

## iv. Mathematics

### **iv) Mathematics (30 Marks)**

#### **Content (24Marks)**

##### **I. Numbers :**

Numbers – four fundamental operations ( addition, subtraction, multiplication, division) -Knowing our Numbers & International system – Prime and composite numbers-Rounding of numbers - Whole Numbers-Playing with Numbers - Divisibility rules – Factors- Methods of prime factorization-Co-primes- twin primes- LCM-HCF- negative numbers- integers-Fractions-Decimals- Rational Numbers-Squares- Cubes- Square Roots and Cuberoots-Profit and Loss .

##### **II. Mensuration :**

Length -Weight -Capacity -Time -Money - Area and Perimeter of Triangle- Square-Rectangle- Rhombus- Circle- Trapezium- Parallelogram - The perimeter for square and rectangle through pattern - Surface area and volume of Cube and Cuboid.

##### **III. Geometry :**

Naming of the given figures and Parts of 2D figures of Triangle, Square and Rectangle -Identification and counting of Edges- Corners- Faces (3D figures)-Introduction of Perimeter and Area of given shapes- Geometrical patterns (TANGRAM)-Introduction of circle- center, diameter and radius-Primary Geometry concepts (Point, straight line, line segments, ray)-Types of angles (Right, Obtuse & Acute angles)-Open & closed figures- Symmetry- line symmetry & rotation symmetry ( $1/2, 1/4$  )- Picture patterns- Area and Perimeter- Lines and Angles,-Triangle and its properties - Congruency of Triangles- Quadrilaterals- Practical Geometry- Construction of Triangles-Construction of Quadrilaterals- Exploring Geometrical Figures.

##### **IV. Data Handling:**

Reading and interpreting the Data (Bar graphs, picto graphs)- Analysis of the data with tallymarks- Collection & organisation of data -Representation of Data .

##### **V.Algebra:**

Patterns – making rules-Introduction of variables - Expressions with variables & Rules-Number forms of even and odd( $2n, 2n+1$ )- Introduction to unknowns- Simple equations - Algebraic expressions- Exponents & Powers- Linear Equations in one variable-Factorization.

##### **VI.Arithmetic:**

Comparing quantities using proportion -Concept and applications of Ratio-Proportion of equality ratios - Unitary method- Understanding ratios & Proportions - Direct and Inverse proportion.

##### **Mathematics Methodology (D.El.Ed.) (06 Marks)**

- Nature and Definitions of Mathematics
- Aims, values and instructional objectives of teaching Mathematics
- Methods of Teaching & Remedial measures in Mathematics
- Instructional Material, TLM and Resource Utilization in Mathematics
- Curriculum, Text Book & Instructional Planning.
- Evaluation and Continuous Comprehensive Evaluation.