

36. KNOWLEDGE TRADITIONS AND PRACTICES OF INDIA

(Code No. 073)

Rationale

The "Knowledge Traditions and Practices of India" has been introduced as an elective subject at the Senior Secondary level w.e.f. 2012-2013 in class XI as a pilot and introduced in all schools w.e.f. 2013 in classes XI and XII. After ten years of general education, students branch out at the beginning of this stage and are exposed to the rigours of the various disciplines for the first time. This is the stage when they are made to start reflecting over their future life and decide on a career. At this point, they also become aware of certain knowledge traditions and practices of India that are being followed in their families and society around them but few students get an opportunity to lay hands on the vast treasure of knowledge that lies hidden in the form of literature or books.

This course aims at providing a broad overview of Indian thought in a multidisciplinary and interdisciplinary mode. It would not seek to impart masses of data, but would highlight concepts and major achievements while engaging the student with a sense of exploration and discovery. It would be an introductory course so that students who take this course are prepared for a related field in higher studies in the universities. The course will cultivate critical appreciation of the thought content and provide insights relevant to promoting cognitive ability, health and well-being, good governance, aesthetic appreciation, right values and appropriate worldview. The course will therefore comprehensively deal with the all-round personality development of the students and increase their knowledge about their country.

Concept of the Course

The knowledge traditions of India are continuous and cumulative. They are textual and exegetical traditions in different areas of thought and experience: philosophy, medicine, grammar, architecture, geography, literary theory, polity and political economy, logic, astronomy and mathematics, military science, metallurgy, agriculture, mining and gemmology, and shipbuilding, among others. Concepts and technical vocabularies of these traditions are still a part of the thinking and the languages of modern India.

The tradition is also non-egocentric. The 5th century philosopher of language, Bhartrihari, states in his *Vakyapadiya*, a cardinal principle of knowledge constitution: "The intellect acquires critical acumen by familiarity with different traditions. How much does one really understand by merely following one's own reasoning only?" (Bhartrihari, *Vakyapadiya*, II.484). The traditions are therefore, intrinsically polycentric; Indian thinkers have constantly engaged in internal debate and dialogue and have also interacted with traditions outside India.

Aims and Objectives of the course:

Students will be able to:

- get familiar with Indian thought in different disciplines.
- get familiar with major Indian thinkers in different disciplines.
- get familiar with the primary texts of Indian thought through an organized study of short extracts in translation of those texts.
- develop a better appreciation and understanding of not only the knowledge traditions and practices of India, but also of many contemporary questions and issues that they handle in their course work in related disciplines.
- enhance self awareness and self-esteem.

Specific aims:

Students will be able to:

- get familiar with the nature of Indian texts.
- read primary texts from various sources and will be able to collect information and develop their critical abilities.
- relate the knowledge to present context.
- develop a positive attitude towards Indian thought and traditions.
- compare and contrast views given in the units and develop interest in the authentic texts.
- internalise the given knowledge and pursue it further in their courses of studies by gathering more information about thinkers and texts.
- interpret and analyse texts of different kinds and express it in their own language.
- understand the contribution of Indian mind in various fields.
- relate ideas of various disciplines with western thought they are otherwise introduced to in their course work.
- develop a wider understanding of how all knowledge is ultimately interrelated.
- read and know the history of Indian literatures.
- pursue further study in related fields.
- paraphrase the ideas of primary text in English or Hindi.

**Knowledge Traditions and Practices of India
Examination Specifications
Class - XI (2016-2017)**

One Paper

70+30 = 100 Marks

Section-wise Weightage of the Paper

Time: 3 Hours

Section	Areas of Assessment	Marks
A	Reading Skills	
	● Two passages from the textbook	20
B	Analytical Skills	
	● Two passages for comparing/contrasting relating to the present time.	10
	● One out of three long answer type questions	15
C	Thinking Skills	
	● Five out of six short answer questions	15
	● Ten objective type questions based on Multiple Choice Answers	10
D	Research based Project/Portfolio Assessment + viva voice	20+10=30

SECTION - A
READING SKILLS - 20 MARKS

No. of periods: 60

- Q.1 Two passages from the modules with a variety of questions on different levels of comprehension, i.e., to test literal, interpretative and inferential skills. The total range of two passages would be about 700 to 800 words. 20 marks

SECTION - B
ANALYTICAL SKILLS - 25 MARKS

No. of periods: 60

- Q.2 Two passages extracted from different modules for comparing and contrasting and relating the ideas contained to the present time. 10 marks
- The length of both the passages together should be about 600 words.
- Q.3 One out of two long answer type questions based on the knowledge of the content to test the insights gained and whether the knowledge has been internalised. 15 marks

SECTION - C
THINKING SKILLS - 25 MARKS

No. of periods: 60

- Q.4 Five out of six short answer type questions based on the survey sections in the modules.
(Word limit 30-40 words) 5 x 3 = 15 marks
- Q.5 Ten objective type MCQs to test global and local understanding of the text. 10 marks

SECTION - D
RESEARCH BASED PROJECT/ PORTFOLIO ASSESSMENT + VIVA VOICE

20 + 10 = 30 marks

No. of periods: 40

The textbook has inbuilt suggestions and activities for the students to prepare a portfolio or undertake work on a research based project. The purpose is to make students exhibit their efforts and achievements in one or more areas. It is expected that schools organise visits to the traditional seats of learning, historical places, cultural hubs and authentic areas. The project will be assessed through a viva voce also which carries 10 marks out of 30.

Students will be expected to compile and collect material for the project/portfolio which would be assessed on the following points:

- **Presentation:** efforts put in, meaningful material with aesthetic sense.
- **Variety of content:** a wide variety of content in the form of audio visual media, extracts from journals, art work, conference updates, photographs, writing samples, maps, charts, extracts of interview and reading logs etc.
- **Organisation of material collected has been presented with cogency and coherence.**
- **Clarity of understanding and good judgement to test internalization of knowledge.**
- **Viva voice**

Prescribed Books:

A textbook on Knowledge Traditions and Practices of India Part - I published by CBSE 2012-13.

Knowledge Traditions and Practices of India
Examination Specifications
Class - XII (2016 - 2017)

One Paper

70 + 30 = 100 Marks

Section-wise Weightage of the Paper

Time: 3 hours

Section	Areas of Assessment	Marks
A	Reading Skills	
	● Two passages from the textbook	20
B	Analytical Skills	
	● Two passages for comparing/ contrasting relating to the present time.	10
	● One out of three long answer type questions.	15
C	Thinking Skills	
	● Five out of six Short Answer Questions	15
	● Ten objective type questions based on Multiple Choice Answers	10
D	Research based Project/ Portfolio Assessment + viva voice	20+10= 30

SECTION - A
READING SKILLS - 20 MARKS

No. of periods: 60

- Q.1 Two passages from the modules with a variety of questions on different levels of comprehension i.e. to test literal, interpretative and inferential skills. The total range of two passages would be about 700 to 800 words. 20 marks

SECTION - B
ANALYTICAL SKILLS - 25 MARKS

No. of periods: 60

- Q.2 Two passages extracted from different modules for comparing and contrasting and relating the ideas contained to the present time. 10 marks
- The length of both the passages together should be about 600 words.
- Q.3 One out of two long answer type questions based on the knowledge of the content to test the insights gained and whether the knowledge has been internalised. 15 marks

SECTION - C
THINKING SKILLS - 25 MARKS

No. of periods: 60

- Q.4 Five out of six short answer type questions based on the survey sections in the modules. (Word limit 30-40 words) 5 x 3 = 15 marks
- Q.5 Ten objective type MCQs to test global and local understanding of the text. 10 marks

SECTION - D
RESEARCH BASED PROJECT/PORTFOLIO ASSESSMENT - VIVA VOCE

20 marks + 10 marks = 30 marks

No. of periods: 40

The textbook has inbuilt suggestions and activities for the students to prepare a portfolio or undertake work on a research based project. The purpose is to make students exhibit their efforts and achievements in one or more areas. It is expected that schools organise visits to the traditional seats of learning, historical places, cultural hubs and authentic areas. The project will be assessed through a viva voce also which carries 10 marks out of 30.

Students are expected to compile and collect material for the project/portfolio which would be assessed on the following points:

- **Presentation:** efforts put in, meaningful material with aesthetic sense.
- **Variety of content:** a wide variety of content in the form of audio visual media, extracts from journals, art work, conference updates, photographs, writing samples, maps, charts, extracts of interview and reading logs, etc.
- **Organisation of material collected has been presented with cogency and coherence**
- **Clarity of understanding and good judgement to test internalization of knowledge.**
- **Viva voce**

Prescribed Books:

A textbook on Knowledge Traditions and Practices of India Part - II, by CBSE 2013-14.

SYLLABUS OUTLINE

Each module has a Survey Article, extracts from the Primary texts, exercises and activities. All the modules are to be covered during one year of study.

1. **Astronomy in India** 20 Periods
The Beginnings of Indian Astronomy - The Early Historical Period-The Siddhāntic Era - The Kerala School - Other Post-Siddhāntic Developments
Primary Texts
Āryabhaṭa, Varāhamihira, Brahmagupta, Vaṭeśvara, Bhāskara, Parameśvara, Nīlakaṇṭha Somayājī, Jyeṣṭhadeva, Śaṅkara Varman
2. **Chemistry in India** 20 Periods
Early Chemical Techniques, Atomism in *Vaiśeṣika*, Chemistry in Early Literature, The Classical Age, Laboratory and Apparatus
Primary Texts
Vātsyāyana, Nāgārjuna, Al-Bīrūnī, Vāgbhaṭa - qualities of a teacher, disciple, disqualification of a disciple, location and building of the *rushshala* (laboratory), working arrangements of *rushshala*, material and equipment, Yaśodhara Bhaṭṭa-process of distillation, apparatus, *sarana samskara*, *sarana taila*, Prafull Chandra Ray
3. **Indian Literatures Part I & II introduction of Indian Literature-an essentially an Oral Indian Culture** 30 Periods

Rājaśekhara-various phases of Indian Literature: Ancient Period- Vedic Period, Middle period, Apabhransha, Modern Period

Primary Texts:

Bhakti Movement, Āṇḍāl, Guru Gobind Singh, Guru Nānak Dev, Hāla, Ilaṅgō, Kabīr, Kālidāsa, Kṣetrayya, Mīrabai, Mirzā Ghālib, Shāh Hussain, Veda Vyāsa, Viśṇu Śarmā, Nārāyaṇa: *Pañchatantra / Hitopadeśa*, *Kaundinyas narrative*

4. Indian Philosophical Systems 20 Periods

Mahātmā Buddha, Ādi Śaṅkarācārya, Śrī Rāmānujācārya - concept and schools of Indian Philosophy Sāṃkhya, Yoga, Vaiśeṣika, Nyāya, Mīmāṃsā, Vedānta, Sāṃkhya

Primary Text

The central question of Indian Philosophy: Vedic thought, Cārvāka Darśana, Jaina Darśana, Bauddha Darśana, Sāṃkhya Darśana, Yoga Darśana, Nyāya Darśana, Vaiśeṣika Darśana, Mīmāṃsā Darśana, Vedānta Darśana

5. Indian Traditional Knowledge on Environmental Conservation 20 periods

Nature, flora and fauna, sacred groves, reference in Manu Smṛiti: Vedic period and the cow, Bishnois and conservation, tradition of resistance

Primary Texts

Atharva-Veda, Mahābhārata, *Lalitavistara*: the birth of the Buddha, Bhāgavata Purāṇa, Kautilya's *Arthasāstra*

6. LIFE SCIENCES (1): Ayurveda for Life, Health and Well-being 10 periods

Definition of Ayurveda, The Principles of Ayurvedic Healing, treating diseases to restore health

Primary Texts

The oath of Caraka, Individualizing Diet

6. LIFE SCIENCES (2): The historical evolution of medical tradition in ancient India 10 Periods

Specialization into eight branches, The tradition of surgery, medical genetics in Ayurveda, inoculation for smallpox, microbiology and parasitology, communicable diseases and epidemics, An evolving pharmacopoeia, pluralistic approach to healthcare, cross-cultural interactions, a dynamic literary tradition, global resurgence of Ayurveda, contemporary status

Primary Texts

Dead body dissection, rhinoplasty, genetic basis of diseases, communicable diseases

6. LIFE SCIENCES (3): Plant and Animal Science in Ancient India 10 periods

Antiquity and continuity, Sources, Scope, Validation, Current status, Animal Science in Ancient India, Antiquity and continuity, Sources, Scope, Current status, Biodiversity and folk traditions

Primary Texts

Plants and their diseases, classification sources of animal meat

7. Mathematics in India 20 Periods

First Steps, Early Historical Period, The Classical Period, The Classical Period, post-Āryabhaṭa, The Kerala School of Mathematics, Features of Indian Mathematics

Primary Texts

Yajur-Veda, Rāmāyaṇa, Baudhāyana's Śulbasūtras, Āryabhaṭa, Bhāskara, Severus Sebokht, Syria, Brahmagupta, Bhāskarācārya, Jyeṣṭhadeva

8. Metallurgy in India

20 Periods

Definition, Metallurgy before and during the Harappan Civilization, after the Harappans, iron metallurgy, wootz steel, other iron pillars and beams, zinc, social context

Primary Texts

Rig-Veda, Arthaśāstra, Varāhamihira, Nāgārjuna, Vāgbhaṭa, Classification of metals: *Survarṇa* (gold) and its different types, prosperities, *Rajata* (silver), *Tāmra* (copper), *Loha* (iron), *Varṅga* (tin), *Nāga / śīśa* (lead), *Pittala* (brass)

9. Music in India

20 Periods

Origin, classification accompanied instrument, Bharata's *Nāṭyaśāstra*, New era, Medieval period, modern era, aesthetics of Indian classical music, forms of composition: *Dhrupada*, *thumari*, *gatal*, *tarana*, *tappa*, *folk music*, *film music*

Primary Texts

Taittīriya Brāhmaṇa, *Yājñavalkya Smṛti*, *Viṣṇu Purāṇa*, *Skanda Purāṇa*, *Sārāṅgadevasaṅgītaratnākara*, *Saṅgītajnamu* (melody: *Salagabhairavi*), *Ragasudharasa*

10. Theatre and Drama in India

20 Periods

Its Beginnings, Classical Period, Major Indian Dramatists: Bhāsa, Kālidāsa, Bhavabhūti, Medieval Period, *Kuṭiyaṭṭam*, *Yakṣagāna*, *Bhavāi*, *Jātrā*, *Nautarīkī*, *Swārīg*, *Rāmalīlā*, *Tamāśā*, *Nāchā*, *Pāṇḍavānī*, Modern Era

Primary Texts

Nāṭyaśāstra, *Viṣṇudharmottarapurāṇa*-Khaṇḍa III, Bhakti Movement, Women Bhakti Poets

Knowledge Traditions and Practices of India Class - XII Syllabus and Outline (2016 - 2017)

1. Agriculture: A Survey

10 Periods

Agriculture in Prehistory and Protohistory/ Textual Sources/ Types of Lands/ Rain-Fed and Irrigated Crops/ Implements/ Seed and Sowing/ Manures/ Pests and Their Management/ Cattle Management/ Horticulture and Arboriculture/ Fishing/ Agriculture and Society

Agricultural Heritage: Excerpts from Primary Texts

Rigveda/ Kṛṣiparāśara (c. 400 BCE)/ Kauṭilya (3rd or 4th century BCE)/ Kaśyapiyakṛṣisukti (800 CE)/ Vṛkṣāyurveda (c. 1000 CE)/ Kṛṣigītā (c. 1500 AD)

2. Architecture: A Survey

10 Periods

(1) Early and Classical Architecture

Temple Architecture/ Rock-Cut Structures/ Monolithic Temples/ Constructed Temples/ Public and Private Architecture

- Excerpts from Primary Texts :
 Vi__udharmottarapura_a/ Kautilya's Arthasastra/ Mayamata
 Architecture: A Survey
- (2) Medieval and Colonial Architecture
 Fort and Palace Architecture, Mosques, Mausoleums or Colonial Architecture
- 3. Dance: A Survey**
- (1) Classical Dance Forms **20 Periods**
 Classical Period/ Middle Period/ Modern Period/ Classical Dance Forms/ Bharatana yam/
 Kathakali/ Kathak/ Kucipudi/ Manipuri/ O'issi/ Sattriya
 Primary Texts on Dance in India: A Selection
 Na_yasastra (tr. Manomohan Ghosh)/ Na_yasastra/ Na_yasastra
 Dance: A Survey
- (2) Folk Dance Forms **10 Periods**
 Chau/ Bihu/ Rauf/ Padayani/ Dollu Kunitha/ Dandiya/ Ghumar/ Kalbelia/ Chau&fla/ Bha&gra/
 Giddha/ Garba/ Lava)ji/ Bamboo Dance
- 4. Education Systems and Practices: A Survey** **30 Periods**
 Goals of Indian Education/ Teaching and Learning/ The Teacher and the Student/ Centres of
 Education/ Temples as First Schools/ Gurukulas/ Viharas and Universities/ Community-Supported
 Education/ The Continuing System
 Primary Texts on Education in India: A Selection
 Two Types of Knowledge and the Right Pupil/ Mere Intellectual Knowledge Is Not Enough/ The Link
 between Teacher and Pupil/ Teachers Invite Students to Come to Them/ Controlling the Mind and the
 Senses: the Goal of Indian Education/ Teacher's Directives to Students on their Completion of Study/
 What Is a Useful Life?/ Hsüan-tsang's (Xuanzang) Impressions of Indian Education/ Hsüan-tsang's (Xuan
 Zang) Description of Nalanda University
 Narratives of Indian Education in the 17th, 18th and 19th Centuries
 An Italian Explorer's Record of Indian Education in the 17th Century/ A Description of Indian Education
 in the 18th Century/ The Teacher's Subsistence/ Respect for the Teacher/ Physical Education and
 Sports/ Description of the University at Navadveep (Nuddeah) in Bengal in 1791/ Love of Learning and
 Support for Education among Indians/ A Widespread Pre-Colonial Network of Indigenous Schools
- 5. Ethics: Individual and Social** **20 Periods**
 The Cosmic Order/ Buddhist Ethics/ Jain Ethics/ Sikh Ethics/ The Bhakti Movement
 Primary Texts on Ethics: Individual and Social: A Selection
 From Jain Granthas/From Buddhist Granthas/From Asoka's Edicts/ From the Kural (tr. P.S. Sundaram)
- 6. Martial Arts Traditions: A Survey** **20 Periods**
 Texts/ Practice of Martial Arts/ Stick Combat/ Ka_arippaya__u
 Martial Arts Traditions: A Selection from Primary Texts
 Wrestling in the Mahabharata/ Mallapura_a/ Marmasastram

- 7. Language and Grammar 20 Periods**
 Languages of India/ Study of Language in India/ Disciplines of Language Studies in India/ Classification of Speech-Sounds/ Theory of Grammar
 Primary Texts on Language: A Selection
 Reflections on Language from Vedic Sources/ Phonetics: Pa_i_iya Sik_a, (tr. & ed., Manmohan Ghosh)/ Nirukta (Etymology): The Nigha_u and the Nirukta of *ri Yaskacarya (tr. & ed., Lakshman Sarup)/ Patañjali's Mahabha_ya (adapted from S.N. Dasgupta's translation)/ Grammar, Language and Knowledge: Bhartihari's Vakyapadiya, Brahmaka_.a, (tr. K.A. Subramania Iyer)
- 8. Other Technologies: A Survey 20 Periods**
 Harappan Technologies/ Later pottery/ Glass/ Water Management/ Textile Technology/ Writing Technology/ Pyrotechnics/ Cosmetics and Perfumes
 Other Technologies: A Selection from Primary Texts
 Gemmology/ Water Management/ Textiles and Garments/ Perfumes and Cosmetics
- 9. Painting: A Survey 20 Periods**
 Classical Texts/ Mural Painting/Miniature Painting/Mughal Paintings/ Tanjore and Mysore Painting/Folk painting
 Painting: Excerpts from Primary Texts
 Eulogizing the art of painting for its functions and extraordinary qualities/ Preparation of the principal colours/ Process of preparation of colours for base plaster/ Order followed by the painter before he starts painting/ Preparation of base colours and qualities of a good painting/ Four kinds of paintings/ Representation of various themes/ Nature of the Art of Painting/ Eight Limbs of Painting
- 10. Society State and Polity: A Survey 20 Periods**
 Plurality of Indian Society/Underlying Principles of Indian Society/Family/Indian Society and Reform/The Indian State/Goal of a State/ Polity/Bureaucracy/Legal System
 Primary Texts on Society State and Polity: A Selection
 A Ruler's Dharma/ The Ideal King/ The Ideal of Government, and the Decay and Growth of Civilization/ Conditions' of the Welfare of Societies/ Birth Is No Criterion of Worth/ Dharma as the Supreme Authority/ The Origin of Kingship/ The Science of Polity/ Duties of a King/ The Seven Limbs of the State/ Society: Marriage/ Property of Women/ Position of Women/ Interreligious Harmony/ Islamic Society— the four-class division of society/ Four-class Classification/ Ethics: The Kural of Tiruvalluvar/ Uttaramerur Inscription
- 11. Trade & Commerce: A Survey Test 20 Periods**
 How Does Trade Work?/Trade in Ancient India/ Different Countries, Many Goods/ Ports and Sailors/ Land Routes/ India's Dominance up to Precolonial Times/ By-Products of Trade/ Further Reading.
Excerpts from the Primary Text
 Sigalovada Suttanta/ Jataka Tales/ Arthasastra/ Periplus Maris Erythraei ('Voyage around the Erythrean Sea')/ Tamil Literature/ An Inscription on Internal Trade.