

SYLLABUS

Six months Enrichment Course on Vedic Mathematics

introduced by

The Department of Mathematics,

B N College, Dhubri

200 Marks

Course Description:

This six course emphasizes on the old techniques/sutras that helps in solving mathematical arithmetic in an easy and faster way. These Sutras (Formulae) and sub-sutras (sub-formulae) can be used for different problems involved in arithmetic, algebra, geometry, calculus, conic. As a whole, this course will help student to improve the speed of their calculations and solve mathematical problem faster and more efficiently thereby cultivating an interest for numbers and eliminating the math-phobia present in the students.

Course Outline:

Unit 1: Introduction: *Vedic Mathematics, Vedic Mathematics Essential, Vedic Sutras and Sub-Sutra.*

Unit 2: Addition: *Introduction, Vedic sutras for addition - Purna Puranabhyam, Sankalan Vyavkalanabhyam and Ekhadhikena Purvena. Meaning of Vedic Sutras and applications.*

Unit 3: Subtraction: Introduction; Vedic Sutra for subtraction - *Nikhilam Navatasaramam Dastatah and Vinculum.* Meaning and application, Digit Separator Method for subtraction.

Unit 4:

4.1 Multiplication: Introduction, Vedic Sutras: - *Antyayor dasakepi, Nikhilam Navatasaramam Dastatah, Anurupyena, Ekanyuena Purvena, Antyayoshatakepi, Vamanlavavoh Dasake api, Vamanlyayoh Dasake Gunijah Api and Urdhva-Tiryak*, their meanings and applications. Dot and stick Method of Multiplication, Multiplication of three numbers, Multiplication of four numbers.

4.2 Multiplication: Through observation: - Introduction, Multiplication of number through 11, 111, 1111, 25, 152, 625, 5, 50, 51, etc.

4.3 Multiplication: In Algebra: - Introduction, Urdhva Tiryagebyana sutra of multiplication of Binomial and Trinomials. Multiplication of Polynomials. Having unequal number of terms.

Unit 5: Division: Introduction Vedic Sutra- *Nikhilam Paravartya Yojayet, Udhva Tiryak and Dhvajanka method* - their meaning and applications.

Unit 6: Square: Introduction Vedic Method for squaring: *Ekadhikena Purvena, Yavadunam Tavaduni kritya Vargena Yojayet, Duplex method and Urdhva Tiryagbhyam, it's meaning and applications.*

Unit 7: Square Root: Introduction, Vilokanam and Duplex Vedic Method of finding square root.

Unit 8: Square Root of Irrational Number: Introduction, Vedic method Vilokanam and use of Differential Calculus in extracting square root.

References:

- 1) R K Thakur, The Essentials of Vedic Mathematics, Rupa Publications India Pvt. Ltd 2013
- 2) R K Thakur, Advanced Vedic Mathematics, Rupa Publications India Pvt. Ltd 2019