

**SYLLABUS INDICATOR AND EXAM PORTION  
CBSE – 2024-25**

**Subject: Mathematics**

**Grade: VIII**

PHASE 1			
Ch. No.	Chapter Name	Subtopics	PT1 portion Total Marks: 40 Duration: 1 hour 30 minutes
1	Rational Numbers	<ul style="list-style-type: none"> <li>▪ 1.1 Introduction</li> <li>▪ 1.2 Properties of Rational Numbers               <ul style="list-style-type: none"> <li>○ 1.2.1 Closer</li> <li>○ 1.2.2 Commutativity</li> <li>○ 1.2.3 Associativity</li> <li>○ 1.2.4 The role of zero (0)</li> <li>○ 1.2.5 The role of 1</li> <li>○ 1.2.6 Distributivity of multiplication over addition for rational numbers</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ 1.1 Introduction</li> <li>▪ 1.2 Properties of Rational Numbers               <ul style="list-style-type: none"> <li>○ 1.2.1 Closer</li> <li>○ 1.2.2 Commutativity</li> <li>○ 1.2.3 Associativity</li> <li>○ 1.2.4 The role of zero (0)</li> <li>○ 1.2.5 The role of 1</li> <li>○ 1.2.6 Distributivity of multiplication over addition for rational numbers</li> </ul> </li> </ul>
2	Linear Equations in One Variable	<ul style="list-style-type: none"> <li>▪ 2.1 Introduction</li> <li>▪ 2.2 Solving Equations having the Variable on both Sides</li> <li>▪ 2.3 Reducing Equations to Simpler Form</li> </ul>	<ul style="list-style-type: none"> <li>▪ 2.1 Introduction</li> <li>▪ 2.2 Solving Equations having the Variable on both Sides</li> <li>▪ 2.3 Reducing Equations to Simpler Form</li> </ul>
4	Data Handling	<ul style="list-style-type: none"> <li>▪ 4.1 Looking for Information</li> <li>▪ 4.2 Circle Graph or Pie Chart               <ul style="list-style-type: none"> <li>○ 4.2.1 Drawing pie charts</li> </ul> </li> <li>▪ 4.3 Chance and Probability               <ul style="list-style-type: none"> <li>○ 4.3.1 Getting a result</li> <li>○ 4.3.2 Equally likely outcomes</li> <li>○ 4.3.3 Linking chances to probability</li> <li>○ 4.3.4 Outcomes as events</li> <li>○ 4.3.5 Chance and probability related to real life</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ 4.1 Looking for Information</li> <li>▪ 4.2 Circle Graph or Pie Chart               <ul style="list-style-type: none"> <li>○ 4.2.1 Drawing pie charts</li> </ul> </li> <li>▪ 4.3 Chance and Probability               <ul style="list-style-type: none"> <li>○ 4.3.1 Getting a result</li> <li>○ 4.3.2 Equally likely outcomes</li> <li>○ 4.3.3 Linking chances to probability</li> <li>○ 4.3.4 Outcomes as events</li> <li>○ 4.3.5 Chance and probability related to real life</li> </ul> </li> </ul>
5	Squares and Square Roots	<ul style="list-style-type: none"> <li>▪ 5.1 Introduction</li> <li>▪ 5.2 Properties of Square Numbers</li> <li>▪ 5.3 Some More Interesting Patterns</li> </ul>	<ul style="list-style-type: none"> <li>▪ 5.1 Introduction</li> <li>▪ 5.2 Properties of Square Numbers</li> <li>▪ 5.3 Some More Interesting Patterns</li> </ul>

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		<ul style="list-style-type: none"> <li>▪ 5.4 Finding the Square of a Number               <ul style="list-style-type: none"> <li>○ 5.4.1 Other patterns in squares</li> <li>○ 5.4.2 Pythagorean triplets</li> </ul> </li> <li>▪ 5.5 Square Roots               <ul style="list-style-type: none"> <li>○ 5.5.1 Finding square roots</li> <li>○ 5.5.2 Finding square root through repeated subtraction</li> <li>○ 5.5.3 Finding square root through prime factorisation</li> <li>○ 5.5.4 Finding square root by division method</li> </ul> </li> <li>▪ 5.6 Square Roots of Decimals</li> </ul>	<ul style="list-style-type: none"> <li>▪ 5.4 Finding the Square of a Number               <ul style="list-style-type: none"> <li>○ 5.4.1 Other patterns in squares</li> <li>○ 5.4.2 Pythagorean triplets</li> </ul> </li> <li>▪ 5.5 Square Roots               <ul style="list-style-type: none"> <li>○ 5.5.1 Finding square roots</li> <li>○ 5.5.2 Finding square root through repeated subtraction</li> <li>○ 5.5.3 Finding square root through prime factorisation</li> <li>○ 5.5.4 Finding square root by division method</li> </ul> </li> <li>▪ 5.6 Square Roots of Decimals</li> </ul>
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PHASE 2			
Ch. No.	Chapter Name	Subtopics	HYE portion
			<b>Total Marks: 80</b> <b>Duration: 3 hours</b>
			PT1 portion is included
3	Understanding Quadrilaterals	<ul style="list-style-type: none"> <li>▪ 3.1 Introduction               <ul style="list-style-type: none"> <li>○ 3.1.1 Convex and concave polygons</li> <li>○ 3.1.2 Regular and irregular polygons</li> </ul> </li> <li>▪ 3.2 Sum of the Measures of the Exterior Angles of a Polygon</li> <li>▪ 3.3 Kinds of Quadrilaterals               <ul style="list-style-type: none"> <li>○ 3.3.1 Trapezium</li> <li>○ 3.3.2 Kite</li> <li>○ 3.3.3 Parallelogram</li> <li>○ 3.3.4 Elements of a parallelogram</li> <li>○ 3.3.5 Angles of a parallelogram</li> <li>○ 3.3.6 Diagonals of a parallelogram</li> </ul> </li> <li>▪ 3.4 Some Special Parallelograms               <ul style="list-style-type: none"> <li>○ 3.4.1 Rhombus</li> <li>○ 3.4.2 A rectangle</li> <li>○ 3.4.3 A square</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ 3.1 Introduction               <ul style="list-style-type: none"> <li>○ 3.1.1 Convex and concave polygons</li> <li>○ 3.1.2 Regular and irregular polygons</li> </ul> </li> <li>▪ 3.2 Sum of the Measures of the Exterior Angles of a Polygon</li> <li>▪ 3.3 Kinds of Quadrilaterals               <ul style="list-style-type: none"> <li>○ 3.3.1 Trapezium</li> <li>○ 3.3.2 Kite</li> <li>○ 3.3.3 Parallelogram</li> <li>○ 3.3.4 Elements of a parallelogram</li> <li>○ 3.3.5 Angles of a parallelogram</li> <li>○ 3.3.6 Diagonals of a parallelogram</li> </ul> </li> <li>▪ 3.4 Some Special Parallelograms               <ul style="list-style-type: none"> <li>○ 3.4.1 Rhombus</li> <li>○ 3.4.2 A rectangle</li> <li>○ 3.4.3 A square</li> </ul> </li> </ul>
6	Cubes and Cube Roots	<ul style="list-style-type: none"> <li>▪ 6.1 Introduction</li> <li>▪ 6.2 Cubes               <ul style="list-style-type: none"> <li>○ 6.2.1 Some interesting patterns</li> <li>○ 6.2.2 Smallest multiple that is a perfect cube</li> </ul> </li> <li>▪ 6.3 Cube Roots               <ul style="list-style-type: none"> <li>○ 6.3.1 Cube root through prime factorisation method</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ 6.1 Introduction</li> <li>▪ 6.2 Cubes               <ul style="list-style-type: none"> <li>○ 6.2.1 Some interesting patterns</li> <li>○ 6.2.2 Smallest multiple that is a perfect cube</li> </ul> </li> <li>▪ 6.3 Cube Roots               <ul style="list-style-type: none"> <li>○ 6.3.1 Cube root through prime factorisation method</li> </ul> </li> </ul>

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7	Comparing Quantities	<ul style="list-style-type: none"> <li>▪ 7.1 Recalling Ratios and Percentages</li> <li>▪ 7.2 Finding Discounts               <ul style="list-style-type: none"> <li>○ 7.2.1 Estimation in percentages</li> </ul> </li> <li>▪ 7.3 Sales Tax/Value Added Tax/Goods and Services Tax</li> <li>▪ 7.4 Compound Interest</li> <li>▪ 7.5 Deducing a Formula for Compound Interest</li> <li>▪ 7.6 Applications of Compound Interest Formula</li> </ul>	<ul style="list-style-type: none"> <li>▪ 7.1 Recalling Ratios and Percentages</li> <li>▪ 7.2 Finding Discounts               <ul style="list-style-type: none"> <li>○ 7.2.1 Estimation in percentages</li> </ul> </li> <li>▪ 7.3 Sales Tax/Value Added Tax/Goods and Services Tax</li> <li>▪ 7.4 Compound Interest</li> <li>▪ 7.5 Deducing a Formula for Compound Interest</li> <li>▪ 7.6 Applications of Compound Interest Formula</li> </ul>
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PHASE 3			
Ch. No.	Chapter Name	Subtopics	PT2 portion Total Marks: 40 Duration: 1 hour 30 minutes
8	Algebraic Expressions and Identities	<ul style="list-style-type: none"> <li>▪ 8.1 Addition and Subtraction of Algebraic Expressions</li> <li>▪ 8.2 Multiplication of Algebraic Expressions: Introduction</li> <li>▪ 8.3 Multiplying a Monomial by a Monomial               <ul style="list-style-type: none"> <li>○ 8.3.1 Multiplying two monomials</li> <li>○ 8.3.2 Multiplying three or more monomials</li> </ul> </li> <li>▪ 8.4 Multiplying a Monomial by a Polynomial               <ul style="list-style-type: none"> <li>○ 8.4.1 Multiplying a monomial by a binomial</li> <li>○ 8.4.2 Multiplying a monomial by a trinomial</li> </ul> </li> <li>▪ 8.5 Multiplying a Polynomial by a Polynomial               <ul style="list-style-type: none"> <li>○ 8.5.1 Multiplying a binomial by a binomial</li> <li>○ 8.5.2 Multiplying a binomial by a trinomial</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ 8.1 Addition and Subtraction of Algebraic Expressions</li> <li>▪ 8.2 Multiplication of Algebraic Expressions: Introduction</li> <li>▪ 8.3 Multiplying a Monomial by a Monomial               <ul style="list-style-type: none"> <li>○ 8.3.1 Multiplying two monomials</li> <li>○ 8.3.2 Multiplying three or more monomials</li> </ul> </li> <li>▪ 8.4 Multiplying a Monomial by a Polynomial               <ul style="list-style-type: none"> <li>○ 8.4.1 Multiplying a monomial by a binomial</li> <li>○ 8.4.2 Multiplying a monomial by a trinomial</li> </ul> </li> <li>▪ 8.5 Multiplying a Polynomial by a Polynomial               <ul style="list-style-type: none"> <li>○ 8.5.1 Multiplying a binomial by a binomial</li> <li>○ 8.5.2 Multiplying a binomial by a trinomial</li> </ul> </li> </ul>
9	Mensuration	<ul style="list-style-type: none"> <li>▪ 9.1 Introduction</li> <li>▪ 9.2 Area of a Polygon</li> <li>▪ 9.3 Solid Shapes</li> <li>▪ 9.4 Surface Area of Cube, Cuboid and Cylinder               <ul style="list-style-type: none"> <li>○ 9.4.1 Cuboid</li> <li>○ 9.4.2 Cube</li> <li>○ 9.4.3 Cylinders</li> </ul> </li> <li>▪ 9.5 Volume of Cube, Cuboid and Cylinder               <ul style="list-style-type: none"> <li>○ 9.5.1 Cuboid</li> <li>○ 9.5.2 Cube</li> <li>○ 9.5.3 Cylinder</li> </ul> </li> <li>▪ 9.6 Volume and Capacity</li> </ul>	<ul style="list-style-type: none"> <li>▪ 9.1 Introduction</li> <li>▪ 9.2 Area of a Polygon</li> <li>▪ 9.3 Solid Shapes</li> <li>▪ 9.4 Surface Area of Cube, Cuboid and Cylinder               <ul style="list-style-type: none"> <li>○ 9.4.1 Cuboid</li> <li>○ 9.4.2 Cube</li> <li>○ 9.4.3 Cylinders</li> </ul> </li> <li>▪ 9.5 Volume of Cube, Cuboid and Cylinder               <ul style="list-style-type: none"> <li>○ 9.5.1 Cuboid</li> <li>○ 9.5.2 Cube</li> <li>○ 9.5.3 Cylinder</li> </ul> </li> <li>▪ 9.6 Volume and Capacity</li> </ul>

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10	Exponents and Powers	<ul style="list-style-type: none"> <li>▪ 10.1 Introduction</li> <li>▪ 10.2 Powers with Negative Exponents</li> <li>▪ 10.3 Laws of Exponents</li> <li>▪ 10.4 Use of Exponents to Express Small Numbers in Standard Form               <ul style="list-style-type: none"> <li>○ 10.4.1 Comparing very large and very small numbers</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ 10.1 Introduction</li> <li>▪ 10.2 Powers with Negative Exponents</li> <li>▪ 10.3 Laws of Exponents</li> <li>▪ 10.4 Use of Exponents to Express Small Numbers in Standard Form               <ul style="list-style-type: none"> <li>○ 10.4.1 Comparing very large and very small numbers</li> </ul> </li> </ul>
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PHASE 4			
Ch. No.	Chapter Name	Subtopics	YE portion
			<b>Total Marks: 80</b> <span style="float: right;"><b>Duration: 3 hours</b></span> <ul style="list-style-type: none"> <li>▪ Ch. 2 &amp; Ch. 6 of PT1; Ch. 3 of HYE are included</li> <li>▪ PT2 portion is included</li> </ul>
11	Direct and Inverse Proportion	<ul style="list-style-type: none"> <li>▪ 11.1 Introduction</li> <li>▪ 11.2 Direct Proportion</li> <li>11.3 Inverse Proportion</li> </ul>	<ul style="list-style-type: none"> <li>▪ 11.1 Introduction</li> <li>▪ 11.2 Direct Proportion</li> <li>▪ 11.3 Inverse Proportion</li> </ul>
12	Factorisation	<ul style="list-style-type: none"> <li>▪ 12.1 Introduction               <ul style="list-style-type: none"> <li>○ 12.1.1 Factors of natural numbers</li> <li>○ 12.1.2 Factors of algebraic expressions</li> </ul> </li> <li>▪ 12.2 What is Factorisation?               <ul style="list-style-type: none"> <li>○ 12.2.1 Method of common factors</li> <li>○ 12.2.2 Factorisation by regrouping terms</li> <li>○ 12.2.3 Factorisation using identities</li> <li>○ 12.2.4 Factors of the form <math>(x + a)(x + b)</math></li> </ul> </li> <li>▪ 12.3 Division of Algebraic Expressions               <ul style="list-style-type: none"> <li>○ 12.3.1 Division of a monomial by another monomial</li> <li>○ 12.3.2 Division of a polynomial by a monomial</li> </ul> </li> <li>▪ 12.4 Division of Algebraic Expressions Continued (Polynomial <math>\div</math> Polynomial)</li> </ul>	<ul style="list-style-type: none"> <li>▪ 12.1 Introduction               <ul style="list-style-type: none"> <li>○ 12.1.1 Factors of natural numbers</li> <li>○ 12.1.2 Factors of algebraic expressions</li> </ul> </li> <li>▪ 12.2 What is Factorisation?               <ul style="list-style-type: none"> <li>○ 12.2.1 Method of common factors</li> <li>○ 12.2.2 Factorisation by regrouping terms</li> <li>○ 12.2.3 Factorisation using identities</li> <li>○ 12.2.4 Factors of the form <math>(x + a)(x + b)</math></li> </ul> </li> <li>▪ 12.3 Division of Algebraic Expressions               <ul style="list-style-type: none"> <li>○ 12.3.1 Division of a monomial by another monomial</li> <li>○ 12.3.2 Division of a polynomial by a monomial</li> </ul> </li> <li>▪ 12.4 Division of Algebraic Expressions Continued (Polynomial <math>\div</math> Polynomial)</li> </ul>
13	Introduction to Graph	<ul style="list-style-type: none"> <li>▪ 13.1 Introduction               <ul style="list-style-type: none"> <li>○ 13.1.1 A line graph</li> </ul> </li> <li>▪ 13.2 Some Applications</li> </ul>	<ul style="list-style-type: none"> <li>▪ 13.1 Introduction               <ul style="list-style-type: none"> <li>○ 13.1.1 A line graph</li> </ul> </li> <li>▪ 13.2 Some Applications</li> </ul>