

MTH880:VEDIC MATHEMATICS

Course Outcomes: Through this course students should be able to

CO1 :: develop analytical thinking through vedic mathematics and learn efficient approaches of basic computing.

CO2 :: analyze basic mathematical skills by learning new methods of multiplication for fast calculations of specific patterns.

CO3 :: enumerate the quick way of algebraic multiplication and concept of digital roots to verify the solution.

CO4 :: extend the knowledge of division related to base concepts.

CO5 :: calculate the squares and cubes of big numbers efficiently.

CO6 :: understand the concept of calculating square roots and cube roots.

Unit I

Addition, Subtraction and Multiplication with recognizable patterns : Multiplication of any number by 9, 99, 999, 9999, 99999, Introduction to Sutras, High Speed Addition, Fast Subtraction using complement, Multiplication by 11, 111, 1111, Multiplication by 12, 13, ... 19, Multiplication by 112, 1112, History of Vedic mathematics

Unit II

Base multiplication : Multiplication by numbers below the base, Multiplication by numbers above the base, Multiplication of 3 numbers near a certain base, Multiplication of numbers with different working base, Working base multiplication, Decimal Multiplication

Unit III

Generic and Algebraic multiplication : Multiplication by two-digit numbers, Multiplication by three and four-digit numbers, Multiplication of algebraic equations having two terms, Multiplication of algebraic equations with large power of variables, Special cases, Digital roots

Unit IV

Division : Divisibility, Division by numbers less than the base, Division by numbers more than the base, Long Division in one line, Fractional division, Divisibility by prime numbers, Factorizing quadratic expressions, Algebraic division, Factorization of cubics

Unit V

Squaring and Cubing : Square of numbers in patterns, Square of number above the base, Square of number below the base, Square of any number using duplex, Cubes of numbers, Cube of number above the base, Cube of number below the base, Cube of any number

Unit VI

Square roots and Cube roots : Square roots of exact squares, Square Roots of imperfect squares, Easy Square Roots of Exact squares, Square Roots of decimal numbers, Cube roots of exact cubes, Quick Cube Roots of Exact cubes

Text Books:

1. VEDIC MATHEMATICS FOR ALL AGES by VANDANA SINGHAL, MOTILAL BANARSIDASS PUBLISHERS

References:

1. VEDIC MATHEMATICS by BHARATI KRISHNA TIRTHAJI MAHARAJA / V. S. AGARWALA, MOTILAL BANARSIDASS PUBLISHERS

2. HOW TO BECOME A HUMAN CALCULATOR by ADITI SINGHAL, S Chand Publishing