

MANGALORE UNIVERSITY
Department of History
MA History

Paper No. HSE: 457 (Open Elective)

Science and Technology of Pre-Modern India

Learning objective: This paper's main objective is to provide an insight into the prevalence of the aspects of science and technology from pre-historic period to medieval period. Further it also attempts to know the ancient Indians contributions to science and technology and medicine etc

Learning outcome; After completing the course, the students will come to know about the evidence for understanding the aspects of science and technology during pre-historic period and also the persons who contributed to the field of medicine, mathematics, science and technology.

Unit. I – Science and Technology of Harappan period-pottery technology-Copper/bronze metallurgy-Post-Harappan metallurgy-Iron technology-megaliths-iron age ceramics-polished ware technology:RCPW,PGW,NBPW- Agricultural science and technology.

Unit. II- Developments in Astronomy and mathematics- Bhaskara-Aryabhata-Varahamihira- medicine and surgery- Ayurveda:Vriksha, Hasti and Asva-Samhitas of charaka, Susruta and Bhela.

Unit. III- Maritime technology, port construction technology- shipping technology-navigational technology.

Unit. IV- Science and Technology in the age of the Delhi Sultans- agricultural technology- textile technology-Development of science and technology in the age of the Mughals- Agricultural technology - maritime technology- medical systems-and technology- bio sciences and bio-technology.

Reference Books:

1. A.K.Bag (ed.) A.K. Bag, *History of Technology in India*, 4 vols. New Delhi.
2. _____. *Science and Civilisation in India*, vol. I. Navarang Publishers.
3. _____. *History of Mathematics in Ancient and Medieval India*, Delhi
4. _____. *India and Central Asia: Science and Technology*, 2 vols. New Delhi
5. Charles Singer (ed.) *History of Technology*, 4vols.
6. Romila Thapar, *Cultural Past*.
7. Irfan Habib, *Prehistory*, People's history of India, Vol.1, Tulika, Aligarh, 2001.
8. _____. *Technology in Medieval India*, 650-1750, Delhi, 2009.
9. _____. *Man and Environment*, Delhi, 2011.
10. _____. *Agrarian System of Mughal India*,
11. _____. and Vijay Kumar Thakur, *The Vedic Age*, Reprint, New Delhi, 2009.

12. _____. and Vivekanand Jha, *Muryan India*, Delhi, 2005.
13. Shrimali, K.M., *The Age of Iron and the Religious Revolution, 700-350 BC*, Delhi, 2008.
14. Al-Hassan et.al., *Islamic technology, An Illustrated History*.
15. Chattopadhyaya, S.P., et. al. *Science, Philosophy and Culture*, 2 Vols.
16. Charles Heslie, *Asian Medical Systems*.
17. Irfan Habib, 'Technology and Barrier to Social Change in Mughal India', *Indian Historical Review*, Vol.5, No.1-2, 1978-79.
18. *The Technology and economy of Mughal India* (IESHR), Vol.17, No.2, 1980.
19. Shereen Ratnagar, *Encounters: The Westerly Trade of Harappan Civilisation*, New Delhi.
20. D.P. Agarwal, *The copper Bronze Age in India*, Munshiram Manoharlal, New Delhi.
21. D. B. Chakrabarti and Nayanjyoti Lahiri, *Copper and Its Alloy in Ancient India*, New Delhi
22. D.M. Bose, Sen & Subbarappa, *A Concise History of Sciences in India*,
23. Rehman, ed. *History of Science and Technology in India*, vol. II.

