



**MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous) (SFW)**

**DEPARTMENT OF MATHEMATICS with CA  
(Certificate Course)**

<b>Class</b>	<b>: B.Sc Mathematics (CA)</b>	<b>Hours</b>	<b>: 45 hrs</b>
<b>Semester</b>	<b>: VI</b>	<b>Credits</b>	<b>: 1</b>
<b>Subject Code</b>	<b>:</b>		
<b>Subject</b>	<b>: Speed Arithmetic</b>		

**Unit I** : Addition –Subtraction – Mixture of Addition and Subtraction

**Unit II** : Multiplication Using Base 10 and its powers – The multiplicands are both below a base – The multiplicands are both above a base – one of the numbers is below and the other above base 10 and its powers - Multiplication of more than two numbers – Multiplication of numbers are not near the base 10, 100 etc - Multiplication of numbers have different bases –Method using vertical and Cross wise Multiplication – Binary method –Some special cases of Multiplication – Multiplication one of the numbers is a series of the same digit – Summary of Multiplication methods.

**Unit III** : Squaring of numbers ending in 5 – squaring of numbers ending in a digit other than 5 – A combination of method – Another method of Squaring – Sums and Differences of Squares – Express the square of a number as the sum of two squared numbers –Express the square of a number as the difference of two squared numbers – Cubing of numbers – Method 1 – Method 2 – Raising of Fourth and Higher Powers

**Unit IV** – Division – A Simple Method - Method of Complements – Method of Cumulation – Division when Divisors are Different from 9's but are close to the Powers of 10 - The Multiples Method – Changes of Sign Method – Combination of Methods –Vertical and Cross Product Method – A variation using vinculum

**Unit V**- Divisibility – Method of Determining Positive Osculators – Method of Osculation Using Positive Osculators –Chain Method , Another Method – Method of Finding Negative Osculators - Method of Negative Osculation – Group Osculation – Types of Divisors in Group Osculation and their Corresponding Osculators –Osculation of the first type –Osculation of the second type – Osculation of the third type

**Text Book:** Dr. T. A. Ramasubban, **Speed Arithmetic (Based on Vedic Word–Formulas)**,  
Second Edition, Published by The Author, September 2001.

**Reference Book: Vedic Mathematics**, Jagadguru Swami Sri Bharati Krsna Tirthaji Maharaja,  
Motilal Banarasisidass ,Indological Publishers &Booksellers, First Edition 1965

Unit I - Chapter 3 ( Full)

Unit II - Chapter 4 (Full)

Unit III - Chapter 5 (Full)

Unit IV - Chapter 6 (Full)

Unit V - Chapter 7 (Full)