an easy task. Generally, when we like a particular person, an object, a scene, we may call it beautiful. But we do not use the word beauty every time to describe our feelings. In everyday life many a times, we say this is nice, this is good or I liked it very much. Adjectives also change with time and generation. Do you not say, awesome, epic, amazing as synonymous to beautiful many a times?



Let's do!

Make a presentation in the classroom on 'manifestation of art in day to day life', e.g. different forms, types of decoration including both traditional and new forms concerning it.

Does 'Beauty' really exist or appears?

Philosophy discusses many problems and issues related to the concept of beauty. When we use the adjective 'beautiful' for a particular object we believe that beauty lies in that object. Does this quality exist in the object like its other qualities as color, form, smell and weight? We would be able to 'show it' if the answer to this question was affirmative. We would not have engaging debates on whether a particular thing is beautiful or not. At least we would be able to resolve the issue in an objective way. Whether a particular thing is heavy or lightweight could be a matter of subjective experience, its weight, however, can be measured in an objective way. Beauty can not be judged in such objective and impersonal manner.



Let's do!

Take some water in a glass and hold it in your hands. Tell others how you find the glass, heavy or light in weight. Hold it in the same position for ten more minutes.

Let others know when your hand starts aching. The glass even though it weighed just the same as it was in the beginning (objective reality) is first felt light weight and then heavy (subjective reality). Experience it yourself. This activity can be done in groups.

In the history of Western philosophy, in Greek and medieval era, beauty was believed to be an objective quality, that is, as a quality inherent in the object. They analyzed it on the basis of structure of an object. An object is made up of many elements. They give rise to different qualities of the object. If, these elements are structured in a proper manner, meaning, if there is harmony, balance, proportionality, symmetry and rhythm in them; the object would be called beautiful. Thus, these elements were identified as elements of beauty. Since, these elements were in the object, beauty was thought of as an objective characteristic.

David Hume, a well-known philosopher, challenged this view in modern era. Hume propounded that beauty does not lie in the object. It is not an objective element. It depends upon the person who experiences it. A statement that something is beautiful is not an objective statement. It is very much subjective. As the saying goes - 'Laila is beautiful only in eyes of Majnu'. It implies, that beauty lies in the eyes of beholder, not in the object. So the question arises, is beauty really there or does it appear? Some philosophers after Hume tried to argue that beauty is both subjective as well as objective.



Let's talk!

Discuss 'whether beauty merely appears or is it really there?', try to present your opinions with the help of sound arguments.

The other questions related to the objectivity and subjectivity of beauty are, can we define beauty? Can we fix the criteria of beauty? You have learnt many definitions in Science and Mathematics. Definition explains the meaning of a term/concept with precision. A definition talks about the quality that is present in all the objects denoted by that term. For example, definition of a triangle – a triangle is a closed figure of three straight lines joining at three different points. This definition of triangle summarizes, essential quality of any given triangle and at the same time, it also highlights that a triangle is distinct from any other geometric figure. If all the things that we call beautiful essentially possess a particular property, we may be able to define beauty. Some philosophers have made such an effort. However, according to many philosophers and thinkers such a definition is not possible. If we agree that beauty is not an objective quality, it becomes impossible to define beauty, as definitions have to be objective. If the idea of beauty changes from person to person, one cannot come up with an objective definition of beauty.

It is clear that if aesthetic experience is a subjective term, there would never be criteria of beauty that are acceptable to all. You must have had such an experience, that your friends do not like the story that you liked immensely. A building or a structure that you did not like at all receives great appreciation by others. These examples indicate that it is very difficult to determine the criteria of beauty and to define it. The diversity in art forms makes the task of objective definition even more difficult.

Every art form has its own peculiarities, which are different than others. Beauty of a work of art can only be discussed within the framework of properties of a given art form. Can we have the common criteria to discuss the aesthetic worth of an abstract painting, a musical note, a novel and a movie?



Let's write!

Do appreciation of a picture, a story, a movie and make a list of criteria on the basis of which appreciation is done.

Cultural history teaches us that the criteria for beauty change from time to time and from place to place. Fairness was regarded as a mark of beauty once. However, now we do not think so. There is beauty in every color. We now believe that folk art forms are aesthetically as valuable as classic art forms. There was a tradition in Sanskrit literature to end a play on a happy note. Many playwrights followed the same. However, playwrights like Bhasa and Bhavabhuti challenged this tradition. Aesthetically their plays are considered as equally valuable.

The other important aspect of beauty is that the things that we do not find beautiful in real life appear beautiful when we find them in works of art. We would not find a roadside garbage pile beautiful! However, its painting can be beautiful. We can evaluate such painting on the basis of aesthetic norms. Aesthetics discusses art, aesthetic experience related to work of art and in general the nature of artistic experience. Before we get into this discussion let us get acquainted with the nature of art and history of art.

The nature of art

While thinking about art, it is essential to think about the work of art, the artist who creates it and the recipient who enjoys it. Its important to note here that art is essentially

man-made. An artist has the ability to create the things that may not be found in real world. Art is thus an expression or manifestation of human creativity. The same quality also makes it possible to make other goods, instruments and objects. If we look at human history we'll find that initially these two types of creations went hand in hand. Just as humans have been knowers and doers, they also have been artists and receivers since ancient times. Researchers have found evidences of human craftsmanship and art making right from stone-age.

Remember the painting from Bhimbetka that we saw last year? We call it a painting, a work of art, but we do not call the tools found in the same era as artwork. It implies that in order to be called as a work of art it is essential but not sufficient for an object to be manmade. It also takes certain other qualities. It is evident that a rainbow is not a work of art because it is not manmade. But we can not call a bow that is used in hunting a piece of art just because it is manmade. Suppose a bow is made with flowers and petals. It could be then qualified as a work of art because it is not only man made but it has no real practical use. It is made only to please the artist and for those who appreciate. We have talked about such pleasure when we discussed aesthetic experience. The point to be additionally noted here is that every art experience need not only limit itself to the experience of beauty.

Philosophy of art discusses different forms of art, commonly referred to as fine arts. Fine arts include every art form such as literature, music, dance, drama, painting, sculpting etc.



Let's do!

Collect the information about Folk art in your area and arrange an exhibition of the same in your class.

Where appreciation is the main motive behind creativity and not the utility of things, such art forms are called as 'fine arts'. Humans

make various objects. Many of them are useful and artistically appealing at the same time. We buy cloths, vehicles, cell phones. We not only see the utility aspect in them, we see their aesthetic appeal too. However, their utility is their primary value.




As against this, we appreciate a poem, a song, instrumental music, painting etc. which basically have artistic value. They may also have utilitarian value but their primary value is artistic. We may use a beautiful vase as a paperweight. Vase may be useful in this respect, but, its primary value is its aesthetic worth. There is also an exception such as the art called architecture. For example, a building is designed taken into account its use. Even then famous monuments like Tajmahal, Vatican Church, Kailas – the rock cut temple of Ellora are considered as great works of art.

Our artistic inspirations are rooted in our manifold experience of nature. Early humans were not only capable of receiving various sensations as form, color, smell, sound, texture etc. but with the help of reason they could also understand underlying patterns in various natural phenomena. It also shaped their emotional association with nature. Nature provides means to survive, nature can also abolish life. Nature can be attractive as well as scary. It can be astounding as well as bewildering. Man's relationship with nature has a contrast character of dialogue and conflict. The artistic creations of early humans depict the forms of nature as they understood them and the feelings they give rise to. Art has also been an effort of making sense of universe,

various phenomena and processes in the universe.

Human sensitivity, reason, emotionality and imagination resulted in the rise of civilizations. We have seen it last year that in the initial stages of cultural development humans responded to the surrounding nature in many different ways as myth, philosophy, religion, art and science. Artistic expression was coupled with creativity. Art flourished with development of culture. Along with nature, society, and societal patterns and events also became a subject matter of art. For a long time artistic creation was associated with religion. This association of art with life, nature, religion and morality continued almost till 18th century. Rapid growth of science and technology affected every field of life, art too was not an exception to it. Art became more independent. Criteria for artistic evaluation no longer came from religion and ethics. Art determined its own criteria. Art revealed itself in many forms as realistic, symbolic, entertaining etc. Technology started playing a major role in artistic creation.

 **Let's search!**
Collect information about realistic, symbolic and recreational art.

Earlier, there wasn't a major distinction between art and craft. The gap between the two increased later on. Utility has a prime importance in craft. Handcrafts are used mainly for decoration. Creativity has limited scope in craftsmanship. Patterns are repeatedly used. Patterns are beautiful, attractive but it is not an independent creation of an artist. That is why Mehendi or Rangoli are called as craft. It takes skill to draw the pattern in exactly same manner from printed format but it doesn't take much of creativity. It takes both creativity and skill though to create a new pattern. In reality, art also needs some kind of craftsmanship and crafting too is incomplete without artistic touch.

Artistic processes and forms of art

As we saw earlier, the artist, the work of art and the receiver are the main components of art. The process of art involves the process of creation, the actual presentation of work of art and its receiving. Creation of art is a complex process taking place in the inner world of an artist. Many elements are functional there. Psychology and neuro science studies these processes; but so far we can not say much about what exactly happens here and how. Generally speaking, everyone is blessed with an eye for appreciation. A work of art is an external manifestation of an internal process. Artist uses mediums like color, lines, forms, sound, words, facial expressions and movement for presentation. This is how the work of art becomes available for appreciation. Appreciation is the spontaneous response to the work of art. It matures with time. Some also go ahead and become art analysts, reviewers, critiques. You must have read such analysis,

reviews or critique in the newspapers.

Let's talk!

Discuss Harry Potter as a novel and a movie with reference to different media.

An artist experiences different forms of nature, society and life with its peculiarities. He tries to face and understand the life and the world with all its multiplicity, diversity and peculiarity. He is in search of the essence of the experience. An artist experiences the nature of reality that remains untouched by scientific or utilitarian perspective. This experience is not confined only to beauty. Artistic awareness encompasses all the aspects of life, be it good - evil or even - ugly. Art becomes one's medium of expression of the meaning of these experiences. Thus artistic experience is never about just beauty. When art became an autonomous field it revealed the complexity of artistic experience and the

Some western thoughts related to art

Philosophers, right from Greek period till now seem to have engaged themselves deeply in discussions on art and beauty. What makes art possible? What is the motivation behind creativity? What is the nature of the work of art? What are the peculiarities of artistic creation? Philosophers and artists have tried to tackle questions like these.

Plato considered art to be imitation. Imitation as you know is a copy. Plato thought the work of art is an imitation of objects and happenings in nature. It is also an imitation of people and episodes in human life. Plato argued that, natural world is an imitation of the world of forms and man-made world is an imitation of natural world. Thus artistic creation is an imitation of imitation. If you want to know the true nature of the world, art is insignificant. In plays or epics, Gods almost mirror human

nature. Like humans, gods too envy and fight with each other. Such depiction would hardly create a respectable image of Gods in human minds. To nurture appropriate religious mindset, the image of god needs to be established as greater and superior. Humans will be inspired to act righteously out of respect and fear of god. Because of this ethical point of view Plato does not find the value of art appreciable. He thought that art should have no place in the education that a philosopher king would receive to make an ideal state.

Art was always discussed with reference to truth, knowledge and morality in Greek and even in medieval period. Effects and consequences of art remained the primary concerns while discussing the importance and value of works of art. After Renaissance; politics, economy and other fields became free from the clutches of religion. Art and ethics were not far behind in this process.

Artist and work of art became central to the process of art. The thought that art is an external manifestation of inner core of an artist started surfacing. This view is also known as expressionism. Croce's thought of art as intuition and Tolstoy's theory of art as communicative medium were the offshoots of the same perspective.

Croce thought art is not a rational act. It is the response of an artist to the world around him. Artistic response is often composed of abstract dynamic images. Art is pure. An artist uses different media to express this response. This, in a way, hampers the pure nature of art. Expression augments art with the help of craft and skill. Receiver can experience pure form of emotions through art. It is an enriching experience for the receiver. For Croce external manifestation of art is like

a bridge that connects artist and the recipient.

According to Tolstoy, beauty is not a central concept in the process of art. A work of art can be beautiful but beauty is not an ultimate objective of art. Art is important because art connects minds. Art appeals to the emotional world of humans. It brings people together through emotions. True work of art stands independent of space and time. It has a universal appeal. According to Tolstoy creation and appreciation have great importance in human life. Art is a distinctive aspect of social life. Excellent art work depicts, and should depict, values and struggles in human life and ways to deal with them. A work of art should have an appeal for every commoner. Thus Tolstoy describes art as a fundamental, universal act that communicates human feelings and ethical values.

need to evolve the criteria for the independent evaluation of art. Eventually, artistic analysis replaced aesthetic analysis and the branch of philosophy that was earlier called aesthetics is now recognized as philosophy of art.

In the beginning, creativity manifested itself through the creation of different tools, wares, implements. Initially these objects were quite rugged and rough. Later they started becoming more attractive, neat and well-made. Our ancestors used materials available in nature such as clay, stone, twigs, bones etc. to make these objects. In the course of time utility did not remain the sole motivation behind the creation. The concern with the attractiveness of objects, buildings etc. also started manifesting itself. They also made use of materials like stone, shell, ivory to make ornaments of different sizes and shapes. The walls of caves, houses, religious places were adorned with paintings and drawings. Man started making images of things found in nature.

The medium of art determines the classification of fine arts. The art forms that

create works which are primarily visual i.e. those which are enjoyed on the basis of visual sensations, are called as visual arts. Painting, sculpture, architecture are visual arts. Music, be it vocal or instrumental, uses sound as primary medium. We receive the sound. Thus music is sound or audio art. Word is a medium for literature. Words can be read as well as heard. Literature is not technically audio or visual. Words are not just signs on paper or just abstract sounds. They carry meaning. Words are symbols of meaning. Thus literature is also called as symbolic art. Some art forms use mix-media. For example, dance, drama, films are audio-visual forms of art.





Let's do!

Create a mind map of performing arts on the basis of different art forms, their sub forms or categories with the help of examples.

The medium of art also has a particular relationship with space and time. Notes and rhythm in music relate with time. Music is called as temporal art. Painting connects with space. Human bodies become primary medium in dance, drama, films etc. They have a frame of reference in space as stage backdrop etc. It also has a reference of time as a story unfolds in time. It connects past, present and future. Literature also assumes space-time framework. These art forms are called as spatio-temporal art.



Let's talk!

Discuss a work of art or a performance/creation that you have liked, in the class.

Objectives of art

Why art! The question has been discussed since time immemorial. Plato and Aristotle thought that art imitates nature or social life. According to this opinion art is an inferior copy of the real or natural. This imitation can be gross, macro and superficial as well as abstract, micro and capturing the essence. This opinion was held true even in middle ages. The post-renaissance thinkers believed that, art is an expression of the inner emotional core of an artist. Thinkers like Collingwood and Croce supported this opinion. In 20th century, Leo Tolstoy, a well-known Russian author and thinker stated that communication is the objective of art. According to him, art creates a global society through the communication of emotions, sensitivity and values.

Perspectives of art in Indian (Sanskrit) Tradition

Sanskrit literature has a rich tradition of discourses related to beauty and art. The tradition begins with Natyashastra, a text from 1st century CE written by Bharatmuni. The text elaborates upon play writing and performing with utmost details. Bharata has propounded a theory of Rasa and Bhava with reference to dramatics and appreciation. Rasa is an important and fundamental theory in Indian aesthetics. Bhamaha, in 6th century, put forth some important views on aesthetics that were applicable to literature in general other than drama. Bhamaha used the term 'Alankara' with reference to aesthetics in literature. Alankar literally means ornaments that augment the beauty of

literature. Bhamaha and Dandi both were the proponents of 'Alankarshastra'. Wamana adopted 'Riti' as an essential aesthetic element in literature and suggested that content and form both are equally important. He highlighted the thought that beauty of poetry lies not only in the content but also in its form. Anandvardhana is known for his theory of 'Dhwani'. It is the suggested meaning, as against the straight delivery of the message, that makes literature an art. Poet Magha uses the word 'Ramaniya' for beauty. The word implies novelty and entertainment. This is an essential element of art according to him.

Aesthetic thought in Sanskrit has a rich background of Sanskrit literature. Indian aesthetics also discusses the purpose or objectives of art. Bharata says, the objective

of art is two fold. First, it generates awareness about what is right and what is wrong and second, it entertains. Art generates awareness about what is right in an entertaining manner.

Bharata's Rasa theory proposes that, when actors convey the text and when both acting as well as the conveyed words are grand and appropriate, the whole experience culminates into 'Rasa', literally, juice. Receiver experiences 'rasa'. 'Rasa' is to be relished/enjoyed. Many art theorists took 'rasa' theory ahead after Bharata. Bharata proposed eight 'rasas' as - 'Shringar', 'Karuna', 'Hasya', 'Veer', 'Bhayanaka',

'Raudra', 'Bibhatsa' and 'Adbhut'. Abhinavgupta added ninth rasa as 'Shant' to this list.

Indian aesthetics also discusses a concept called 'rasa vighna' or the obstacles in artistic experience. Indian aesthetic tradition is rich with texts that systematically studies music, sculpture, architecture and other art forms. It is also proposed that all the art forms are inherently interconnected. (Do you remember the dialogue in Vishnudharmottarapurana that you studied last year? It was about the interconnectedness in various arts).

Artist tries to go beyond the superficial details of an experience and gets its essence or pattern. She thinks not only about the real actual experience, but also thinks about the possibilities of having experiences at the thought level. This is how art is a blend of fact and imagination, actualities and possibilities.

Art is an extremely important aspect of any society as it goes beyond mere fact finding, which is an objective of science, and putting knowledge to material use. Human potentials are expressed in various aspects of culture. Art grows alongwith the growth of culture. Social, political, economic conditions also affect art. Art is a component of culture that is connected simultaneously with both, tradition and changing times. It keeps the tradition alive as well as makes it dynamic and relevant for the present times.

It is extremely important for healthy society to have art that analyses and criticizes social conditions. Art also plays a pivotal role in shaping the emotional world of people. It sharpens and deepens individual awareness about oneself and the surrounding world. Art that enriches our experiential world, that makes us peep into ourselves, brings us joy, critically

analyses reality in the light of possible alternatives is extremely important for the holistic development of an individual and the society. Philosophy of art makes us aware about the nature of art, its functions and its relationship with religion and science. This awareness will guide us through our artistic journey to lead a good life.

The Scientific perspective

We have seen it in the lesson named 'What is cause' that the discussion of art mainly belongs to subjective and intersubjective category. Science studies objective reality. If that is the case, is it not a contradiction to talk about scientific thought related to art?

The reality is such that, even though many concepts in art do not come into the category of objective reality, there is a firm reason to say that art and artistic tendencies of humans are an outcome of evolutionary processes that shaped humans. A look at other animals will tell us that decorating is not confined only to humans. Birds build well-woven nests. It can be called as a biological instinct. However, some birds go beyond just weaving and decorate their

house. The male bower bird builds a gorgeous nest and decorates it with clusters of flowers, leaves, eggshells and other such things. How could a female not get attracted to such a 'beautiful' creation?

Apes, which are closer relatives of human species, also show a tendency to self decorate. It has been noted that chimpanzee female tried to adorn herself with ribbon and lace just like human female. Its very difficult to know what these animals must be thinking when they show such behavior, but its indeed a striking similarity.

Now let us look at our own species. What can be said about the objectivity in our likes and dislikes? Everyone's choice of favorite painting would be different, right? But have you ever observed what kind of paintings hospitals and clinics often display? You'll find out that majority of the times they are the paintings or photographs of beautiful landscapes or babies. Why this choice? Picasso's paintings may not have an appeal for everyone. Some would just shrug their shoulders and say, 'I don't understand much about it!' However, everybody 'understands', likes a painting that has natural scenery in it especially with a waterbody in it. Not only do they understand it, such views brings instant feeling of goodness with them. We may not feel the sensation vividly everytime but our brain notices it for sure. We now know this as a fact as our brain can now be connected with computer that enables us to see the inside of brain and the processes that are taking place in it. Hospitals and clinics have long been hanging nature paintings on their walls. They knew the truth even before brains were connected to screen. This is nothing but accurate observation of human nature.

Why is it so that natural landscapes and children's faces have so much appeal to nearly all the people in the world? The answer lies in our evolutionary past. It was vitally important for our ancestors to have abundance of water and food around them. The sight of waterbody,



gentle landscape, abundant vegetation must be pleasing them. The same is true about the paintings/photos of children. In the process of evolution only those could survive who were well taken care of by their parents. Thus it is understandable why the sight of children is appealing to most people. This is not without exceptions. There might be a few who get really very upset by the sight of a beautiful scenery. It's a trivial thought though. This triviality itself indicates a norm of human nature.

Science cannot stop at building a hypothesis alone. It needs an objective standing. It has to have a possibility of experimentation and verifiability. It should be able to explain every phenomenon that comes under its purview. There is very little in the category of scientific laws or principles that we have so far known regarding art. Not every artistic experience can be explained the way we understand our love for natural landscapes and thus our liking for paintings or photos of landscapes. We have very little information on how our sensory experiences and our neurotic responses were shaped by evolution. Amongst all the senses, human eye sight is perhaps the most studied one. Thus science can throw light on many things related to seeing. It is still a matter of an on-going research.

The summarise, we may say that before we lable artistic experience as entirely subjective or intersubjective, we must note that there is a possibility of finding some objective truth in it. Science has made us aware of such a possibility.

Let's talk!

An interesting observation: Majority of the people like the music they have heard in their formative age. The music that we have heard in childhood through radio, television, CD player or the music that we have heard in person has a deep impact on us. What happens when we as adults, get to listen to music of entirely new type? Does it attract us because of its novelty? Do we feel like listening to it again and again? Or do we find it simply not tolerable? Share your experience with others. Listen to their experience. Is there any similarity in your experiences?

Let's speak!

Conduct a seminar in your college on the subject 'Movies and us'. How does movie affect society? If yes, in what way does it affect? These points are important.

Natyashastra - नाट्यशास्त्र

Rasa - रस

Bhava - भाव

Alankar - अलंकार

Alankarshastra - अलंकारशास्त्र

Riti - रीति

Dhwani - ध्वनी

Ramaniya - रमणीय

Shringar - शृंगार

Karun - करुण

Hasya - हास्य

Veer - वीर

Bhayanaka - भयानक

Raudra - रौद्र

Bibhatsa - बीभत्स

Adbhut - अद्भुत

Shant - शांत

Vighna - विघ्न

EXERCISES

Q.1 Fill in the blanks choosing the correct option from the bracket.

- (1) experiences include natural and man made elements.
(Aesthetic, imaginary, divine)
- (2) In Indian Aesthetics Bharatha's idea of is fundamental and important.
(Rasa-bhava, Bhava-bhavana, Rasa-bhavana)
- (3) In Greek and Medieval period beauty was considered as quality of an object.
(subjective, objective, inter-subjective)

Q.2 Write the answers in 20-25 words.

- (1) Give two examples of aesthetic perspective.
- (2) What are the characteristics of aesthetic experience?
- (3) Give any four words that are used for 'beautiful'.
- (4) What is work of Art?
- (5) State important elements of process of Art.

Q.3 Write a short note on the following.

- (1) Plato's theory of Art as imitation
- (2) Types of Art
- (3) Indian views on Art

Q.4 Discuss in detail the nature of Art.

Q.5 Explain various Western theories of Art.

Q.6 Write a dialogue on the following.

Write a dialogue between an Artist and Appreciator considering whether the Aesthetic value is objective or not.

Activity

Interview an Artist from your locality. Try and understand how his emotional world and life experiences are enriched through Art.

☆☆☆

7. Science, Technology and Philosophy

- Introduction
- Awareness of awareness
- Man and nature :
Philosophical perspectives
- Historical overview of the Man-Nature relationship
- Technological processes and their effects on human societies
- Biotechnology and some important issues

Introduction

Science is the study of the laws of nature. Technology is the art and science of using body energy (the energy acquired from food) or energy from external sources (such as biomass and fossil fuels) to process available materials in nature (like stones or soil) for better security, comfort and entertainment. From the human point of view, this processing of materials is at the expense of **effort** and **harm**. What is the role of philosophy with respect to science and technology? Philosophy studies the nature, function, methodology and objectives of science and technology with respect to human beings and nature. We have studied this last year.

We use technology. We also hear discussions about the creation, spread and effects of technology. Some say technology will solve all our problems, while others say that technology is the source of our problems and so we must distance ourselves from it. But what does distancing from it really mean?



What does science say in this regard? What is the relationship between science and technology? What role does philosophy play with respect to this relationship? We are often confronted by questions like these. We are going to discuss some of these questions in this chapter. We are also going to peep into history while doing so. We will see how technology has shaped human society. If we look at the living world around us, we realize that humans are the only species which uses technology that requires external energy sources on a massive scale. How has this become possible? What makes us different from the rest of living world?

Awareness of Awareness

We use technology and we also talk about its pros and cons. We can do this because we believe that we possess something that other animals do not have and that is the awareness of awareness. Other animals might be aware or conscious but do they have the awareness of awareness? What is it that we call the awareness of awareness? We experience sensations, we think. Not only that, we can think about sensing as well as about thinking itself. We can bring about changes in our thoughts and actions consciously. That is the awareness of awareness.

Activity

What is awareness of awareness? Let us take the example of shopping. We think about going shopping. We can also think about the thought of shopping. We can contemplate, why am I thinking of shopping. Do I really want to go? Or is it only because I see others going? What will happen if I don't go shopping? What will happen if I do? etc. This list can go on and on. What comes to your mind when it comes to shopping? Discuss.

Do other animals think? Are they also capable of thinking about thinking? If we consider the capacity to bring about deliberate change as an indication of the awareness of awareness, do we see it in other animals? Maybe because it is not so, we often find animals rebelling in fictional stories only. What do we see if we apply the same principle to human beings? Why is it often said that human beings have herd mentality? What is your personal experience about deliberate change?

Let's read!

Come, Let us get and read the book 'Animal Farm'.

Plants and animals might not be creating technology, but perhaps they would have liked to at least discuss what human beings are doing with technology!



We cannot say objectively what other living beings must be feeling about the change, mankind has brought about in the environment with technology. We believe that they do not have the awareness of awareness. However, we think about their wellbeing or at least show readiness for the same. We can

think about nature including human beings, other living beings and their physical environment as a whole. This holistic approach shapes our philosophical perspective. Philosophy studies the relationship between man and nature.

Man and Nature - Philosophical Perspectives

Human beings were just like other animals at the beginning of the journey of evolution. They used physical energy generated from consumed food to obtain food and raise their young ones. In the process of using technology, human beings, in a way, got separated from the rest of nature - they became superior. From the way we human beings think about ourselves, nature and our relationship with nature, three different perspectives emerge - anthropocentrism, biocentrism and ecocentrism. There are several interpretations of these views. Let's see some of their broad salient features.

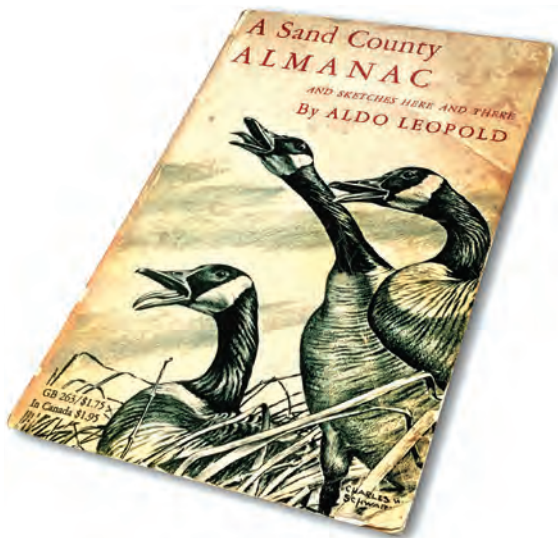
Anthropocentrism is the view that believes that all of nature exists for the sake of human beings. This consumption by human being can be of two forms. One, without thinking much about its consequences on the self and the rest of nature; and the other, with the understanding of its consequences.

Biocentrism believes that other living beings also possess sentience as human beings. They have an equal right to life as human beings do and human beings ought to avoid any act(s) that can harm other beings. This thought is found in some cultures and religious traditions.

Ecocentrism looks at human beings just as a part of nature not isolated and certainly not superior. It holds the view that human beings, if they have the capacity to interfere in or influence the ways of nature, they, ought to do so with utmost care. Processes and interactions within living and non-living elements in nature occupy a central place in

ecocentrism. As far as human knowledge goes at this point in time, the living world found on our planet is unique. The non-living world has shaped the living world and the living world constantly interacts with the non-living world. According to ecocentrism, humans ought to act with due awareness of this.

The historical and cultural journeys of mankind reflect all of the above-mentioned perspectives. Religions and traditions reflect these points of view. We are familiar with some of these perspectives. For example, certain tribal communities pray to a tree and ask for its permission before cutting it down. This implies responsible attitude towards nature. It is important to note that no religion encourages unlimited and unrestricted exploitation of resources. From this perspective, the role of religion is to help human beings, put a brake on uncontrolled consumption. Nevertheless, every religion and cultural tradition has its own unique characteristics.



Historical Overview of the Man-Nature Relationship

Historical evidences reveal what stone age man must have believed about himself and the rest of the living world. Ancient cave paintings, archaeological excavations and research about communities living in remote

areas tell us that man used to have different perspectives about nature distinct from ours. Early human beings must have had curiosity, fear and respect towards nature's forces. For them, rivers, mountains, rain and trees were powers. They probably felt that it was their duty to please these powers.

The domestication of plants and animals marked the beginning of Agricultural Age. As this domestication became possible, the idea that these beings are the property of humans found secure roots. Humankind must have started thinking of themselves as the superior masters of these beings. However, this trend too had exceptions in many places.

Let's speak!

Discuss the various religions and cultural traditions, with reference to above-mentioned three perspectives in your class.



Let's think!

Review the ideologies influenced by the thinking that considered oneself as master or superior.

Eventually, the awareness that man is an equal part of this world - and not its master or superior as other species too have sentience - spread, especially in the western world. Thinkers like Aldo Leopold and Albert Schweitzer were the pioneers of this belief system. They proposed that man is indeed conscious, but the sphere of this consciousness

can keep expanding to encompass the living world in its entirety.

Religion forbade human beings from carrying out the uncontrolled exploitation of nature. It also provided guidelines for acceptable and unacceptable conduct. Analyzing the appropriateness of a given action in the light of the laws of nature is an alternative methodology to achieve the same goals. Science deals with objective reality. Objective reality remains unchanged in spite of some individuals disbelieving it. Thus, it is very important to understand the laws of nature in order to deal with the problems in objective reality.

For example, Boyle's Law or Charles's Law help us predict the weather. They can warn us of a possible cyclone. Precautions can then be taken to reduce or avoid harm. This is how these laws help us. There are other such laws, too. For example, consider the Law of Conservation of Energy and Matter. This law tells us that it is impossible to create something from nothing, like pulling a watch out of thin air. Our individual and societal health depends upon our ability to use these laws for identifying appropriate actions. Actions and experiments carried out in ignorance of such laws can create dangers for individuals and societies.

Lysenko's 'experiment' : Trofim

Lysenko was an agriculture researcher in Russia. He rejected Mendel's theory of genetics. He insisted that if one 'trains' wheat saplings to withstand cold weather, their progeny will also be cold resistant. Accordingly, Lysenko sent billions of wheat saplings to be 'educated' in Siberia. Obviously, his experiment failed. It did not produce the promised yield. This was around 1935. The Soviet Union was soon forced to import large quantities of wheat from the United States. This illustrates how one can invite calamities if one undermines objective reality - in this case, the theory and law of evolution and genetics.

People fall prey to false promises such as 'doubling the gold.' Development projects often talk of zero waste in their advertisements. In truth, if any matter is being processed, residual matter or by-products are unavoidable. When these by-products are unwanted, they become 'waste.' If we do not want waste, the only alternative is to avoid its creation by avoiding production of goods. Recycling also generates waste. Technocrats struggle to develop a machine that would keep running using on its own energy or a 'perpetual motion machine.' But the study of the laws of nature tells us that such claims are highly improbable.

Scientific thinking may have been a part of people's psyche for a long time. However, science as a collective enterprise began only recently in the history of mankind. The world of science today tells us that science is not something one engages in alone. What is more several people come together, conduct experiments, verify results and create equipment for experiments. In this way, science is a collective effort to understand objective reality. Even so, making our daily decisions about what we ought/ought not to do in the light of the laws of nature, is not a very common practice yet. It is still a new terrain.

Some would say that it is not appropriate to expect science to give us behavioural norms and guidelines. Science merely describes the laws of nature. It is neutral about what one ought or ought not to do. However, if we can't obtain any insights from scientific principles, what are we gaining? Setting behavioural norms may not be a primary task of science. However, it is important to discuss laws of nature in the light of ethics. In fact the linkage of these laws with conduct falls in the purview of philosophy. But drawing conclusions regarding appropriate action is not always easy. It may not be as straightforward as concluding, 'Avoid entering the deep sea in cyclonic conditions.' Sometimes it takes great effort to

see a larger, coherent and inclusive picture. Many disciplines need to be studied together. Their methodologies and overall objectives need to be verified from time to time. The journey of science takes place in historical setting. It is embedded in a given culture and society with their economic dimensions. Philosophy studies all of these aspects together. Let us try to see some pertinent problems in science and technology and how philosophy analyses these issues. Let us begin by examining how technology affects human societies and how it has shaped them historically.

Technological Processes and Their Effects on Human Societies

Humans tried their hand on matter that is readily available in nature. They tried to make use of non-living resources like stones, soil, fossil fuel, ores as well as living matter such as plants and animals and continue to do so even to date. The stone tools, that ancient humans created, was technology and the lunar spacecraft we recently launched is also technology. (In the case of living matter, agriculture is technology and so is cloning.) There is a similarity in all these examples – the need of processing. A stone tool does not create itself and neither does a spacecraft. Agriculture does not happen of its own accord and neither does cloning. All of these require processing matter that is available in nature. The technological processes required for such endeavours may be very few or innumerable.

Processing entails certain effort. If need be, one has to be prepared to bear the cost of harm also. Harm can be physical and/or mental.



Let's talk!

Look at the variety of people around you. How many professions/jobs are they engaged in? Of what nature? Their jobs/professions may seem distinct but are they not connected to one another in some way? Discuss in the class.

Before fossil fuel driven industry came into existence, people were engaged mainly in muscle-powered agricultural activities. In Maharashtra, this set of professions was called the 'Bara Balutedaari'. Outwardly, these professions seem distinctive. However, they are all joined by common thread of agriculture. Likewise in current times, jobs and professions - be they connected to trade, locomotion or goods and services - share the common thread, that is, fossil fuels and technology based on it.

Imagine hunter-gatherers in the pre-agriculture era. They must have been obliged to collect proper seeds, prepare and clean land for sowing, sow the seeds etc. From where did they obtain bodily energy for these operations? From food available in nature in the form of fruits, roots, hunt/prey etc. We need roughly 2000 calories per day to survive. Only if the energy obtained from cultivated food is greater than (or at least of the same quantity as) the energy used to cultivate it, it will be a profitable deal. In reality, however, this never happens. Energy put in or invested for food production is always greater than the energy gained from farm yield. This is true not only about farming but also about every process in any given technology. The reason is the law of science called 'Entropy.'

Imagine you are in 2,00,000 BCE. There are very few human beings and they are scattered all over the planet, living in small bands like other apes. But they can now create and sharpen their stone tools better than before. They can now make a composite

Goods and services tie people together. Goods and services today are solely dependent on electricity. We use electricity on a massive scale. Electricity is the backbone of industry and indirectly, of our lives. Electricity is generated mainly by burning coal or diesel. It takes great number of processes to convert heat into mechanical, electric and other forms of energy. Manufacturing of goods involves a large number of processes, too. Here is a non-exhaustive list of these operations and processes-

- Locating resources - crude oil (wells), coal, ores (mines), wood and other organic matter (forests and plantations) - and assessing quality and quantity for their intended use.
- Creating infrastructure for the extraction and transportation of resources and setting up fuel processing units (refineries or coal-washing and grinding etc.)
- Transporting ready-to-use fuel and providing storage facilities for the same or generating electricity and transmitting it up to the place of utility.
- Machinery, tools, vehicles, equipments,

gadgetry and instruments are required for all the above processes and operations for making and running them, up-keep and maintenance and for safety and health measures etc.

- Disposal of the waste generated, environmental protection and peripheral services such as management systems, finance, communication, research and development (R&D) and human resource management (HRM).
- Uncertainty of consequences increases with complexity of technology. The list of uncertain effects and consequences lengthens due to errors, failures, redundancies, accidents and calamities. By-products of technological processes saturate around us in the form of excess heat, pollutants, ash, slag, rubble, garbage, rubbish and scrap. They affect our environment and harm us directly or indirectly.
- Since coal, crude oil and minerals are not found in equal quantities everywhere on our planet, rivalry breeds among nations.

tool of stone and wood and use it like an axe. These are all processes. Every band might have a few individuals who are better at these tasks than others. But everyone has basic knowledge of how tools are made, men and women alike. Those who excel might be getting a bigger work load than others but they may also be getting rewards in the form of a handsome share in hunted or gathered food. There is probably not much of a difference in efforts, skills and physical/mental harm.

Then language emerged some seventy thousand years ago. Language is also a technology in which vocal cords and bodily energy are used to produce meaningful sounds. This technology enabled humans to associate more and better. This development made it possible to have meaningful dialogue and cooperation possibly even among

strangers. Human beings could describe and narrate more effectively and could also put their intentions into precise words. This helped their bands prosper by increasing in size and number. With the help of the technology of language, human beings became more powerful than other creatures.

About ten thousand years ago, agriculture and animal husbandry started. This was perhaps the most important change in the history of mankind. There were several processes involved in agriculture. It demanded experimentation on different plants, leveling land, safeguarding crops, storage, use and many other such processes. This list can be quite long. This led to the unequal division of labour, skills and physical and mental harm. That ultimately gave way to social hierarchies. Agriculture was mainly sustained on the muscle power of slaves and the beasts

The Law of Entropy

In scientific discourse, this law states that the entropy of the universe is always increasing. The universe is made up of particles. These particles are continuously dispersing from each-other or scattering. Let us consider a few examples of this law in everyday life. Have you ever been around a campfire at a picnic? You must have gathered wood for lighting up the fire, kindled the fire and sung songs and told stories sitting in the warmth of it. The fire provided you with heat and light. But you must have also seen the smoke it generated and the ash that it left behind. You had not wished for smoke or ash but it was still there. This is a result of the law of entropy. Can you ever say that you want only fire and not the smoke or ash that remains? Also, the smoke does not remain at one place but gets dispersed in the air. This is also a result of the law of entropy.

Ice melts, a hot cup of tea eventually gets cold and iron rusts... all of these are examples of the same law.

Let us see how this law is applied to technology as a whole. If you have heard about any technology that claims to give back more energy than what it consumes in generating this energy, you can be rest assured that this is a false claim because the law says that this is highly improbable. Technology inevitably means processing. We need either food-generated energy or other external energy sources to make processing possible. The law of entropy states that input is always greater than output. Thus every technology is inherently insufficient. Losses are of different types not always just monetary. Loss in technological processing means the creation of by-products you are unable to use. When we burn wood, the result is not just fire. Smoke and ash are also generated. When we drive a petrol/diesel-vehicle, we

get our vehicle going but smoke and suspended harmful particles also get generated.

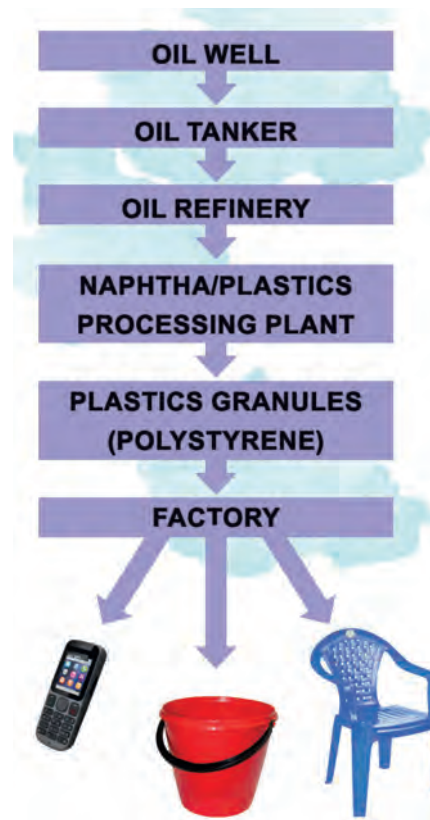
Solar, wind and other such sources are considered as clean sources of energy. However, we need devices to harness energy from these sources. If the source of energy is in a stage of higher degree of dispersal, it takes a huge measure of energy to create, run and maintain the harnessing device. Windmills, photovoltaic cells and other such devices are always extremely inefficient. One windmill can never generate energy enough to make another windmill of more or equal capacity. Entropy law does not allow that. Since it is a law of nature and not a man-made law, it cannot be amended in any court. It is because of this law that our natural environment is as it is. Denudation of mountains, soil erosion, water evaporation, widespread rainfall, rainwater and the water from melted glaciers flowing to lakes and sea through streams and rivers and burning of any matter are all the examples of this law. Therefore, the question of why these laws exist is inappropriate. If we are attuned with them, we are in a better position to reduce the uncertainty in our lives. Uncertainty increases with complexity in technology. Losses increase too and the blame for this has to pass on someone or the other. Agriculture, too, is technology and has brought about unprecedented changes in social structure. Who bears the losses induced by agriculture technology? Ecosystems, slaves and farmers bear them. This technology changed the perspective towards women. As the idea of the ownership of women took root, women came to be viewed merely as the bearer of the heir to the property. The root cause of this perspective change was technology and the law of nature was a fact that remained hidden.

of burden. It was like a cycle, growing food and using the energy generated by that food to produce more food. It brought huge changes in the role of men and women in survival and reproduction. Slavery emerged as a system to deal with the dirty, dangerous and difficult jobs that the agricultural technology created. These shifts are a result of the inherent nature of this technology.

The ‘technology express’ gained more speed during the metal ages. In India, the first and second civilizations are the benchmarks of the metal ages. Cities of the Harappan Civilization often had simple houses as well as citadel-like structures. Artifacts found in homes and burial sites reveal the wealth status of the people. The following course of history reveals a story of increasing hierarchies and inequality within the society. The nature of technology and technological processes is at heart of this change.

We saw the emergence of steam engines and electricity in the 19th and 20th centuries. Technology became ever so complex during this period! There was an escalating rise in the number of steps involved in processing. As a result, more and more men and women were tied to the kind of lives that technology offered. It became their way of survival, just like how people in the agricultural era got accustomed to survive with cultivated and cooked food. Not just accustomed, they could no longer live without it. Likewise, the discovery of electricity greatly shaped people’s lives. It now seems as if we would not know how to survive without it.

The ecology and environment of our planet were also affected in the way this transition affected the lives of people. We have been discussing the environmental problems of the planet such as climate change, global warming and desertification since our school days. Now we understand that the root cause of all these problems is the nature of technology.



Different people react in different ways to the relationship between man and machines. Some say, we must hit the breaks on unending intervention; while others say newer technology will find answers to the problems created by old technology. What do we mean by stopping the intervention?

We cannot say much about why human beings made the first stone tools or sowed the first seeds. This journey continues till the complicated machines in present times. We can describe the process behind technology, but we cannot say why we took it up.

Human beings were just like other animals in the beginning. Why did they feel like experimenting on objects in nature? Were they fully aware of the consequences of their intervention? We cannot say yes! Sudden changes in organisms are described as ‘mutations’ in evolutionary biology. They need not have any particular objective or direction.

This does not mean that intervention will always take place only in a harmful way. As we become more and more aware of its consequences, we can bring appropriate



If losses are inherent to any given technology, does that mean that we should never use it? It would be a farfetched statement. Technology has helped us significantly for safety, comfort and entertainment. Technology should certainly be used to create equipment and tools that are suitable to our physical and mental abilities. Appropriate technology that entails minimum losses and doesn't externalize losses to create social problems is possible and available.



Rainwater harvesting tanks



Discuss

Large dams are an example of complicated technology. Harvesting rainwater for domestic use is an example of soft technology. Discuss more such examples in the class.



changes in the nature of technology. As we have seen, human beings are animals that have the awareness of awareness. This implies that they can bring about deliberate changes in their behaviour. If so, we can become aware of the possible consequences of disruptive technologies and can put technology to human-friendly use by recognizing its fundamental functions. However, all the individuals in a given society do not adapt to change alike and at once.

Discuss

Do you remember the story about four friends and a dead lion from the Panchatantra? It is a story of three 'learned' men who decide to show off their knowledge when they find a heap of bones in the forest. Recall what their fourth friend has to do as he sees the lion about to spring to life. Is he able to make others see it and stop them from performing the act? Or does he finally make a choice just for himself?

The last century saw massive growth in the scale and speed of technology. However, its impact was not similar in every part of the globe. Natural and cultural contexts of particular regions played important roles in the spread of the technology. The invention of electricity and its wide use was a phenomenon in the temperate climatic zone. The technology took its time to spread to the tropical zone.

Since this new technology did not emerge in tropical countries like India, we see that largely, people are unaware about the nature of technology and its possible harms. Our attitude towards vehicular safety and traffic rules exemplify this fact. Initially, it was in the colder regions that vehicular technology emerged and spread. People seem to be self-disciplined with reference to technology in these regions. General observation suggests that people do understand the pre-conditions of using technology. Their behaviour on the streets is in congruence with the rules of road-safety.

Where there is complete lack of awareness about nature and effects of technology (in this case, road and vehicles) and carelessness towards the safety of one's own self and the safety of others, we need stringent laws and education. We experience such lack of awareness regarding technology

around us and also witness the effort to deal with it through laws, regulations and education.



Let's speak!

Discuss your experiences regarding vehicle safety and traffic rules in the class.

Information Technology that emerged in the latter half of the last century is firming its grip on all regions regardless of geographical location. In comparison with other technologies, Information Technology has made its existence known in all the parts of the globe within a very short span of time. This technology is about storing data in computers and putting it to use through various algorithms. Initially computers were as big as the size of a room. Now they are around us in many different forms and sizes. A computer is not just a desktop or a laptop. It is any machine that can compute. We live in a tight web of Information Technology. These days, computers perform many jobs that were earlier done manually by humans. Robotics and Artificial Intelligence (AI) are the most advanced forms of the same technology.



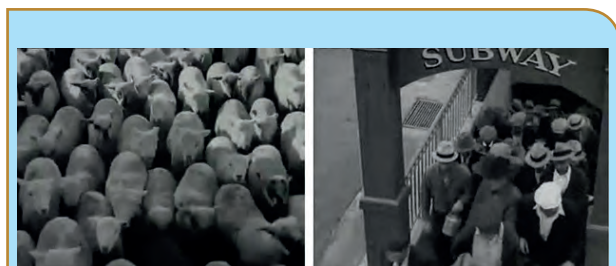
Let's Read!

Collect information about Information Technology and read its history

From the philosophical perspective, it is important to know how Information Technology is influencing human life?

Life has been surviving on the planet for nearly 3.5 billion years. The human race has a history of almost fifty lakh years. It is in the last ten thousand years that human beings have learnt to exert control over other life forms, that is, domesticate them and keep hold on them for selfish use. Human beings

could do this by using their intelligence. Compared to large and ferocious wild animals, human beings did not possess much physical strength, venom, sharp nails or any other such defense mechanisms. The reason why they could rule the living world without any of these tools or mechanisms is their intelligence. Likewise, what would machines do to human beings with the help of their superior intelligence? Philosophers and thinkers are struggling with this newly evolved problem.



This is an image Charlie Chaplin used in his well-known film, 'Modern Times.' It clearly suggests that there is no difference left between human beings and sheep. The computer was yet to be invented then. What will happen to people in present times? They will not be jobless perhaps, but would the work be satisfying to their tastes and abilities? These are some of the most pertinent problems of current times.

When we talk about intelligence, we mainly refer to memory and computational abilities. We call a person intelligent when he/she stores a large quantity of information in his/her head and is quick in processing the stored or grasped information. Carbon is a crucial element in all the living species. Human beings are living beings so let us call them 'carbon life.' Silicon is the crucial element in computers. Thus, computers can be called 'silicon life.' Even though human beings invented computers, they (the computers) are far better than their inventors owing to their capacity to store and process data. On the parameters of range, bandwidth,

memory, speed, accuracy and flexibility, silicon life proves to be far superior to carbon life.

Looking at the speed at which Information Technology has spread, it is not difficult to imagine that mankind will be totally dependent on this technology for survival. There is the pervasive fear that most of our actions and decisions will be dictated by technology and we will be subservient to it. The silver lining is that we can identify potential threats and can also protect ourselves from getting carried away.



Let's talk!

Discuss in group about the problems created by information technology.

Let us ponder upon our experiences in the new technology era. We live in a world that is abundant in products, gadgets or goods but they are not all available to everyone in equal quantities. Moreover, we do not have complete freedom to use the gadgets that are available to us. For example, mobiles or smartphones. They are available in large quantities but they are not all affordable to each one of us. The ones that are available also come with risks we are unaware of. Every now and then, we come across a news of students getting carried away with smartphone games and lose focus from their studies. Sometimes, they even lose the ability to differentiate between the real and the virtual. They find it difficult to communicate with real people of flesh and blood and prefer to chat online from behind screens instead. Some unfortunate ones also lose their lives because of particularly dangerous online games. Why does this happen? We must peep into our own inner selves to understand this. We need to know how our brains and bodies function.



Let's watch!

Watch movies based on the themes of ill-effects of mobile and technology. For example, Hindi movie '2.0'.

Biotechnology and Some Important Issues

Today, technology does not just provide the means to create goods or things. It goes beyond that and also lets us make changes inside living bodies - changes that were beyond human reach just a few decades ago. With the help of evolutionary science and biology, we now know, how life emerged on our planet. We know how plant and animal life (including microorganisms) flourished. We understand how they function. This same knowledge allows us to bring about changes in the life living on the earth.

Biotechnology is the knowhow that puts biological theories, processes, systems and organisms into practical/commercial use. Biotechnology enables us to use microorganisms, plants and animals for agriculture, human health, medicine and other fields important to human life. There is growing fear that the way biotechnology is progressing, unless used thoughtfully with utmost care, it will invite serious problems and calamities in our future. We already witness genetically altered living beings, the use of stem cells in medical treatment, cloning and other such technological advances. Their growing use can create enormous social and ethical issues.

Analyzing the relationship of humans with other species, with the members of their own species and with their own selves is a task of philosophy.

Bioethics is the branch of philosophy that studies ethical perspectives and actions towards other organisms. Medical ethics is a sub-branch of the same field. Ethical thought behind

medical research and conduct is the subject matter of medical ethics. Health and wellbeing, healthy lifestyle and affordable treatment for all sections of society are the main concerns in this field today. While we are still dealing with these challenges, mankind is also in search of immortality and eternal happiness. As of now, these goals seem to be distant horizons. However, that is the direction we are moving in. There is no promise that this would be an achievable goal for all. It would mean that the rift between the 'haves' and the 'have-nots' would be ever increasing. We are allocating our available resources to achieve these goals. Therefore, a concern has emerged: For what are we actually spending resources and for whom? We will have to be aware and attentive all the time of the kind of living that is being shaped with the help of biotechnology and information technology together, for our own sake and that of posterity.

The study of philosophy allows interdisciplinary thinking. It enables us to see a larger and coherent picture of our society. To engage in such thinking, it is crucial to understand the rigor and methods of philosophy effectively. This will make philosophization possible in present time.

Technology made its mark nearly on every field of life. Economics, politics and social life changed along with technology. Religion, literature and art, law and order, finance and industry were also not an exception to this process. Digital age brought revolution. It also generated new problems and issues. Philosophy studies such problems and issues. As a result different branches of philosophy develop such as social philosophy, political philosophy and philosophy of economics.

EXERCISES

Q.1 Fill in the blanks choosing the correct option from the bracket.

- (1) perspective considers that the whole universe is for our consumption. (Bio-centric, Human-centric, Eco-centric)
- (2) is the characteristic of scientific knowledge. (Objectivity, Subjectivity, Inter-subjectivity)

Q.2 State with reason whether the following statements are true or false.

- (1) Human being has awareness of awareness.
- (2) “Other beings have consciousness like humans”, is humancentric thought.
- (3) Recycling also produces waste.
- (4) When the complexity of technology increase the uncertainty of consequences increases.

Q.3 Write a short note on the following.

- (1) Human and nature relationship
- (2) Lisenko’s experiment

(3) Changes brought in human social structure by technology.

(4) Risks related to information technology.

Q.4 Explain in detail how technological development has affected human society.

Q.5 Explain the process of production of objects services and its effects.

Q.6 Write a dialogue on the following.

Write a dialogue on the usefulness of technology to lead a good life and harms it causes.

Activity

Visit any factory or small scale industry in your area. Try and understand the production process and its effects on environment.

☆☆☆

E-learning material for the Standards I to XII

Available in Marathi and English medium



ebalbharati

Features

- Inclusion of prescribed subjects as per subject scheme.
- Complete E- learning material based on textbook
- In the form of audio-visual
- Presentation of chapterwise content and inclusion of questions as per necessity
- Inclusion of various activities, pictures, figures/diagrams, etc.
- Use of animation for easy and simple learning
- Inclusion of exercises.

E-learning material (Audio-Visual) for the Standards One to Twelve is available through Textbook Bureau, Balbharati for the students of Marathi and English medium.

For purchasing E-learning material...

- Register your demand by scanning the Q.R. Code given above.
- Register your demand for E-learning material by using Google play store and downloading ebalbharati app.
- Visit the following websites of the Textbook Bureau.

www.ebalbharati.in

www.balbharati.in

What is the relationship between science and life?
What is the universe? What is it's nature?
Who am I?
What is the philosophy of art?
Where will technology take us?
What is a Cause?
What is technology take us?
Where will technology take us?



Maharashtra State Bureau of Textbook Production and
Curriculum Research, Pune - 411004.

तत्त्वज्ञान इयत्ता बारावी (इंग्रजी माध्यम)

₹ 68.00