Paper II

CIKS2T Indian Knowledge System Approaches: Society, Ecology, Science and Technology

MAX. MARKS:100
EXTERNAL:70
INTERNAL:30
PASS:40%
Credits: 6

Objectives: The course aims to introduce learners to the sociological, political, economic, ecological and scientific traditions of Indian Knowledge Systems, with a focus on indigenous concepts of social order, governance, economy, environment and scientific reasoning. It seeks to develop a holistic and critical understanding of India's intellectual contributions to society, technology, astronomy and mathematics.

Course Outcomes

After successful completion of the course, the learners will be able to:

1. Explain and critically interpret key Indian sociological and political concepts such as *puruṣārtha*, *āśrama*, *mārga*, *varṇa* and *jāti*, and relate them to indigenous ideas of state, governance and ethical responsibility.
2. Analyse indigenous economic and business models by drawing insights from classical Indian texts and contemporary reinterpretations of Indian economic thought.
3. Demonstrate an informed understanding of Indian ecological and environmental traditions, including concepts of nature, sacred landscapes and cosmological order, and their relevance for sustainable living.
4. Describe and evaluate major Indian contributions to science, astronomy and mathematics,

Section A

Unit 1: Indian Sociological and Political Thoughts: Purushartha, Ashrama, Marga, Varna-vyavastha, Jati-vyavastha, Indian conception of the State: Dharma and Duties of a King.

Unit 2: Indian Economics and Business Model: Insights from Dharmashastras, Shukraniti, Mahabharata, Arthashastra, New Indian Economic Model, Indian Business Model.

Unit 3: Ecology and Environment: Concept of Nature in Indian Tradition, Sacred forests, groves, hills, and mountains, Concept of Rta, Sacred Environment, Panchvati.

Section B

Unit 4: Indian Science and Technology: Indian contribution to Science and Technology, Technological Innovations.

Unit 5: Indian Astronomy: Vedanga Jyotish, Measuring Time, Indian Calendar, Solar and

Lunar Eclipses.

Unit 6: Indian Mathematics: Development of Mathematics in India, Mathematics contained in the Sulbasutras, Evolution of sine functions in India, Concept of proof in Indian Mathematics.

Suggested Readings:

1. Vedic Physics by Keshav Dev Verma, MotilalBanarsidass Publishers (2012).
2. Histrory of Science in India Volume-1, Part-I, Part-II, Volume VIII, by SibajiRaha, et al. National Academy of Sciences, India and The Ramkrishan Mission Institute of Culture, Kolkata (2014).
3. India's Glorious Scientific Tradition by Suresh Soni, Ocean Books Pvt. Ltd. (2010).
4. Ancient Indian Scientific Thought and Modern Theories, Sanji Kumar Sadhukhan and Dhiranendranath Banerjee
5. Ancient Indian Science and its Relevance to the Modern World, Govindhan
6. Indian Art: Forms, Concerns and Development in Historical Perspective (History of Science, Philosophy and Culture in Indian Civilization), B N Goswani and Kavita Singh(ed.)
13. Vedic Mathematics: Past, Present and Future, Siksha Sanskriti Uthana Nyasa, New Delhi.
14. Bal Ram Singh , Nath Girish , Umesh Kumar Singh, Science and Technology in Ancient Indian Texts, D.K. Print World Ltd; 1st edition (30 January 2012)
15. The Cultural heritage of India,(set of 9 volumes) Institute of Culture, India
16. Prof.W.k.lele, Methodology of Ancient Indian Science, Chaukhambhasur bharati Prakashan's of Chaukhambha, 2013
17. Vardhatrayi Gurupada Sarma Halder, History of Ancient Indian Medical Science,SharadaPrakashan, 1996
18. Ravi PrakashArya, Engineering and Technology in Ancient India,Indian Foundation for Vedic Science, 2020
19. Singh, Bal Ram, Indian family System: The Concept, Practises and Current Relevance, Center for Indic Studies, University of Massachusetts and D.K. Printworld, New Delhi, 2011.